Integrating Psychiatry and Primary Care
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Maria Muzik
Katherine Lisa Rosenblum *Editors*

Motherhood in the Face of Trauma

Pathways Towards Healing and Growth

WORLD PSYCHIATRIC ASSOCIATION

Springer

Integrating Psychiatry and Primary Care

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Preface

The transition to motherhood is evocative, filled with anticipation and expectation. For mothers who have experienced trauma, this transition may evoke both hope and joy, yet simultaneously serve as a stirring reminder of past hurts, worries, and feelings of vulnerability. The uniqueness of this period includes it's place within a multigenerational line, with opportunities to maintin or alter intergenerational patterns. That this perinatal period is so richly filled with unknowns, fears, and positive expectations makes it a particularly powerful moment for intervention, and at this unique and special time all therapeutic interventions can be considered to represent a "two-generation" approach.

While many women worry that a history of trauma is determinative and hold fears that prior experiences leave them vulnerable to the repetition of past tragedies, clinical and research data tell a different story—one that leaves great hope for healing, recovery, and resilience. Early experiences are not determinative, and clinical wisdom and research data both confirm that while prior adversity conveys risks, there is great potential for interrupting intergenerational transmission of risk and for positive growth in mother and child.

The women we have had the privilege to work with over the past years—both clinically and in our research—have taught us much about strength and resilience. We have heard from mothers who have faced significant adversities, from child abuse to domestic violence, traumatic birth, loss, sexual violence, community violence, and/or war. These mothers have taught us about the importance of acknowledging the struggle—recognizing the prevalence of traumatic experiences in women's lives and the impact these experiences have as women face motherhood. Yet these mothers have also taught us about the capacity to find the strength, to recognize the struggle, and to heal and thrive. Many of these women have carried forward a passion and commitment to "do better" for their own daughters and sons, and remind us that suffering and pain can lay fertile soil for great insight, strength, and power.

Importantly, what we note anecdotally is that those who make this shift often share a common thread related to this resilience, that of having experienced healing relationships. These healing relationships come in many forms—with a romantic partner, a parent, a midwife, a good friend, or a therapist. These relationships create is a sense of hope for a different way of being, a way of being without violence, of the potential for safety, and a positive vision for self-in-relationship with others.

We chose to write this book to honor women who face adversity—to recognize the prevalence of trauma, to validate their struggle, and to document the impact of these experiences. In the chapters that follow we learn about the potential impact on women's biology and psychology, chronicle their stories and experiences, and importantly, recognize the potential for resilience and posttraumatic growth. We highlight programs and interventions that are making a positive difference for women and their families, potentiating healing across generations. It is our hope that readers will share our deep appreciation for the struggles many women face, while also finding inspiration in the opportunities for promoting positive growth and resilience.

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Part IV Healing and Recovery

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Part I

Introduction

Mental Health Problems Among Childbearing Women: Historical Perspectives and Social Determinants

1

Jane Fisher, Catherine Acton, and Heather Rowe

Abstract

Mental health problems among women who are pregnant, or who have recently given birth occur in social, cultural, economic and political contexts. These influence their life opportunities and access to health. They also influence the conceptual frameworks of academics and clincians and therefore the ways in which research questions are posed, investigations designed and data interpreted, and also how individual experiences are assessed, explained and responded to. This chapter provides a perspective on how historical conceptualisations and social determinants have influenced perinatal psychology and psychiatry.

Understanding of the mental health problems experienced by women who are pregnant or have recently given birth, and their implications for clinical and public health responses to their needs, requires consideration of the history of ideas, the development of methods and conceptual frameworks and the sociopolitical contexts in which these have occurred. In this chapter we will provide an overview of the history of conceptualisations around women's perinatal health and the implications of political, economic and social inequalities, and we will elaborate on the impact of daily living circumstances and traumatic events for women's mental health during pregnancy or after giving birth.

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1.1 History of Conceptualisations

The first publication of observations of alterations in the psychological functioning of women who were pregnant or had recently given birth occurred more than 150 years ago and was reported in the French and English literature. Marcé's (1858) treatise reported careful observations of 70 women experiencing mental health problems during pregnancy or after giving birth and delineated a range of conditions of varying severity, including those that were mild to moderate as well as the much rarer states we would now regard as psychoses. Robert Gooch who published the first English paper on the subject in 1859 first used the term 'puerperal insanity' to describe states of mania and of melancholia following childbirth (Gooch and Ferguson 1859).

Psychoanalysts and midwives had made clinical observations of low mood among pregnant women and mothers of infants, documented as case studies in the peer-reviewed literature in the 1940s and 1950s (Deutsch 1945). The first systematic investigation was Pitt's (1968) landmark paper reporting interviews with 305 women who had given birth in two London hospitals. About 10% were 'depressed', with the most common symptoms being 'fatigue, irritability, tension and anxiety'. The risks for such symptoms were having '…negative feelings for the husband who was regarded as unhelpful and unsympathetic' and 'good compliant over-controlled personalities'. Participants were not referred to as women, but as 'depressives', and were described as having 'particular difficult[ies] in their biological role'. It was reported that there were 'no differences in respect to previous psychiatric disorder, endocrine abnormality or obvious psychosocial factors' between women with and without depression. The 24-item questionnaire to assess symptoms and risks included no questions about circumstances, interpersonal relationships or social context.

It took 10 years for broader explanatory models of the causes of psychological distress to be offered. In North America, psychiatrist George Engel published a major reflective essay in 1977 (Engel 1977). He wrote that psychiatry was yearning for the apparent simplicity of medicine: 'firmly based in the biological sciences with access to highly sophisticated technologies to elucidate mechanisms of disease and devise and test new treatments'. Medicine appeared 'neat and tidy' compared to the complexity with which psychiatry had to live. Engel speculated that if disease is conceptualised in somatic terms, there is no need to 'get lost in the psychosociological underbrush'. In both fields, Engel argued there was '… adherence to a model of disease that is no longer adequate for the scientific tasks and social responsibilities of either medicine or psychiatry' and questioned whether categories of human distress are rightly conceptualised as diseases. He coined the term biopsychosocial model, now used routinely in seeking to understand and communicate about states of health and disease. He suggested that it was needed for the 'disentanglement of the organic elements of disease from the psychosocial elements of human malfunction' which include 'problems of living, social adjustment reactions, character disorders, dependency syndromes and existential depression, which generally occur in people with intact brains' and therefore require different conceptual frameworks. He reminded readers that the ways in which clinicians conceptualise disease defines the parameters of responsibility and attitudes and behaviours towards patients.

At about the same time, sociologist George Brown and psychologist Tirril Harris conducted a large-scale survey of 458 women aged 18–65 who were either inpatients in a psychiatric hospital or being treated for depression by psychiatrists or general practitioners and a comparison group of women who were selected randomly via household surveying in the same disadvantaged area of London (Brown and Harris 1978a, b). In order to investigate whether there were 'social origins of depression', they asked detailed questions about housing, financial security and caregiving obligations as well as psychiatric symptoms. Brown and Harris provided the first meaningful evidence establishing a link between depression and a woman's daily life experiences, in particular of bereavement of a parent during childhood or adolescence, the burden of caregiving for young children and poverty. They established that risk was highest among women occupying the lowest overall socioeconomic position and that quality of relationship with the intimate partner was an important mediator.

These findings and interpretations precipitated an extraordinarily hostile response. In the subsequent months, two long papers attacking Brown and Harris were published in high-impact journals: one that their statistics were flawed (Shapiro 1979) and the other that their methods were biased and subjective (Tennant and Bebbington 1978), and therefore the conclusions were invalid. Brown and Harris (1978a, b) defended their research and their conclusions, but this debate revealed a fundamental tension between the status quo: that nonpsychotic psychiatric illnesses were conditions of biological origin that required pharmacotherapy and could only be investigated and understood within the discipline of psychiatry; and the alternative view which is that human suffering generally reflects adverse circumstances and is of wide relevance to many academic disciplines, professions and policy makers. Brown and Harris' conclusions (1978) were that depression is rarely a state with a distinct date of onset and resolution; low mood is dynamic; and cut-off criteria are imperfect indicators of disability or a woman's own appraisal of her state of mind, including that they invariably identify their social circumstances or experiences as central to their psychological state. Two years later, with colleagues, they followed up the women in their sample who had been depressed and compared them with the community cohort (Brown et al. 1994). They found that depression was invariably precipitated by a severe adverse life event and that chronicity was associated with having experienced childhood maltreatment. However, most importantly, they identified the major psychological importance to adult women's mental health in the quality of their relationship with an intimate partner. A relationship characterized by kindness, empathy, trust and a shared approach to problem-solving was protective, regardless of circumstance. In contrast, a relationship characterized by an inability to confide, or by 'negative verbal or behavioural responses' towards disclosures or expressions of heightened need, conveyed increased risk for depression.

Boyce et al. (1991) were among the first to seek to understand how these risks might interact to influence depression among women who had recently given birth. They used standardized measures to examine the ways in which aspects of personality, recalled care received in childhood and quality of relationship with a partner were related to postnatal depression. They concluded that experiencing neglect in childhood,

having a partner who was controlling and in excessive 'need for approval and timidity' were associated with increased likelihood of becoming depressed at 1, 3 or 6 months after birth. However, together these factors only explained about 20% of the variance in scores suggesting that other factors not ascertained in this study were also relevant.

Despite the value of this research, the explanatory models for women's psychological suffering remained limited to factors within her individual character or the quality of her relationships.

In the early 1990s, psychiatrist and medical anthropologist Professor Arthur Kleinman and colleagues at Harvard University initiated a series of investigations to delineate the major forms of adversity experienced by humans and the consequences for their lives and relationships. Their major focus was the impact of violence, both armed conflict and state-endorsed violence, towards populations including those affected by the Chinese Cultural Revolution and South Africa's apartheid laws and policies (Kleinman et al. 1997). They concluded that these forms of violence were pervasively destructive for cultures and communities but did not consider violence perpetrated within homes, schools or public institutions or the risks these experiences carried for individuals and their relationships.

Although the political is undoubtedly personal, an understanding of political processes is insufficient on its own. Understanding is also required of the impact of day-to-day circumstances like access to housing, education, income-generating work, transport, leisure and food security and freedom from discrimination and marginalisation.

Over the same 40-year interval from the 1960s, there was a dramatic expansion in public health science in particular biostatistics and epidemiology, which enabled differences in mortality and health status among populations to be quantified. There are huge disparities in life expectancy and morbidity attributable to both communicable and non-communicable diseases between and within countries. In 2005 the World Health Organization established the Commission on the Social Determinants of Health chaired by eminent public health physician Professor Sir Michael Marmot to review the evidence about the determinants of health inequalities and inform public policies and political action (Marmot 2005). The Commission reported in 2008 with the unambiguous conclusion that social circumstances are the predominant determinant of health inequalities (World Health Organization 2008). The Commission drew particular attention to the predicaments of women and girls and the impacts of their unequal access to human rights and life opportunities on health. It concluded that there were two major social determinants of health to be considered impacting women's physical and mental health life trajectories, that is, (1) structural inequalities and (2) circumstances of day-to-day life. In the following paragraphs, we will elaborate on these two aspects in more detail, in particular, as they relate to women's perinatal mental health.

1.2 Structural Inequalities and Perinatal Mental Health

Structural factors are the political, legal, economic and social systems and organisational structures that characterise nations and states. The relevance of these to perinatal mental health is illustrated in three examples detailed below.

1.2.1 Political, Legal and Economic Environments

Chen et al. (2005) undertook a multilevel analysis of self-reported symptoms of depression collected from more than 7700 women who had recently given birth and publicly available data from the 50 American states in which they lived. These included political participation (number of female elected officers, availability of a legislative body for the status of women and number of females registered to vote); reproductive rights (state-supported access to legal abortion, modern contraception and fertility treatment); economic autonomy (legislated right to equal employment, number of female owned businesses and proportion of women with incomes below the poverty line) and employment and earning (median female income and rates of female labour force participation). They found that rates of depression were significantly higher where political participation, economic autonomy and female earning were low and where there were fewer reproductive rights. They concluded that, since women in general are not biologically or psychologically different between states, social determinants outweigh both intrinsic biological and individual psychological factors in explaining gender differences in rates of depression.

1.2.2 Workplace Entitlements

Cooklin et al. (2007) investigated access to workplace entitlements and mental health among a cohort of women in Melbourne, Australia, who were pregnant and found that one in five had experienced workplace adversity or discrimination, including difficulties in negotiating or no access to maternity leave; not being informed of entitlements; derogatory comments about appearance and functioning; or withholding opportunities for promotion. These experiences made an independent contribution to lowered mood when other relevant risks were controlled.

1.2.3 Higher Burden Experienced by Women Living in the Most Disadvantaged Nations

Third, and most importantly, are the substantial and significant differences in population prevalence of perinatal common mental disorders among countries based on their economic status. There are major disparities in the availability of evidence between high-income and middle- and low-income nations. In high-income countries, there are now tens of thousands of high-quality studies to inform clinical practice and on which to base policies, but few low- and middle-income countries have any local data (Fisher et al. 2012). While in part attributable to competing health priorities, including malnutrition and communicable diseases, this is also because of stereotypes that women living in these settings experience traditional ritualized care after birth including mandated periods of rest; an honoured status; increased practical support and freedom from household and income-generating work; and social seclusion, gift giving and prescribed foods, which were presumed to protect mental health. However, in a systematic review of the evidence from World Bank-defined

low- and lower middle-income countries, Fisher et al. (2012) found that average prevalence of common mental disorders was significantly higher than in high- and upper middle-income countries (weighted mean prevalence during pregnancy 15.9%; 95% CI 15.0–16.8 and in the postpartum year 19.8%; 95% CI 19.2–20.6%). There was a clear social gradient. In studies which recruited participants from tertiary hospitals in major cities (which are usually accessible only to relatively advantaged people), estimated prevalence was similar to that in high-income nations (pregnancy 10.3%; 95% CI 10.1–10.4 and postpartum 13.6%; 95% CI 13.5–13.8). In a second group of studies in which recruitment had been from provincial and district health services (which are used by less well-resourced women living in rural and regional areas), prevalence was significantly higher (pregnancy 17.8%; 95% CI 17.4–18.3 and postpartum 20.4%; 95% CI 20.1–20.8). The third group, with significantly higher prevalence again than in either the first or the second group, was of studies in which participants were recruited in household surveys in the general community. These studies included the poorest women who might have no access to health services (pregnancy 19.7%; 95%CI 19.2–20.1 and postpartum 39.4%; 95%CI 38.6–40.3).

1.3 Circumstances of Daily Life for Women Caring for Newborns and Infants

There is also evidence of the impact of day-to-day living circumstances on perinatal mood, illustrated with three examples.

1.3.1 Unpaid Work of Caregiving

The work of mothering an infant and managing a household in which an infant lives are not dignified with the language of work. Gender stereotypes categorize them as ‘not working’, with the consequence that this work, which is of fundamental importance to societies, is not valued or named, and the potential adverse consequences for health are unrecognized. Worldwide, women undertake most of this work. Smith and Ellwood (2006) attempted to quantify the unpaid ‘caring workload’ in the ANU Time Use Survey of New Mothers, asking a group of mothers of infants in the general community to document their activities 3, 6 and 9 months postpartum using an electronic recording device. They explain that participants were only able to select a single category to classify activity at a particular time and so were unable to document multitasking, and therefore that all findings are underestimates. Infant care activities alone are very frequent and cannot be planned for or anticipated. At infant age 3 months, there were on average, 49 breast or bottle feeds a week, each lasting about 20 min, but with a range up to 75 min. In total, there were on average another 70 occasions a week when a mother was carrying, holding or soothing her infant,

each for around 18 min duration. The authors estimated that active and passive infant care occupies about 23 hours of each day. They also tell us that it is not accurate to define the times when an infant is asleep as leisure not only because there are always other household tasks to complete, but because responsibility for the infant means there is no true freedom either to rest or to pursue leisure activities at this time. Amount of leisure time was generally much less than had been anticipated. Fisher et al. (2004) investigated 161 women who had been admitted to Australian residential early parenting services with their unsettled babies (aged on average 6 months) who were unsettled, with prolonged and inconsolable crying, resistance to soothing, frequent nighttime waking and/or waking after short sleeps during the day. They found that women had less than half an hour per day of leisure, whereas their partners were having significantly more, at least an hour per day.

1.3.1.1 Occupational Satisfaction and Health

Unlike employment, in which completed tasks are noted in some way, the tasks of unpaid caregiving have to be done repeatedly and are often only noted or visible when they are not done, rather than when they are. Jobsite UK in a major national survey in 2006 (National Jobsite UK Survey 2006) ranked sources of occupational satisfaction (see Table 1.1). In general, the least satisfied were those whose work was onerous, repetitive, monotonous, poorly waged and lacked opportunities for agency. While this paradigm was not applied to the work of mothering, it provides a useful conceptual framework for comprehending the work of caring for an infant.

One of the hallmarks of a recognised workplace is occupational health and safety provisions, in particular regarding occupational fatigue (Taylor and Johnson 2010; Rajaratnam et al. 2013). Occupational fatigue is associated with prolonged and/or irregular working hours, in particular with early starting times and overnight work. Risk is increased by any work taking place between 1 and 6 a.m. because of the disruptions to the circadian rhythm. It is especially problematic in highly mentally and emotionally demanding work, in which there are inadequate rest breaks. Occupational fatigue affects both health and performance and leads to poor judgement, slower reactions to events, decreased skills, reduced concentration and vigilance and impaired memory. Fatigue makes a person irritable, agitated, depressed, have reduced empathy and sociability and to lose insight and be unable to recognise these changes in themselves. As a result, fatigued workers are known to place themselves and others at risk, with effects similar to those with an elevated blood alcohol level (Rajaratnam et al. 2013).

There are no occupational health and safety provisions for women working as mothers of young children. Smith and Ellwood (2006) conducted a study where sleep hours in mothers of infants aged 3–9 months were obtained on an average of 18 different episodes in the tracking week and found that each stretch of sleep averaged just over 3 h. Mothers were kept awake on average six nights a week, for around three quarters of an hour on each occasion. Fisher et al. (2004) found among women

Table 1.1 Common predictors of occupational satisfaction and their relation to the work of infant care

Ranked sources of satisfaction	Work of infant
Salary	Generally unremunerated
Social environment especially interactions with colleagues	Often isolated in a domestic setting
Creative and intellectual challenge	Challenging but often emotionally rather than intellectually
Feeling valued and respected	Dependent on the infant:
	• If the baby is responsive and responds to maternal care by quieting to soothing, smiling, interacting, suckling easily and developing on an at least average trajectory, then caregivers feel valued
	• If the baby is difficult to sooth, cries for long periods and wakes frequently after short sleeps, caregivers can feel devalued
External recognition of contribution, including constructive feedback	Women have increased dependence on their partners for recognition of their endeavours:
	• Affirmation, encouragement and equitable sharing of the unpaid work are protective
	• One of the most prominent predictors of depression after childbirth is to feel criticised by partner for infant care and household management
Completion of tasks	Rarely possible and can lead to a sense of subjective incompetence
Experiences of success and mastery	Can be elusive when the aspiration is to care for a child so that they become a healthy adult with full capacities to participate

National Jobsite UK Survey (2006)

admitted to residential early parenting services that 80% had fewer than 6 h of sleep on average in 24 h, more than 90% had clinically significant occupational fatigue and more than half had scores on the Edinburgh Postnatal Depression Scale indicating clinically significant depressive symptoms, which improved when their sleep debt was reduced.

1.3.1.2 Interpersonal Violence

Although there is variation in prevalence between countries and cultures, violence against women is a universal phenomenon. It encompasses a broad range of forms of abuse, and the World Health Organization considers violence to be the principal gender-related cause of general health and common mental health problems among women. For most of the twentieth century, violence against women received scant research attention or recognition by clinical services. However, there has been a marked increase in recognition of the prevalence of violence, the disproportionate risks that women face of exposure to violence and its health consequences. The most inclusive definition is from the Declaration and Platform for Action of the Fourth World Conference on Women held in Beijing in 1995. It encompasses physical, sexual and psychological violence occurring in the family, the general community and perpetrated or condoned by the State. Establishing the prevalence of violence against women is difficult and influenced by the methods of ascertainment,

Table 1.2 Risks of experiencing antenatal or postnatal depression associated with having experienced intimate partner violence

Antenatal depression:
Lifetime experience: OR 3.04 (95%CI 2.31–4.01)
Past year experience: OR 2.82 (1.51–5.28)
Pregnancy experience: OR 5 (4.04–6.17)
Postnatal depression:
Lifetime experience: OR 2.94 (1.79–4.82)
Past year experience: OR 2.82 (1.72–4.64)
Pregnancy experience: OR 4.36 (2.93–6.48)

Howard et al. (2013)

which have included self-report questionnaires, telephone interviews and anonymous postal surveys. However, it is agreed that accurate ascertainment needs to describe behaviours across physical, sexual and emotional domains and not just to ask women whether they have experienced abuse.

The World Health Organization Multi-Country Study on Domestic Violence and Women's Health Household Survey (2005) sought to ascertain prevalence of exposure to all forms of violence in systematically recruited community cohorts in ten countries. There were wide inter-country variations in lifetime prevalence perpetrated by husbands, ex-husbands, boyfriends and ex-boyfriends, from 13% in Japan to 61% in Peru. Most countries had prevalence in the range of 23–49%, and in no country was the prevalence zero. Of those exposed, up to 49% reported severe abuse. Acts of violence co-occurred and were repeated. Sexual violence was less common than physical violence, but 94% of women experiencing physical violence also experience verbal insults and humiliations and 36% also experienced forced sex. Violence perpetrated by an intimate partner is a clear and consistent predictor of depression, anxiety, trauma symptoms, suicidal ideas and substance abuse among women regardless of circumstance. Much research has, however, only considered physical or sexual violence and not psychological violence. There is a gradient of seriousness of exposure and severity of mental health problems. Psychological violence including controlling behaviours may be associated with worse mental health problems than physical or sexual violence. The mechanisms of psychological harm reflect social theories of depression: the inability to escape (entrapment), breach of trust (subordination) and humiliation.

It is of concern that intimate partner violence in relation to perinatal mental health has only been investigated quite recently, with the first systematic review of the evidence published in 2013 (Howard et al. 2013) (see Table 1.2). In total, 67 papers met inclusion criteria and provided data for the meta-analyses. Pooled estimates from prospective cohort studies indicated a threefold higher likelihood of experiencing clinically significant postpartum depressive symptoms if violence perpetrated by an intimate partner had been experienced during pregnancy. There were consistent findings in cross-sectional studies of increased likelihood of experiencing perinatal depressive, anxiety and PTSD symptoms if violence perpetrated by an intimate partner had ever been experienced or had been experienced prior to or during pregnancy (see summary of prevalence estimates in Table 1.2).

In the following section, we will elaborate further on the association between trauma exposure and perinatal mental health, and provide some definitions of what

constitutes a traumatic event and how the diagnosis of PTSD has developed over the decades. We will use 'traumatic childbirth' as an example for a traumatic event potentially leading to perinatal PTSD.

1.4 Trauma, PTSD and Perinatal Mental Health

1.4.1 Trauma and PTSD: Definitions

Post-traumatic stress disorder (PTSD) as a distinct psychiatric syndrome originated in the work of psychiatrists and therapists engaged in supporting veterans of war. The term 'shell-shock' was coined by Myers, a British military psychiatrist, in 1915 to describe the emotional disturbance of combat personnel from World War I. He also noted the close similarity between persistent distress, or 'war neurosis', and 'hysteria' which was at that time a well-accepted medical phenomenon.

Following World War II, a major revision of the descriptions of mental disorders occurred. Medical practitioners affiliated with the armed forces developed new diagnostic classifications, and mental disorders were included in the World Health Organization's International Statistical Classification of Diseases, Injuries and Causes of Death (ICD-6) (World Health Organization 1992) for the first time. Among these disorders, however, post-traumatic stress syndromes were still understood to be acute situational maladjustments (Brett 1996; Jones and Wessely 2007).

In 1980 the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM III) included post-traumatic stress disorder as a diagnostic category for the first time (American Psychiatric Association 1980). Modern research into trauma was precipitated by the needs of the large population of people who experienced psychological damage while in military service during the Vietnam War. However, since its first description in psychiatric textbooks the definition of PTSD has been revised repeatedly, making it one of the more controversial diagnoses in modern psychiatry (Rosen et al. 2008). Debates about the definition of traumatic events have been criticized either for trivialising the experience of those exposed to extreme and shocking events (McHugh and Treisman 2007) or for pathologising normal reactions to overwhelming experiences (Rosen et al. 2008). Debate continues, but there seems to be broad agreement that the unremitting distress that some people experience following traumatic exposure can be associated with high levels of functional disability and considerable economic and social costs.

The DSM III described a traumatic stressor as an 'extreme event that was outside the range of usual human experience'. This early conceptualisation was based on the belief that traumatic events were rare; however increasing use of the new diagnostic category revealed that trauma responses were not uncommon and arose in response to events that were not unusual. Key to the traumatic nature of trigger events was that they overwhelmed the ordinary adaptive and coping mechanisms used by people in everyday life (Herman 1992). The subsequent fully revised edition of the diagnostic manual, the DSM IV (American Psychiatric Association 1994), and its successor, DSM IV-TR (American Psychiatric Association 2000),

reflected this increased awareness and provided a different system for categorising an event as traumatic. It focused on the characteristics of the event and on the individual's reaction to the event. However, subsequent research demonstrated that the subjective appraisal of the event as horrifying or leading to helplessness reduced the specificity of the diagnosis. Fewer than one third of events identified as traumatic in subjective appraisals met the DSM IV definition of a traumatic event. This led to overdiagnosis (Boals and Hathaway 2010), and in DSM 5 (American Psychiatric Association 2013), this criterion has been removed (Friedman et al. 2011). The DSM IV, DSM IV-TR and DSM 5 provide extensive lists of the types of events that may lead to the development of post-traumatic stress disorder. In its definition of a traumatic stressor, the DSM IV-TR is careful to state that its lists include possible traumatic events, but that trauma is not limited to these experiences and that diverse experiences can precipitate PTSD. In DSM 5 medical events that qualify as potentially traumatic are sudden and catastrophic events like becoming conscious during surgery. Childbirth is not listed as a potential traumatic event in either DSM IV-TR or DSM 5.

1.4.2 Childbirth as a Traumatic Event

Childbirth is within normal human experience, but individual birth experiences are highly variable. Women can perceive risks to life or of serious injury when giving birth, or there can be actual injury to the woman or her baby. These are often accompanied by intense fear, helplessness and horror. As such, it is postulated that the experience of traumatic childbirth is potentially to meet recent DSM IV and current DSM 5 diagnostic criteria for a stressor that could lead to post-traumatic stress disorder.

Often credited with being the first to publish their observations of a syndrome of postnatal post-traumatic stress disorder (PTSD), Bydlowski and Raoul-Duval (1978) described 'la nervose traumatique post-obstetricale' (post-obstetric traumatic neurosis) among women who had experienced long and difficult labours, instrumentally assisted births or the birth of a dead or injured infant. Women experiencing this syndrome were identified, during the last trimester of a subsequent pregnancy, with symptoms typical of post-traumatic stress. Following this identification, greater research attention was focused on the potential for women to develop stress reactions, such as PTSD, following childbirth.

There were early case descriptions of trauma reactions among women who had experienced caesarean surgery with inadequate anaesthesia (Ballard et al. 1995; Fones 1996) or prolonged labours with severe pain or insufficient support (Ballard et al. 1995). Descriptions also emerged of births which were considered to be normal by maternity staff but where the woman's subjective experience was characterized by intense feelings of lack of agency (Allen 1998). Moleman et al. (1992) reported a small case series of women who experienced recurrent intrusive thoughts and images, numbing, dissociation and other trauma-related symptoms following complicated births and prior experiences of spontaneous abortion or infertility.

Subsequent consequences included nightmares, intrusive memories, difficulty bonding with the baby, fear of sexual intimacy and avoidance of future childbearing (Ballard et al. 1995; Fones 1996; Goldbeck-Wood 1996). Requests for elective caesarean section during a subsequent pregnancy were considered to be a form of avoidance following traumatising birth experiences (Ryding 1991, 1993). Subsequent research examining childbirth stress has followed the DSM IV diagnostic revisions in 1994 and has conceptualised such reactions as post-traumatic stress. Over the past 15 years, a growing body of research has sought to establish the nature of childbirth-related PTSD and attempted to establish its prevalence. This literature has found that symptoms of hyperarousal, re-experiencing and avoidance of reminders of the birth are prevalent among new mothers and that up to one third of women experience at least some symptoms of PTSD following childbirth (Olde et al. 2006).

1.4.3 Prevalence of PTSD in Pregnancy and Postpartum

Post-traumatic stress disorder (PTSD) is a diagnosable clinical condition which requires all eight DSM 5 diagnostic criteria (American Psychiatric Association 2013) to be met. In order to diagnose PTSD following any event, it must be established that the event itself meets criteria for being traumatic (Criterion A). Applying this to childbirth, a woman's birth experience must have involved an actual or threatened injury to herself or her baby. There then have to be symptoms of intrusive or distressing memories (Criterion B), persistent avoidance of memories or external reminders of the events (Criterion C), negative alterations in cognitions or mood beginning or worsening after the event (Criterion D), marked changes in arousal or emotional reactivity after the event (Criterion E) that have persisted for more than 1 month (Criterion F) and they must have led to disrupted functioning in important domains of the woman's everyday life (Criterion G), and finally, not be attributable to substance use or medication (Criterion H). In order to determine prevalence accurately, investigations need to have used standardized psychometric instruments that assess all criteria, but few studies have done so. Most were published prior to the release of DSM 5 and so used criteria from earlier editions.

Few studies have used diagnostic interviews to assess Criterion A (Verreault et al. 2012). Most used self-report questionnaires, in particular the Traumatic Event Scale (Wijma et al. 1997; Soderquist et al. 2002), and asserted that Criterion A had been met if a woman endorsed items stating that 'the childbirth was a trying experience' and 'during the childbirth I felt anxious/helpless/terrified'. There is potential therefore for a woman who experienced anxiety and described her birth as 'trying' to be identified as having met Criterion A, while a woman who perceived her baby's life to be at risk may not be detected. Symptoms must have been present for at least 1 month, although many studies assume this to be the case when assessments are carried out at more than 4 weeks postpartum; the duration of symptoms was rarely asked about directly. Few studies examined functional impact of the symptoms, and without this a diagnosis cannot be made. Further, few studies screened for PTSD

symptoms during pregnancy and therefore cannot claim with certainty that postnatal symptoms are new and a consequence of birth, rather than being a continuation of symptoms that predated birth.

Most studies have measured the number of PTSD symptoms reported postpartum or have obtained a measure of severity of stress reaction. While not providing a clinical diagnosis, this approach provides useful information about the nature and severity of postnatal trauma reactions. This has been described variously as a PTSD profile (Wijma et al. 1997; Olde et al. 2006), partial PTSD (Alcorn et al. 2010) or posttraumatic stress (Lyons 1998; Soderquist et al. 2002). This has led to the conceptualisation of symptoms of traumatic stress as falling along a continuum, with the rare experience of a severe stress reaction at one end, and one or a few symptoms, possibly reflecting a more normative adjustment reaction to the experience of childbirth, at the other (Olde et al. 2006). Estimates using these indicators have concluded that the prevalence of PTSD following childbirth is as high as 6.9% (Creedy et al. 2000; Ayers and Pickering 2001; Soet et al. 2003; Ayers et al. 2008; Alcorn et al. 2010).

The proportion of women whose stress reaction to a subjectively traumatic birthing experience meet diagnostic criteria for PTSD is much lower, at most 2.4% in the early postnatal weeks. When PTSD rates are examined over the first postnatal year, a greater proportion of women are affected (Alcorn et al. 2010), as it appears that some women do not develop symptoms until weeks or months afterwards.

An important further consideration is whether women may have experienced prior lifetime traumatic events and whether PTSD assessed postnatally was actually a continuation of PTSD that had developed as a result of earlier events, prior to giving birth. Given that over half of the population of childbearing age have experienced prior traumatic events (Creamer et al. 2001) and that some pregnant women may meet criteria for PTSD antenatally (Seng et al. 2009), the prevalence of new cases of PTSD that have resulted from childbirth cannot be ascertained without adjusting for these antenatal variables. To date only one study has done this; Alcorn et al. (2010) found a prevalence of 2.4% of new cases of PTSD due to birth, having already controlled for antenatal full-syndrome and partial PTSD. Verreault et al. (2012) also assessed PTSD antenatally but did not report whether any women with postnatal PTSD were previously symptomatic. However, they did find that antenatal PTSD did not contribute to an increased likelihood of having postnatal PTSD in multivariate analyses.

In the general PTSD literature, it has been demonstrated that individuals exposed to previous trauma but who are asymptomatic are more likely to develop PTSD following exposure to a subsequent trauma compared to others not previously exposed (Breslau et al. 1999). Thus risk of developing PTSD accrues with subsequent exposure. Further, some types of previous traumatic exposure may heighten this cumulative risk. Several investigators in the field of childhood maltreatment have suggested that early adversity and trauma, such as intrafamilial abuse and neglect, may place individuals at greater risk of PTSD from subsequent traumatic exposure (Breslau 2009; Seng et al. 2009; Muzik et al. 2016). Investigations of exposure-related risk for developing PTSD have shown that trauma involving assaultive violence increases the risk of symptoms developing from subsequent traumatic events (Breslau 2009).

However, this has not been thoroughly examined in the context of pregnancy and childbirth. Seng et al. (2009) found that early childhood abuse was the strongest risk factor for development of PTSD during pregnancy, but the study did not assess PTSD following childbirth. Muzik et al. (2016) showed that course of PTSD symptoms across pregnancy and early postpartum in women with preexisting PTSD lifetime diagnosis depends on ongoing trauma exposure during pregnancy, as well as the severity of childhood abuse exposure. Alcorn et al. (2010) controlled for antenatal PTSD symptoms when assessing postnatal PTSD but did not examine whether prior trauma exposure itself, in the absence of antenatal symptoms, heightened the risk of postnatal PTSD. Verreault et al. (2012) found that a history of sexual trauma added independently to the risk of developing postnatal PTSD, whereas antenatal PTSD did not; no other types of traumatic event were assessed. Finally, Oh et al. (2016) found that women with childhood maltreatment histories showed postpartum trajectories of comorbid depression and PTSD symptoms from 4 to 18 months postpartum and that symptom levels were positively correlated with childhood maltreatment severity. Whether particular types of prior traumatic exposure may increase the vulnerability among some women to experiencing birth as traumatic and developing PTSD symptoms as a result is not yet known, but it is plausible that women who have had traumatic life experiences, but do not have significant PTSD symptoms in pregnancy, may nevertheless be at increased vulnerability for postnatal PTSD.

In summary, some uncertainty remains about the prevalence and risks for PTSD following pregnancy and childbirth, and further research informed by the current methodological limitations is required to establish for firm prevalence rates. Nevertheless, women can experience them as traumatising and have symptoms which, while not meeting diagnostic criteria, are nevertheless disabling and can interfere with the growth of emotional attachment, the establishment of a confident maternal identity and future reproductive aspirations.

Conclusion

This accrued evidence indicates that there have been efforts over decades to understand the psychological aspects of pregnancy, childbirth and the early postpartum period and their implications for health care. These have been informed by diverse disciplinary perspectives and emerging recognition of the social determinants of health. In broad terms there has been an advance from conceptualising women with mental health problems as being intrinsically flawed to seeking to understand the immediate and lasting psychological impact of their experiences and the social, political, economic and cultural contexts in which they live. This is illustrated in the specific development of ideas about the nature of experiences of low mood, including among women who are pregnant or have recently given birth. From Pitt's lack of consideration of life circumstances and description of women as 'depressives', through Brown and Harris's introduction of ideas about the 'social origins of depression' and Kleinman's ideas about 'social suffering' to the more recent understanding that women's mental health is intimately linked to context and circumstances, this has been a 'long journey' towards a more sophisticated and comprehensive understanding of women's

emotional wellbeing. We now know that gender-based role restrictions on equality of access to education and income-generating work, and the circumstances of daily life, including violent victimisation and the disproportionate burden of unpaid caregiving are major contributors to mental health problems among women. The application of ideas developed in one situation to understanding in another is illustrated in the theoretical argument and emerging evidence that the contexts of childbirth and motherhood might be (re)traumatising, with the potential to alter subsequent psychological functioning in ways that might harm caregiving capabilities and alter future reproductive aspirations.

These historical perspectives are crucial to appreciating that there are no absolute truths in this field, rather that researchers' and clinicians' views about women and their lives may influence their conceptual frameworks, choice of language, interpretation of observations and proposals for implications of findings. Gender stereotypes about women's roles and rights and about women's intrinsic vulnerabilities are rarely declared but influence whether what is observed is regarded as an understandable response to an adverse circumstance or is regarded as psychopathological.

Therefore, overall, a comprehensive gender-informed conceptual framework of the mental health of women who are pregnant or have recently given birth requires consideration of their early experiences of care and relationships with their parents; lifetime experiences of interpersonal violence including childhood maltreatment and abuse perpetrated by an intimate partner; structural factors which by definition are beyond individual control; and everyday social circumstances as well as of the individual characteristics that have been the traditional focus of clinical formulations. Considerations of the potential for childbirth to be traumatising have to take into account prior traumatic life experiences when involved with the health-care system and clinical services, as well as current experiences of the care received and how these might interact with the experience of the birth, and whether they require explicit consideration in clinical care (Rowe et al. 2015). These are fruitful areas for future research and research translation, with the potential to inform the training of health-care providers and strategies to avert and ameliorate childbirth-specific psychological harms.

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Part II

Trauma and Consequences for Mother and Child

Childhood Maltreatment and Motherhood: Implications for Maternal Well-Being and Mothering

2

Diana Morelen, Katherine Lisa Rosenblum, and Maria Muzik

Abstract

This chapter explores how maternal history of maltreatment during childhood (childhood maltreatment; CM) affects a mother's well-being, her adjustment to motherhood, and her mothering, both in regards to her beliefs or attitudes, and her parenting behaviors. Throughout the chapter, we review the currently available literature on CM and motherhood and pay particular attention to the methodology of these diverse studies including those with null results, which may, in part, explain the great variability of results across the literature. We aim to provide a comprehensive review to allow the reader to understand which findings are subjective (through the eyes of the mother) vs. objective (through the eyes of an outside observer). We explore the role of resilience in the aftermath of CM and end the chapter with a discussion of implications for screening and targeted interventions.

In the present chapter we explore how maternal history of maltreatment during childhood (childhood maltreatment; CM) affects a mother's well-being, her adjustment to motherhood, and her mothering, both in regards to her beliefs or attitudes, and her parenting behaviors. Within the broad context of adjusting to motherhood, we want to zoom in on the impact of CM on her own well-being (e.g., how much she experiences parenting stress or suffers psychopathology), on factors that may influence her feeling connected and bonded with her baby (e.g.,

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parenting attitudes, beliefs, and views toward the baby), and on her parenting behaviors, both as she perceives herself in parenting and observed behaviors. Though we will present in this chapter some research documenting direct correlates from CM to parenting, we want to note early on that the true impact of CM on parenting is complicated and multifaceted. More often than not, the link from CM to parenting is explained by a multitude of factors rather than a simple direct effect. As such, we will describe some of the mechanisms through which CM may impact parenting. Throughout the chapter, we review the currently available literature on CM and motherhood and pay particular attention to the methodology of these diverse studies including those with null results, which may, in part, explain the great variability of results across the literature. We aim to provide a comprehensive review to allow the reader to understand which findings are subjective (through the eyes of the mother) vs. objective (through the eyes of an outside observer). We also purposefully present null findings to illustrate that CM does not doom one to experience negative outcomes. In fact, we dedicate an entire section of this chapter to resilience, with the goal to help illustrate that women with CM histories are often very resilient and that positive growth and change can come out of past trauma. We end the chapter with a discussion of implications for screening and targeted interventions.

2.1 Childhood Maltreatment

The World Health Organization defines childhood maltreatment (CM) as, "all forms of physical and emotional ill-treatment, sexual abuse, neglect, and exploitation that results in actual or potential harm to the child's health, development or dignity." In the USA alone, over three million children experience some form of substantiated maltreatment in a given year (Administration on Children, Youth and Families, 2014), and this is likely an underestimate. Approximately 1 in 3 adults experienced some form of maltreatment as a child (Edwards et al. 2003). Among pregnant or postpartum women, prevalence rates of CM range from 11 to 35% in community samples (Gilbert et al. 2015) and 47 to 80% among higher-risk mothers (e.g., teen mothers, low-income mothers; Bert et al. 2009; Smith et al. 2014). Compared to men, women are at slightly greater risk for experiencing CM, experience more frequent CM, experience more frequent re-victimization, and are more likely to develop post-traumatic stress disorder (PTSD; Gilbert et al. 2015; Koenen and Widom 2009; National Center for Injury Prevention and Control 2014). Among women, demographic risk (e.g., low income, ethnic minority) is associated with higher levels of maltreatment exposure (Gilbert et al. 2015; Smith et al. 2014). The perinatal period is a time of heightened psychological vulnerability for all women and even more so for women with CM histories (Muzik et al. 2016; Onoye et al. 2013). As such, it is important to understand the experience of motherhood for women with CM histories in order to educate providers and the public, to develop and disseminate targeted interventions, and to promote resilience in the face of adversity.

2.2 Childhood Maltreatment and Maternal Psychological Well-Being

Childhood Maltreatment History and Risk for Depression CM has a long documented history of increasing broadband risk for later mental health problems (Anda et al. 2006; Gilbert et al. 2015), including, but not limited to, depression (Caldwell et al. 2011; Muzik et al. 2013; Nanni et al. 2012), suicidality (Muzik et al., 2016a; Oh et al. 2016), and PTSD (Koenen and Widom 2009; Muzik et al. 2016b; Schechter et al. 2005). Depressive symptoms in the peripartum period can have detrimental effects on both mother and baby. For example, during pregnancy, mothers with depression (compared to those without) tend to have less social support, have greater difficulty taking care of themselves, have poorer nutrition, use substances, have more difficulty following doctor's orders, and have relationship difficulties with their partners (Muzik and Borovska 2010). Related, pregnancies of women with depression have a higher risk for slowed fetal growth, preterm deliveries, and low infant birth weight (Muzik and Borovska 2010). During the postpartum period, maternal depression has been associated with a host of parenting difficulties including lower sensitivity, higher disengagement, higher negative affect, lower warmth, and lower empathic responding (Lovejoy et al. 2000). Children born to mothers with depression show greater physiological, behavioral, and psychological difficulties including elevated cortisol (hormone relevant for stress regulation), higher irritability, lower attentiveness, and greater risk for developmental delays (Deave et al. 2008; Field et al. 2006). It is not surprising that depressive symptoms are a major mechanism through which CM infers risk for later parenting difficulties (Martinez-Torteya et al. 2014).

Childhood Maltreatment History and Risk for PTSD While depression has been a target of many perinatal investigations, PTSD in CM survivors in the peripartum had received less attention over past decades. The Maternal Anxiety in the Childbearing Years (MACY; NIMH MH080147; PI: Muzik) study was developed to address this very gap. MACY longitudinally followed a cohort of mothers who had encountered CM when growing up to better understand these women's postpartum adaptation during the transitional time into motherhood. One key aspect within this study was to examine the impact of CM history on PTSD symptoms across pregnancy and the postpartum period (Muzik et al. 2016a). Women provided data on their social, psychological, and parenting adaptation and discussed factors that helped them cope during this transition. Women with CM histories, with demographic risk (e.g., low income, minority, maternal age under 21, un-partnered), and with previous prepregnancy PTSD symptoms were at greatest risk for symptom relapse in pregnancy and postpartum (Muzik et al. 2016a; Oh et al. 2016). Specifically, women who encountered the highest levels of stress/trauma in pregnancy (rather than CM history alone) were at highest risk for PTSD symptom exacerbation. Finally, women whose PTSD symptoms increased across the pregnancy also reported higher depressive symptoms and the greatest self-reported bonding impairment with their 6-week old compared to women whose PTSD symptoms decreased or remained

stable across pregnancy (Muzik et al. 2013). Whereas a solid body of literature exists for the impact of perinatal maternal depression on parenting, relatively few studies have examined the potential impact of postpartum PTSD on parenting. Thus, more work on CM, perinatal PTSD, and its effects on motherhood adjustment is needed. In the sections below, we do our best to clarify when we are discussing the impact of CM history vs. current PTSD symptoms on parenting capacity.

Childhood Maltreatment History and Stress Beyond self-reported psychological symptoms, CM also places women at risk for difficulties with the physiological regulation of stress. For example, compared to women without CM, women with CM histories have higher cortisol levels, show altered regulation of cortisol, show differential brain activity in response to parenting-relevant tasks, and show altered heart rate variability (indicator of regulation) during parenting tasks (Brand et al. 2010; Moser et al. 2015; Schechter et al. 2012, 2014). Given the established link between CM and disrupted regulation of stress and other negative emotions, it is not surprising that some studies have found that mothers with CM histories report higher levels of parenting stress compared to mothers who were not maltreated as children (Pereira et al. 2012). However, results are mixed as other studies did not find a direct correlate between CM history and parenting stress (Bailey et al. 2012; Lang et al. 2010). In support of this finding of heightened maternal stress is the fact that women with CM histories (compared to those without) also report greater risk for birth complications, tend to be young/have a young co-parent (under 21), feel isolated, have financial problems, live with someone who has violent tendencies, and often present with low levels of social support (Dixon et al. 2005; Jaffee et al. 2013). Though this list of risk factors may seem discouraging, it offers helpful information regarding who is at risk, how to detect risk, and how to intervene to help promote positive outcomes among women with maltreatment histories. Targeted interventions for mothers with CM experience, e.g., Mom Power (Muzik et al. 2015), are described in more detail in later chapters (see Chapter 11).

2.3 Childhood Maltreatment History and Maternal Attitudes and Beliefs About Parenting

Childhood maltreatment, by its very nature, involves an adult, often a caregiver, hurting a child emotionally, physically, or both. Abuse and neglect often convey to the child that she is bad, flawed, or unlovable. Childhood maltreatment heightens one's risk for developing shameful feelings that persist across time (Feiring and Taska 2005). Shame-driven beliefs (e.g., "I am a bad person because I was abused") may also contribute to internal (e.g., "there is something about me that caused the abuse"), global (e.g., "I will always end up in bad situations"), and stable ("I am a bad person and nothing will change that") negative self-attributions that impact psychological well-being and impede healing after experiencing CM (Berntsen and Rubin 2007; Simon et al. 2016). In addition to negative beliefs about oneself, CM often impacts a mother's view of what it means to be a caregiver given that the

abuse/neglect may have happened at the hand of a caregiver. A recent report (2014) by the Administration on Children, Youth, and Families indicated that 78% of reported CM perpetrators were parents. As such, women who have experienced CM are at greater risk for developing unhelpful attitudes and beliefs about parenting than women who were not maltreated as children (Wright et al. 2012). Despite this risk, a history of CM does not doom a woman to developing maladaptive parenting attitudes and beliefs. Below, we briefly review the literature documenting both significant and nonsignificant results regarding the link between CM and maternal attitudes and beliefs about parenting.

Childhood Maltreatment History, Attachment, and Parenting Beliefs An essential domain of parenting is the ability to make sense of one's past experiences of being parented and to reconcile those experiences with current parenting beliefs and behaviors. One way of assessing the impact of past trauma on current mental representations of oneself and one's relationships is through the Adult Attachment Interview (AAI; George et al. 1996). During this interview, a mother talks about the quality of her childhood experiences, her past responses to challenging relational times (e.g., rejection, separation, loss, trauma), and how she considers her childhood experiences to impact her current functioning as a mother. Historically, attachment classifications were noted as secure (marked by awareness of how past relationships link with current mental states) or one of two insecure styles—dismissing/detached (marked by forgetting or denial of past experiences) and entangled/preoccupied (marked by confused and unresolved narratives of how the past impacts the present) (Fonagy et al. 1993). In general, mothers with insecure attachment styles from their childhood were more likely to have infants with insecure attachments at 12 and 18 months (Fonagy et al. 1993). More recently, two classifications on the AAI have been identified as common groupings for mothers with trauma histories: unresolved (lack of full/conscious integration of how past trauma has impacted one in the past and present) and hostile-helpless (pervasive identification with hostile and/or helpless caregivers from the past; globally negative evaluation of caregiver and self that remain unintegrated; Lyons-Ruth et al. 2003). In one study with low-income mothers, maltreatment severity was positively associated with hostile-helpless classifications (Lyons-Ruth et al. 2003). Further, mothers with more severe trauma histories reported greater identification with a hostile caregiver, global devaluation of their caregiver, and a greater sense of themselves as bad. Of note, these relations were no longer significant when the impact of parental loss (losing one's parent before age 16) was accounted for. Another study with adolescent mothers found that abuse severity was associated with increased risk for unresolved trauma (i.e., an attachment category marked by disorganized/disintegrated processing of past loss or trauma when discussing how past relational experiences impact current experience of relationships including parenting) across pregnancy and the early postpartum period (Madigan et al. 2016). Of note, a different study with adolescent mothers found that a maternal unresolved attachment style resulted in reduced benefits of an attachment-based intervention compared to mothers who were not classified as unresolved (Moran et al. 2005). A related concept to maternal attachment-oriented beliefs is the

notion of "secure-base scripts," or cognitive underpinnings of one's internal working model of attachment. One study with mothers of young children (16 months) did *not* find that CM history impacted maternal secure-base scripts (Huth-Bocks et al. 2014). In summary, findings to date suggest that for some mothers CM history may heighten one's vulnerability toward unhelpful mental representations of one's past caregiving experiences and current role as a mother but also shows that this risk is dynamic and not deterministic and that for other mothers this link is less linear (or not true). In other words, the impact of CM on maternal beliefs may depend on a multitude of risk and protective factors, and more research on the protective factors is needed to understand even better pathways for resilienc oriented beliefs is the notion of e.

Childhood Maltreatment History and Maternal Reflective Functioning Beyond considering how a mother views her past caregiving experiences and how she views her current role as a mother, it is also important to consider how she perceives her child and understands her child's thoughts, feelings, and experiences. In the context of motherhood, reflective functioning refers to a mother's capacity to reflect upon her child's and her own mental states (thoughts, emotions, intentions) and connect those reflections to her child's behavior as well as her own parenting behavior (Rosenblum et al. 2008). In community samples, maternal reflective functioning has been associated with more adaptive observed parenting behavior (Rosenblum et al. 2008); however, in traumatized samples the findings are mixed. For example, Schechter and colleagues studied a group of mothers with a history of interpersonal trauma and high demographic risk and assessed the role of reflective functioning on parenting outcomes. His group found that among traumatized mothers, more severe PTSD symptoms were associated with a greater likelihood of having negative representations of the parent-child relationship (Schechter et al. 2005), but trauma symptoms were not associated with reflective functioning. Further, higher maternal reflective functioning, regardless of PTSD severity, was associated with a greater likelihood of appreciating the importance of the parent-child relationship for child development. However, later work by this group did not find a significant relation between trauma symptoms, reflective functioning, and observed maternal behavior (Schechter et al. 2008). Schechter's group concluded that there is more work to be done to understand the link between reflective functioning and parenting behavior in high-risk samples. Similarly, results from the MACY research group did not find a direct link between CM history or current PTSD symptoms and maternal reflective functioning (when child was 16 months old; Huth-Bocks et al. 2014; Stacks et al. 2014). However, unlike the lack of relation between reflective functioning and observed parenting behavior shown by Schechter's group, the MACY findings did indicate that maternal reflective functioning was associated with higher maternal sensitivity and lower maternal negativity in observed mother-infant interactions (Stacks et al. 2014). Similarly, Ensink et al. (2016) also reported that CM history was unrelated to reflective functioning and that reflective functioning did predict parenting behaviors and child outcomes. More recently, Berthelot and colleagues (Berthelot et al., 2015) proposed the need to assess reflective functioning in interviews that probe directly for the trauma experience in order to appreciate the true value of RF on mental wellness in the context of trauma history. Based on the rather limited research, to date it appears that CM does not appear to directly impact

maternal reflective functioning. This offers a message of hope and suggests that survivors of CM have the capacity to be reflective about their child's mental states.

Childhood Maltreatment History and Maternal Perceptions of Bonding with Child Maternal perceptions of her child and the bond between mother and child have important implications for the day to day experience of parenting. Not surprisingly, research is mixed on whether and how CM impacts such maternal perceptions. For example, the MACY team found that mothers with CM histories report higher levels of bonding impairment than mothers without CM histories toward their 6-month-old babies; however, the persistence of bonding problems across postpartum was predicted by postpartum psychological symptoms (PTSD and depression) rather than CM history per se (Muzik et al. 2013). Schechter's group (2010) also reported a significant correlation between maternal PTSD symptoms and self-reported dysfunctional parent-child interactions. Of note, maternal depression was highly correlated with PTSD in their sample ($r = 0.80$) suggesting that the combination of depression and PTSD symptoms may have explained the results (rather than PTSD symptoms alone). Only few studies report detrimental effects of CM experience, even when accounting for maternal psychopathology. Further, research with community mothers and their 1-year-old child demonstrated that, after controlling for maternal depression and PTSD symptoms, maternal history of emotional abuse was positively related to self-reported *dysfunctional* infant-parent interactions, whereas maternal history of physical abuse and maternal history of sexual abuse were unexpectedly positively related to self-reported *adaptive* parent-infant interactions (Lang et al. 2010). Finally, one study found that families which had a caregiver with a CM history (mother, father, or both) reported higher levels of self-reported indifference about their baby compared to families in which neither caregiver had a CM history (Dixon et al. 2005). This finding came from the Child Assessment Rating Evaluation (CARE) program, which was a longitudinal population cohort study that followed thousands of families in Essex, England from 1995 to 1998 (Dixon et al. 2005).

Childhood Maltreatment History and Maternal Perceptions of Child Regarding maternal views of her child's temperament, results are also mixed. In fact, there is more research to support the notion that CM does not notably alter the ways mothers view their children than to support the notion that CM history biases perceptions. Specifically, the only support found for perception bias comes from the Oregon Youth Study where 206 boys and their parents recruited from the highest crime-rate areas of a medium-sized city were followed (Pears and Capaldi 2001). This research group found that parental abuse history was positively associated with parental perceptions that their young child (0–5 years) is difficult (e.g., colicky, behavior problems, emotional problems). In contrast, more studies have null results. For example, other research has shown that women with and without sexual abuse histories have equitable levels of enjoyment in their relationship with their child (Roberts et al. 2004). Similarly, Lang and colleague's research with community mothers found no differences in mothers with or without CM histories in their self-report of their infants' positive affectivity or regulatory capacity. Further, mothers with a significant history of emotional abuse described their infants as demonstrating a lower level of distress and a greater level of regulation compared to mothers without emotional abuse histories (Lang et al. 2010).

Childhood Maltreatment History and Parenting Confidence Another important domain of parenting is confidence in one's parenting abilities. Feeling competent and capable is something that most parents likely struggle with from time to time; however, research has shown that mothers with CM histories may be particularly vulnerable to doubt their parenting abilities. For example, one study with mothers of preschool-aged children (4–6 years) found that maternal childhood sexual abuse history was associated with self-reported concerns regarding parenting competence (Bailey et al. 2012). Very relevant to this finding is the fact that in this study, self-reported parenting variables (including concerns about parenting competence) did *not* relate to observed parenting behaviors. In other words, these mothers perceived themselves as less competent, yet their views of parenting competence were not predictive of actual observed parenting behaviors. Similarly, other research has shown that CM may lower a mother's confidence and self-efficacy in her parenting skills (Caldwell et al. 2011; Roberts et al. 2004); however, the relation between CM and confidence about parenting is not direct. Rather, CM heightens risk for symptoms of psychological distress (e.g., depression/anxiety), which in turn, lower a mother's confidence and self-efficacy regarding her ability to be a parent. In a sample of low-income, predominately African-American mothers, Banyard (1997) found that maternal depression and history of childhood neglect predicted maternal hopelessness about future parenting. Further, self-reported maternal parenting satisfaction was predicted by maternal depression and maternal history of physical and sexual abuse. In terms of pathways of effect, Banyard et al. (2003) reported that trauma history lowered parenting satisfaction and that this was best explained as mediated by maternal depression. Despite the fact that some mothers with CM histories doubt their parenting skills and abilities, there is no research to support that women with CM histories differ from women without CM histories in their knowledge of child development or tendency to have unrealistic developmental expectations (Bert et al. 2009; DiLillo and Damashek 2003; Ruscio 2001). Put together, studies such as these suggest that for some mothers, CM has the potential to reduce confidence and hopefulness about parenting; *however*, not all survivors of CM doubt their parenting abilities. Rather, it seems that mothers experiencing psychological symptoms (namely depression) are at greatest risk for doubting their parenting skills.

2.4 Childhood Maltreatment History and Maternal Parenting Behavior

Maternal thoughts and feelings impact behavior; however, there is not always concordance between how one perceives they are parenting and how they are objectively observed to parent. As such, in this next section we turn our attention away from maternal attitudes and beliefs and focus on observable maternal parenting behavior. Given that negative mood states and past trauma can alter the lens through which a mother views herself *and* given that self-reported parenting behavior does not always map onto observed parenting behavior (Bailey et al. 2012), we take

strides to clarify when we are talking about a mother's perception of her own behavior (self-report) versus more objective indices of maternal behavior (e.g., coded observations, Child Protective Services-CPS reports).

Intergenerational Transmission of Risk Historically, much research has taken a deficit approach to investigating the impact of CM on later parenting behaviors. In fact, the notion of "intergenerational transmission of risk" has framed much of the literature on trauma and parenting, with early estimates of the continuity of maltreatment from mother to child estimated to be as high as 70% (Egeland et al. 1988; Ertum, Lovejoy et al. 2000). More recently, a growing number of researchers have questioned the deficit model, acknowledged the limitations of past research (e.g., reliance on self-report, poor research design; Breckenridge, 2006), and highlighted that a CM history is by no means deterministic of engaging in maltreating behaviors (Belsky et al. 2009). In fact, discontinuation of risk is more of the rule than the exception. In other words, the risk that a mother who was abused will become abusive is much smaller than the likelihood that she will not be abusive toward her child. For example, data from the longitudinal CARE study in England found that 90% of parents with CM histories did *not* have reported abuse or neglect of their child within the first year of life (Dixon et al. 2005). Similarly, a study with young mothers (<21 years) with abuse histories found that the majority of mothers (77%) broke the cycle of abuse with their young child as indicated by lack of CPS reports by the time the child was 30 months old (Bartlett and Easterbrooks 2015). We stress this message of discontinuity as the literature on intergenerational transmission of maltreatment has tended to focus on risk rather than resilience. While we acknowledge that it is essential to understand whether and how CM history could lead to abusive parenting, we also think it essential to understand resilience and factors that help to buffer mothers with CM histories. The following sections review literature on parenting behaviors in women with CM histories.

It seems fair that readers might now be wondering "How does CM impact actual parenting behaviors?" We hope that by this point in the chapter, one has come to expect the answer "it depends." Consistent with the research reviewed thus far, there are studies documenting significant parenting differences between mothers with and without CM histories *and* studies documenting no differences. In regard to research supporting the notion that CM negatively impacts parenting, one study with high-risk mothers (low income, minority) and their older child (9–15 years) found that, after controlling for maternal income and psychopathology, maternal trauma history was related to mothers' report of punitive parenting and use of physical aggression toward their children (Cohen et al. 2008). Further, trauma history, current depression, and current substance use were predictive of a mother's overall level of child abuse potential (self-reported), whereas PTSD symptoms negatively related to a mother's reported use of physical discipline.

However, as stated, results are mixed. Bailey and colleagues examined the unique impact of different types of CM experiences on observed parenting in a sample of mothers with moderate risk (defined as having the presence of at least one demographic risk factor) and their preschool-aged child (4–6 years; Bailey et al. 2012).

They found that while maternal history of witnessing family violence, experiencing neglect, and/or experiencing emotional maltreatment were significantly associated with mothers' observed hostility toward her child, there were no significant relations between maternal history of physical or sexual abuse and observed maternal hostility. And furthermore, CM history (any type) and maternal observed sensitivity or non-intrusiveness were unrelated. Another study with mixed results examined parenting in a sample of low-income mothers, half with confirmed childhood sexual abuse and half without (Banyard et al. 2003). Results indicated that there was a significant relation between maternal history of physical abuse and maternal report of neglectful parenting, CPS involvement with her child, and use of more severe physical discipline with her child. However, when controlling for trauma experienced in adulthood, the impact of childhood abuse history on current parenting was no longer significant. Further, there were no significant relations between maternal childhood history of sexual abuse or exposure to domestic violence and parenting behaviors. Finally, compared to community mothers, mothers with childhood sexual abuse histories self-reported being more permissive in parenting, but there were no group differences in authoritative parenting style (generally considered an adaptive style that balances warmth and limit setting; Ruscio 2001).

To help understand the notion "it depends," that is, the many mixed results, researchers have examined mediators and moderators of the relation between CM and parenting behaviors. One study with community mothers found that parenting stress mediated the relation between CM and observed maternal sensitivity toward her 16-month-old (Pereira et al. 2012). Results from the Oregon Youth Study found that parental CM history interacted with consistency of parental discipline, depression symptoms, and PTSD symptoms to predict parental abusive behaviors toward their child (Pears and Capaldi 2001). Other studies have documented that maternal negative affectivity, emotion dysregulation, anger, depression, anxiety, dissociation, current partner violence, and the accumulation of risk factors (e.g., young maternal age, mental illness) are all mediators between CM history and child abuse potential (DiLillo and Damashek 2003; Dixon et al. 2005; Narang and Contreras 2005; Schuetze and Eiden 2005; Smith et al. 2014). Results such as these stress the need for interventions that would target these potentially mediating pathways and risk factors. The intervention developed by our research group (Mom Power) is described in chapter 11.

Research from the MACY group has generally found that CM history does not directly impact parenting behaviors. As part of the MACY protocol, mothers engaged in a series of interactive tasks (e.g., free play, teaching task) when their child was 6 months and 16 months old. Recordings from these tasks were reliability coded for a range of parenting and infant behaviors (see Huth-Bocks et al. 2014 for a thorough description). Regarding maternal behavior when her child was 6 months old, CM history was not related to observed maternal positive behaviors (i.e., behavioral sensitivity, engagement, flexibility, warmth, affective sensitivity, and positive affect) or negative parenting behaviors (i.e., overcontrolling/intrusive and hostility scales; Huth-Bocks et al. 2014). Though CM did not directly relate to positive parenting, it had an indirect relation through maternal depressive symptoms (Martinez-Torteya et al. 2014). In an effort to better understand the unique and combined

impact of PTSD and depression on mother's observed parenting with her 6-month-old, the MACY team also compared parenting in women with/without depression, PTSD, or comorbid depression/PTSD (Muzik et al. 2017). Mothers with depression showed the most impairment in observed parenting (e.g., lower sensitivity, higher negative affect). Childhood maltreatment in the absence of postpartum psychopathology did not infer parenting risk. Finally, Stacks et al. (2014) found that observed maternal sensitivity and observed maternal negativity (both coded during interactions with 16-month-old child) were unrelated to maternal CM history, current depressive symptoms, or current PTSD symptoms. In sum, CM history is not deterministic of poor parenting but rather heightens risk for depression, which, in turn, impacts parenting behaviors. Thus, proactive monitoring of depression symptoms in CM survivors may help with early detection and intervention.

2.5 Resilience in the Face of a History of Childhood Maltreatment

We hope that we have convincingly highlighted to the reader that a CM history is by no means deterministic of reduced maternal capacity. Rather, there are many pathways through which CM may heighten vulnerability for parenting difficulties as well as many pathways through which the intergenerational transmission of maltreatment may be interrupted. Further, there is evidence to support the notion that past trauma can lead to positive post-traumatic growth, defined as positive changes a mother's views of herself, her relationships, and her role as a parent that result from efforts to make meaning of her CM experiences (Fava et al. 2016). Across many studies reviewed, social support was one of the biggest protective factors that helped to promote resilience among CM survivors. Across demographic groups, it seems that safe, stable, nurturing relationships help to buffer against the potential adverse impact caused by CM (e.g., Bartlett and Easterbrooks 2015; Egeland et al. 1988; Schofield et al. 2013). Further protective benefits have been found both for past supportive relationships (e.g., supportive adults when one was a child) as well as current supportive relationships with a range of adults (e.g., family, partner, community). Not surprisingly, a safe and supportive co-parent also offers protective benefits against a CM history (Egeland et al. 1988; Jaffee et al. 2013). Reduced isolation, increased financial stability, participation in therapy, reduced stress, and increased empathic abilities are just some of the mechanisms through which social support may help promote positive parenting (Bartlett and Easterbrooks 2015; Dixon et al. 2009; Schofield et al. 2013). Further, these protective factors likely interact to have synergistic protective value in the face of CM. For example, Katsonga-Phiri and colleagues (Katsonga-Phiri et al. Under Review) found that low maternal depression and high maternal resilience (self-reported composite measure of cognitive, social, and spiritual coping) protected a mother's sense of parenting self-competence from the impact of CM. Finally, consistent disciplinary practices and maternal warmth also help to break the intergenerational transmission of risk (Jaffee et al. 2013; Pears and Capaldi 2001), highlighting the need for more parenting interventions specifically for women with CM histories. In sum, safe and supportive relationships, mental health treatment, and supportive parenting interventions help to promote growth and healing for

survivors of CM. Awareness of protective factors can inspire hope and help guide targeted screening, intervention, and prevention.

2.6 Clinical Implications and Future Directions

A mother's history of CM has the potential to impact her mental well-being, beliefs about parenting, confidence in her parenting abilities, perception of her baby and the parent-child relationship, and parenting behaviors. The perinatal period is a time of heightened stress and vulnerability for all women, but women with CM histories are particularly vulnerable. Despite this vulnerability, CM is not deterministic of reduced maternal capacity. In fact, breaking the intergenerational cycle of abuse is the most common outcome for CM survivors. Social support, mental health treatment, and parenting supports help to buffer against the damages that can be caused by CM. One of the primary mechanisms through which CM impacts motherhood is through the experience of psychological symptoms. Put together, this knowledge offers validation to the programmatic and policy efforts aimed at early screening and targeted interventions that integrate research on development, attachment, trauma, and resilience. The reader will learn more about such programs in chapters 9 through 13. While it is exciting and promising that such programs exist, many survivors of CM do not have access to these supports or programs. As such, continued work is needed to disseminate knowledge and evidence-based policies and programs for families impacted by CM. Finally, we hope that the information summarized in this chapter empowers survivors of CM and the providers who support them to understand risks while believing in and working toward resilience.

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The Effects of Intimate Partner Violence on the Early Caregiving System

3

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Abstract

This chapter reviews the effects of intimate partner violence (IPV: defined here as male physical, psychological and/or sexual violence towards his female partner) on the early mother-child relationship, beginning during pregnancy and through the first few years postpartum. Attachment theory is used to explain the mechanisms through which IPV affects the mother-child relationship. Extant research has documented the significant toll that IPV takes on women's physical and mental health. IPV and its consequent mental health effects may impair women's parenting beginning in utero as women develop maternal representations of the baby and herself as mother. These representations are found to influence parenting behavior during infancy. Infants develop internal working models of attachment based on the parenting behaviors they experience. Thus, when IPV affects parenting, it can influence the kind of attachment relationship between the mother and child, laying the groundwork for the child for future significant relationships. In addition, poor attachment quality is associated with poor emotional self-regulation leading to behavioral problems in children. Thus, we conclude that targeted interventions for mothers and children exposed to IPV are critical for intervening in this intergenerational cycle of violence.

Intimate partner violence (IPV) is a distressingly common experience for women across the globe (Devries et al. 2013). In the United States, 36% of women report experiencing IPV in their lifetime (Breiding et al. 2014). IPV includes psychological abuse (e.g., coercion, name-calling, or threats of violence), physical abuse (e.g., hitting, kicking, or use of a weapon), and sexual abuse (e.g., forced sexual activity). Lifetime prevalence rates of physical abuse for women are about 30%, 24% for

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severe physical abuse, 9% for rape, and 17% for other sexual violence (Breiding et al. 2014). While men also experience IPV, the rate is lower, and importantly, they are less likely to suffer serious consequences, including injuries, hospitalizations, lost days at work, and mental health problems (Breiding et al. 2014).

IPV affects younger women disproportionately, with 60% of women reporting that their first experience occurred before they were 25 years of age (Breiding et al. 2014). Thus, women who are of childbearing age are at highest risk for these experiences. This also means that young children are also at disproportionate risk of exposure compared with older children. In fact, one study found that about 50% of children exposed to IPV were age 5 or younger (Fantuzzo et al. 1997).

Pregnancy can be a particularly pernicious time for experiencing IPV. In lower-income samples, up to 30–50% of women in some groups report being physically abused by their partners during pregnancy (e.g., Gazmararian et al. 1996; Sonis and Langer 2008) resulting in harm to the fetus as well as to the woman. Some children are thus exposed to IPV in utero and then continue to witness violence during their early childhood.

The current chapter reviews the research findings on the effects of IPV on women's mental health and parenting and children's functioning from the pregnancy/prenatal period through early childhood. We use attachment theory to explain the mechanisms through which IPV may affect mothers' and children's functioning. Attachment theory proposes that infants develop internal working models (IWMs) of self and other based on their early caregiving experiences (Bowlby 1969/1982) which then serve as templates for later significant relationships. These IWMs can be modified throughout life based on experiences in significant relationships. IPV involves betrayal within a significant relationship, resulting in mental health consequences such as depression and post-traumatic symptoms, leaving women vulnerable to damage to their IWMs. For a pregnant or parenting mother, this damage can affect the development of her IWMs about herself as mother as well as her IWMs about her relationship with her own child and her child's personality. These harmful modifications to IWMs can negatively influence her parenting behaviors, which, in turn, may affect the child's development of IWMs of him/herself and his/her relational foundation for trusting other people. Thus, in this way, IPV may be conceptualized not only as an assault on the woman but on the caregiving system as a whole. Using this attachment perspective, this chapter begins with a review of the health consequences for women exposed to IPV, then reviews the research on women's parenting, and finally discusses children's attachment styles and emotional and behavioral functioning.

3.1 The Consequences of IPV on Women's Health

IPV leads to significant physical injury and health problems for women (e.g., Brownridge 2006). As regards physical health, the problems include injuries, immune disorders, difficulty sleeping, and gastrointestinal problems (Eby et al. 1995). In addition to physical injuries, IPV is also associated with health problems

(e.g., Campbell et al. 2002). In addition, different types of IPV have disparate associations with negative physical health outcomes. For example, among college-aged women, it was psychological IPV, rather than physical IPV, that was predictive of poor health status, including women's health perceptions and the extent to which their physical health impaired their daily activities (Straight et al. 2003). Sexual assault (sometimes perpetrated by an intimate partner) has been associated with physical health symptoms and somatization (Tansill et al. 2012). Additionally, there is some evidence that experiencing multiple forms of abuse, rather than any one type of abuse, puts a woman at greatest risk for physical injuries (e.g., Eshelman and Levendosky 2012).

Pregnant women are susceptible to these physical health problems as well as other problems. Recent research suggests that women experiencing IPV are more likely to experience contraceptive coercion (partners withholding contraception and forcing women to get pregnant) compared to women not experiencing IPV (e.g., Miller et al. 2010). Contraceptive control has also been associated with unplanned pregnancies (Miller et al. 2010). Once pregnant, women who experience IPV have an increased risk of hemorrhage prior to childbirth and a restriction in intrauterine growth (Janssen et al. 2003) as well as increased rates of sexually transmitted diseases (Campbell et al. 2002). Preterm labor, vaginal bleeding, severe nausea, vomiting or dehydration, and kidney infection or UTI are also associated with IPV during pregnancy (Silverman et al. 2006). Interestingly, in the Silverman et al.'s (2006) research, women who experienced IPV prior to (and/or during) pregnancy had more health problems than those who only experienced IPV during pregnancy. In addition, miscarriage rates and perinatal deaths are higher in this population (e.g., Janssen et al. 2003) for two reasons—the abuse itself and women's lack of early prenatal care.

In the aftermath of many types of traumatic stressors, there is a high risk for depressive and post-traumatic stress symptoms (PTS) (e.g., Shih et al. 2010). The prevalence of depression among women experiencing IPV ranges from 35 to 75% (e.g., Nathanson et al. 2012), and the prevalence of PTS ranges from 45 to 84% (e.g., Jones et al. 2001). Comorbidity between PTS and depression is high (e.g., Nixon et al. 2004). Women exposed to IPV also have a higher risk for anxiety symptoms and diagnoses (e.g., Pico-Alfonso et al. 2006).

IPV varies in frequency, ranging from episodic to chronic (Martsolf et al. 2012). More frequent and severe IPV has been associated with more severe mental health symptoms. For example, sustained, chronic IPV is more likely to be associated with depressive, anxiety, and PTS symptoms (e.g., Bogat et al. 2003, 2004). Recency of IPV also affects mental health with more recent abuse associated with more negative mental health outcomes (e.g., Bogat et al. 2003). Termination of IPV often triggers a reduction in mental health symptoms (e.g., Bogat et al. 2004), but not always (see Anderson et al. 2003). It may be that some women are concerned that the abuse will begin again, and this sustains mental health problems. As with physical health problems, some research finds that specific *types* of IPV are associated with depressive and PTS symptoms. However, at least one study found that experiencing multiple types of IPV was more predictive of mental health problems than

experiencing only one or two specific types (Eshelman and Levendosky 2012), suggesting the importance of examining multiple types of IPV.

In summary, IPV diminishes women's psychological resources through its damaging effects on physical and mental health. For those women who are pregnant or parenting, this depletion of internal resources becomes problematic as they attempt to respond to the needs and demands of their pregnancy/children. In addition, their children's needs may be higher than normal, if they, too, have experienced the trauma (see section below for summary of how IPV affects children's psychosocial development). With reduced psychological resources, women's developing IWMs related to the mother-child relationship are damaged (see Levendosky et al. 2012), and they are also likely to engage in problematic parenting behaviors. For example, warm, sensitive, and engaged parenting requires the ability to regulate one's own affective responses as well as the capacity to identify and appropriately attend to a child's emotional cues (e.g., Maccoby and Martin 1983); however, self-regulation diminishes under stress (Muraven and Baumeister 2000), such as IPV. Thus, it follows that attuned and sensitive parenting is hard to sustain in the context of IPV.

3.2 The Consequences of IPV on Parenting

Parenting during infancy and early childhood is critical for the formation of a child's self-worth and later relationship functioning as well as normative health and development (e.g., Maccoby and Martin 1983). Parenting behaviors can also influence trajectories of children's adaptation in response to adversity (e.g., Fenning and Baker 2012). Parenting begins during the prenatal period when mothers develop thoughts and feelings about their infants and the mother-infant relationship (e.g., Stern 1995); thus, IPV may affect parenting as early as the prenatal period.

As a pregnant woman undergoes the physical transformation to parenthood, she also undergoes a mental transformation from care-seeker to caregiver (George and Solomon 2008; Stern 1995). This mental transformation is evident in changes to her IWMs, which guide her understanding of herself and others in her close relationships, including the relationship with her own child. The internal templates for the maternal role, called maternal representations, develop during pregnancy and are considered to be one of the earliest forms of parenting (e.g., Stern 1995). During this time, a woman begins to think about herself as a parent and develops hopes and expectations for her child, influenced by her own experiences in her attachment relationship(s) (e.g., Slade and Cohen 1996). When her child is born, these representations guide her parenting behaviors (e.g., Dayton et al. 2010). Ideally, they help her to perceive her own role and her child's needs accurately and to respond consistently and sensitively toward her child. Maternal representations are intended to complement the attachment system, with both having the shared goal of the care and safety of the child (George and Solomon 1999). Therefore, by guiding maternal behaviors, maternal representations may play a critical role in the development of infant attachment security (e.g., Zeanah et al. 1994). Indeed, prenatal maternal

representations significantly predict infant attachment classification at 1 year of age, suggesting that maternal representations may be a mechanism by which attachment relationships are transmitted from mother to child (Huth-Bocks et al. 2004a). For example, mothers with balanced (i.e., realistic, flexible, and rich in detail) representations are more likely to engage in sensitive parenting and have infants who develop a secure attachment style, whereas mothers with dismissive representations (i.e., downplay the importance of attachment needs from their infant and may show distant and harsh attitudes toward the baby) are more likely to show disengaged or hostile/intrusive parenting style, and their children are more likely to develop insecure attachment.

Maternal representations may be negatively affected by experiences that interfere with a mother's shift from care-seeker to caregiver. IPV may impede this process by not only making a woman feel unsafe but also, relatedly, making her feel that she cannot ensure her child's safety and care if her own safety and care are threatened (George and Solomon 2008). A person's romantic partner, like the childhood primary caregiver, is also an attachment figure who typically provides a sense of safety. However, when her romantic partner is a source of fear and violence, a woman may engage in psychological defenses to protect herself. These defenses may ultimately lead to changes in her IWMs that have consequences for her maternal representations. Women who experience IPV during pregnancy may respond to the IPV by using defenses such as dissociation, withdrawal, and isolation, which may also result in emotional disengagement from the unborn child. Women may also identify with the unborn child ("My child is helpless like me") or perceive their unborn child to be like their partner ("My child is violent like my partner"), either one hindering the shift from receiver to giver of care (Levendosky et al. 2012). Thus, women who experience IPV during pregnancy are more likely to develop distorted (e.g., unrealistic views of the infant) or disengaged representations (e.g., lack of attention or knowledge about the infant's characteristics; Huth-Bocks et al. 2004b).

A brief case example illustrates how IPV may affect women's developing maternal representations. Leslie was a 25-year-old first-time mother in her last month of pregnancy. She lived with her partner who was the baby's father. They were both African-American and had graduated from high school. Leslie had also gone to beauty school but wasn't working now—she planned to work soon after the baby was born. Her partner worked off and on and was currently doing some construction work. She hated being pregnant—she described being miserable due to her backaching during her pregnancy. She was abused by her partner and told us that she expected her baby to be a lot like her partner and was worried about this. When asked what she expected her child's personality to be like when he or she was born, she responded immediately that she expected him to be a "pain in the butt" and to cry all the time and explained that her partner (baby's father) is a "pain in the butt." She imagined that the baby would cry all the time during the first year and that this would be very hard for her and that she would feel like she was going to go crazy when the baby cries a lot. When asked to describe her relationship with her baby during her pregnancy, she said that the baby was beating her up all the time. She felt

that he was trying to break her ribs and that he was making her pregnancy worse than it had to be. She was hoping to have a son.

In Leslie's story, there are clear signs of disturbance of these prenatal maternal representations. She attributes intentional violence to the fetus and also expects the baby to be very difficult (even violent) like his father. We do not know why she wants a boy, but perhaps it is to save the child from her own fate—both being hurt by a partner and being pregnant. Leslie appears to be ready for another violent male in her home, and this is presumably preferable to a female who is vulnerable. She is not focused on the needs of the baby, and her attributions of violence suggest that she is not really thinking about a baby but instead another violent male who can hurt her. Her concerns about her fetus/child and about her own mental health in response to normative infant behavior, e.g., crying, suggest a sense of profound vulnerability. All of this interferes with adequate development of the mother-child relationship.

The negative effect of IPV on maternal representations may also be evident in postpartum parenting behaviors. As IPV undermines a woman's representation of herself as worthwhile and as a capable parent who can protect her child (Ahlfs-Dunn and Huth-Bocks 2015), she may engage in parenting behaviors that undermine the mother-child relationship. For example, a woman who perceives herself and her child to be helpless against her partner may alternate between withdrawing and engaging in overly controlling parenting. She may feel overwhelmed and incapable of caring for or protecting her child, causing her to become emotionally dysregulated and withdrawn. In addition, she may feel that the child cannot take care of himself/herself and therefore treat the child as incapable, resulting in overly controlling parenting (see Levendosky et al. 2012). On the other hand, when a mother sees her child as another abuser, she may feel fearful of or hostile toward her child, causing her to respond with less warmth and engage in fewer positive caregiving behaviors (see Levendosky et al. 2012). Therefore, the way that a mother understands her relationship with her child may be negatively influenced by IPV, which may in turn have consequences for maternal parenting behaviors and ultimately for child attachment.

Turning now to parenting behaviors, we review the studies of early parenting in families with IPV. Beginning in pregnancy, women in IPV relationships are less likely to seek prenatal care (e.g., Huth-Bocks et al. 2002). These women may have partners who prevent them from obtaining prenatal care in an effort to assert control or out of concern that the abuse may be discovered (e.g., McFarlane et al. 1992). Thus, even the earliest parenting behaviors, such as that of seeking prenatal care, are negatively affected by IPV.

Research on the effects of IPV on parenting behaviors finds that mothers who experience IPV are less sensitive and warm (e.g., Dayton et al. 2016; Levendosky et al. 2006) and are more hostile, angry, and aggressive with their children (e.g., Graham et al. 2012; Gustafsson et al. 2015). In a rare longitudinal study of IPV and parenting, Letourneau et al. (2007) found that exposure to IPV prior to age 2 compared with later exposure to IPV or no exposure was associated with lower levels of maternal self-report of warmth/nurturance and positive discipline at both early and later assessments. However, there is evidence that some mothers may compensate

for their experiences of IPV by employing effective and/or warm parenting (e.g., Letourneau et al. 2007). Mothers who compensate for IPV likely experience less psychological distress (e.g., fewer depressive symptoms, more adaptive ways of coping with the IPV, and more resilience). In addition, as Buchanan et al. (2014) note, based on findings from a small qualitative study, while harsh and insensitive caregiving behaviors may ultimately undermine the security of the mother-child relationship, some of these behaviors may be attempts to maximize the safety of the child in a detrimental environment. For example, they found that some mothers may appease their partners by withdrawing from the child and focusing on their partner's demands to make the mother-child relationship feel less threatening. Other mothers may use overly controlling parenting with the child in an effort to ensure that the partner is not provoked by the child's behavior. Therefore, the same parenting behavior that undermines the early mother-child relationship may also help a mother fulfill her role as a capable parent whose foremost goal is the safety of her child (Buchanan et al. 2014).

Importantly, IPV may not be the only factor negatively affecting mothers' parenting behaviors. Mothers who experience IPV are also more likely to be from low-income families (e.g., Vest et al. 2002) and to have elevated depressive symptoms (e.g., Bogat et al. 2003) compared with women who are not in violent relationships. Both low family income and maternal depressive symptoms independently predict harsh parenting and parental coercion (e.g., Arditti et al. 2010). In families with multiple risk factors known to contribute to maternal parenting, the risk factors likely have both independent and interactive effects on maternal parenting behavior; however, these have not been adequately differentiated (e.g., Taylor et al. 2009).

Thus, women living in the context of IPV often suffer negative consequences to their physical and mental health, their internal working models of self as mother, and consequently their parenting behaviors. As a result of these negative repercussions of the violence, children in these families also frequently suffer negative consequences. As seen through an attachment lens, this is understood to happen intergenerationally through the damage to the IWMs of the mother in relation to her child.

3.3 The Consequences of IPV on Children

Child Attachment As noted earlier, parenting during the early years is critical for the development of children's emotional and behavioral self-regulation. Specifically, during the first year of life, a child is dependent on a caregiver, most often his mother, for safety, care, and emotion regulation. His mother's ability to respond consistently, sensitively, and appropriately to his needs shapes the child's IWMs of his relationship with his mother and of future relationships (Bowlby 1969/1982). These expectations guide the child's behavior when the attachment system becomes activated and the child's sense of security is undermined in the face of a safety threat, either to the mother or the child's immediate environment (e.g., Bowlby 1969/1982; Cummings and Davies 2010). The child's behavioral response can be

understood as the behavioral manifestation of attachment and emotional security, which can be classified into secure and insecure (with insecure subdivided into avoidant, ambivalent, and disorganized in regard to attachment). Importantly, children's attachment and emotional security predict psychological, behavioral, and relational functioning as well as development over time (Levendosky et al. 2012).

IPV undermines the security of a child's attachment by affecting the mother's ability to provide a sense of safety and consistent care to her child (Carpenter and Stacks 2009). This may be especially problematic in early childhood when children are more dependent on their primary caregivers and may therefore be more likely to feel fearful and helpless if they see their mothers subjected to violence (Huth-Bocks et al. 2001). These feelings may alter children's perceptions of self and other, which then influences how they respond affectively, behaviorally, and physiologically to future threats to their well-being.

IPV experienced during a mother's pregnancy and postpartum has implications for child attachment. For example, maternal experience of IPV is a risk factor for the development of insecure attachment by the child at age 1 (Levendosky et al. 2011). By late infancy and early toddlerhood (12–24 months of age), postnatal IPV is associated with a greater likelihood for children to be insecurely attached relative to low-risk children, with evidence suggesting a significant increase in disorganized attachment classifications (e.g., Zeanah et al. 1999). There are several pathways through which IPV may affect child attachment and emotional security. For example, IPV may influence attachment directly if a child witnesses the IPV directed at his mother by her partner (Huth-Bocks et al. 2004a). Zeanah et al. (1999) suggested that a child witnessing IPV may simultaneously feel afraid for his mother but also feel fearful of his mother. This may explain the frozen and back-and-forth behavior typically displayed by children with disorganized attachment. IPV may also affect children's attachment indirectly via the effects of IPV on maternal representations and parenting in such that mothers exposed to IPV may feel more terrified/anxious and, in turn, behave more frightening toward their children themselves. IPV is associated with greater odds for child maltreatment, which also may increase the likelihood of the child becoming insecurely attached and feeling emotionally insecure (Stronach et al. 2013).

Importantly, while there is considerable stability in a child's attachment categorization, environmental changes are associated with changes in attachment. Levendosky et al. (2011) examined whether changes in IPV experiences for a mother from pregnancy through her child's age 4 predict the stability or change in her child's attachment classification between ages 1 and 4. Children who were secure at age 1 and remained secure at age 4 came from homes in which IPV was consistently low across time. Children who were initially insecure at age 1 but became secure by age 4 were exposed to low levels of IPV that decreased even further across time before rising to the original low level. In contrast, children who remained insecure throughout all 4 years came from homes with high levels of pregnancy IPV that decreased only somewhat over time. Finally, children who transitioned from secure at age 1 to insecure by age 4 came from homes with unstable IPV levels that began low, increased, decreased, and then increased to the highest

level at age 4. These results suggest that attachment classifications, though typically stable over time (even in families with violence; see Barnett et al. 1999), do have the potential to change if the caregiving environment changes either positively or negatively (Levendosky et al. 2011). Those children whose attachments remain insecure are at higher risk for psychopathology in childhood and adulthood (see Barlow et al. 2016; Lyons-Ruth 2008 for reviews).

While IPV is a serious threat to the mother-child relationship and to the child's attachment and sense of emotional security, there are factors that promote resilience. Firstly, a change in the environment (e.g., if a mother leaves a violent relationship) may promote a positive change in attachment from insecure to secure (which may be associated with a positive change in maternal representations). Secondly, if a mother holds balanced maternal representations of herself and her child, this may buffer the effect of IPV on attachment by promoting the infant's sense of security. Mothers with balanced representations may be able to provide sensitive parenting and make the child feel safe despite the presence of IPV (Levendosky et al. 2012).

Behavioral Problems In addition to effects on attachment quality, there has been research on the negative effects of IPV on children's behavioral problems, which are related to heightened emotion reactivity and deficits in emotion regulation strategies. Specifically, young children exposed to IPV are at greater risk for behavioral problems compared to nonexposed children (see Evans et al. 2008 for a review). These findings are not surprising given that the early childhood period is a sensitive period for many foundational social-emotional skills. During the first 5 years of life, relevant developmental tasks include learning how to engage in social relationships, solve problem, regulate emotion, and communicate distress. IPV exposure can disrupt progress in these developmental tasks and lead to lasting influences on children's cognitive, social, and emotional functioning (Carpenter and Stacks 2009). This effect can occur through direct exposure to incidents of violence, along with associated changes to the external environment of the child (e.g., maternal IWM and mental health problems, transitions in family structure). Young children are especially sensitive to relational trauma at the family level because they depend on caregivers to meet their physical and emotional needs. For example, before engaging in independent emotion regulation, very young children rely on caregivers to reflect back to them how they are feeling and to make sense of their experience. IPV-related changes in maternal affect can impair the parent's ability to mirror and respond to infant emotion, thereby affecting emergent emotion regulation skills.

Due to the transactional nature of these internal and external processes, risk and resilience for child adjustment following incidents of family violence should be conceptualized as a multifaceted and dynamic process. That is, exposure to IPV can influence a number of different developmental domains and external factors that interact and shape later adaptive functioning. According to the concept of developmental cascades, competence in early developmental tasks of childhood fosters competence in subsequent tasks (Masten and Cicchetti 2010). As such, it is crucial to consider how exposure to IPV during early childhood can disrupt early-emerging

social-emotional skills and alter developmental trajectories, thereby conferring risk for the development of behavioral problems.

Social-emotional problems associated with IPV include heightened levels of emotional distress and dysregulation as well as the development of internalizing (e.g., depression, anxiety) and externalizing (e.g., defiance, aggression) behavioral problems. Effect sizes for the relationship between IPV exposure and behavioral problems range from small to moderate. In a meta-analysis of over 60 studies of children exposed to IPV, Evans et al. (2008) found moderate effect sizes for the relationship between IPV exposure and childhood internalizing (d = 0.48) and externalizing behavioral problems (d = 0.47). Furthermore, an analysis of a subset of six studies that measured trauma symptoms in children exposed to IPV found a large effect size (d = 1.42), indicating IPV acts as a traumatic stressor.

Longitudinal studies have investigated prospective associations between children's exposure to IPV and child internalizing and externalizing problems. A meta-analysis of 74 longitudinal studies indicated that the relationship between exposure to IPV and child behavioral problems increased over time and persisted for periods of 10 years or more (Vu et al. 2016). With respect to moderators, there are mixed findings across meta-analytic studies. Kitzmann et al. (2003) found that the relationship between IPV and behavioral problems was stronger in younger children, with no effect of gender. In contrast, Evans et al. (2008) found that the relationship between IPV and externalizing symptoms is stronger in boys than girls, while there was no effect of age. More specifically, IPV is robustly associated with internalizing symptoms such as anxiety, worry, and depressive symptoms (e.g., Martinez-Torteya et al. 2009). As one proposed mechanism, exposure to incidents of IPV may lead children to develop maladaptive cognitions involving self-blame or perceptions of threat, thereby heightening risk for mood or anxiety disorders. Indeed, one study concluded that attention bias toward threat moderated the association between family violence and anxiety in preschool children (Briggs-Gowan et al. 2015).

In addition to internalizing symptoms, research indicates that IPV-exposed children are more likely than their peers to show high rates of externalizing symptoms. The relationship between IPV and externalizing symptoms may be stronger when children are younger (Sternberg et al. 2006). It may be that problems with reactivity and regulation associated with IPV exposure are more likely to present as externalizing problems when children are preschool aged and younger. That is, a sense of threat induced by IPV can lead to hypervigilance and heightened sensitivity to signs of anger and conflict, priming children to react aggressively to social provocation inside and outside of the home. Witnessing IPV may also shape attitudes about the use of aggression during interpersonal conflict.

Exposure to IPV can lead to trauma symptoms in the form of intrusive reexperiencing of the events in dreams or flashbacks, hyperarousal (e.g., exaggerated startle response), and emotional withdrawal following exposure to IPV. Research indicates that for young children, witnessing physical threats to a caregiver is the most powerful predictor of PTSD diagnoses compared to other types of trauma (Scheeringa and Zeanah 2001). Levendosky et al. (2013) found that when children were assessed with developmentally appropriate measures of trauma symptoms from ages 1

through 7, approximately half of the children exposed to IPV displayed trauma symptoms. Already in infancy, exposure is consistently associated with trauma symptoms such as hyperarousal, avoidance, and the development of new fears (e.g., Bogat et al. 2006). Thus, even before children have the ability to communicate about their internal experiences or form declarative memories, infants can present with marked changes in behavior in response to witnessing violence. Preschool children also show high rates of trauma symptoms following IPV exposure. In relation to the type of trauma symptoms displayed, there is some evidence to suggest that reexperiencing symptoms increase with age and advances in cognitive and communication capacities, and avoidance symptoms are less common in preschool children compared with older children (e.g., Levendosky et al. 2013). In light of these findings, researchers stress the need to consider how IPV effects may manifest differently as a function of the child's developmental stage and social context.

Importantly, not all children develop psychopathology following exposure to IPV. In a meta-analysis, Kitzmann et al. (2003) found that a sizeable minority of IPV-exposed children (37%) show average or better than average developmental functioning compared to non-IPV-exposed children. Thus, there is significant variability in the emotional outcomes of children exposed to IPV. Resilience has been described as "good outcomes in spite of serious threats to adaptation or development." (Masten 2001, p. 228). Good outcomes include the ability to meet appropriate developmental tasks and adapt to the environment in ways that meet the individual's goals (e.g., for safety, emotional security, satisfying relationships, or academic/career success). As many IPV-exposed children achieve positive outcomes in developing secure relationships and regulating their emotional responses, research is increasingly focusing on identifying the individual and environmental characteristics associated with resilience in this at-risk group.

Temperament is one individual characteristic associated with moderating the relationship between IPV and adaptive outcomes. Infants who demonstrate difficult temperament at birth benefit from a particularly sensitive postnatal environment that helps them learn to regulate their emotions and biobehavioral responses. Children with an easy temperament (e.g., stable positive moods, adaptive to change) are less predisposed to experiencing emotional reactivity and are better able to recover from distress. Bowen (2015) reported that easy temperament (less emotionality) predicted membership in a resilient group of preschoolers exposed to IPV in the first year of life who maintained normative social development. Children with positive temperament traits seem less negatively affected by disorganized and disruptive families (e.g., Martinez-Torteya et al. 2009).

External factors such as supportive parenting, positive maternal mental health, and access to resources at the family level are also associated with resilience. In a seminal longitudinal study of children from the prenatal year to age 4, Martinez-Torteya et al. (2009) found that while IPV-exposed children were nearly four times more likely than nonexposed children to develop internalizing or externalizing symptoms, 57% of children maintained positive adaptation. Resilience to IPV was associated with the absence of maternal depression, shorter exposure to DV, and low levels of stressful life events. Thus, it is clear that protective factors within the child

and the environment can help children survive and even thrive despite such a challenging environment as the one posed by exposure to IPV.

Conclusions

In summary, the lens of attachment theory provides an explanation for the kinds of mental health and behavioral problems seen in women and children living with IPV. In particular, early exposure to IPV, beginning with pregnancy and the first year of life, which are sensitive periods for the development of the mother-child relationship, places women and children at risk of damage to their psychosocial functioning. Thus, developing interventions that target mothers and young children in families with IPV is particularly important in order to prevent long-term negative consequences.

Home visiting programs, e.g., Child First (Lowell et al. 2011) or Infant Mental Health Home Visiting (IMH-HV; Weatherston and Tableman 2015), typically work with families with a range of difficulties, including IPV as well as poverty, child maltreatment, underemployment, and parental mental health problems. These are important programs which can improve the relationship between the mother and child as well as targeting other areas of risk. There is one treatment, in the more traditional mental health service design of office visits that has been specifically designed for women experiencing IPV during pregnancy and specifically targets the developing attachment relationship between the mother and child in the face of exposure to trauma: perinatal child-parent psychotherapy (Lieberman et al. 2011). This is an adaptation of an evidence-based treatment for parents and young children exposed to trauma, typically family violence, called Child-Parent Psychotherapy (CPP) (Lieberman et al. 2005). The perinatal version of the CPP treatment program begins during pregnancy and continues until the child is 6 months old. This intervention promotes self-care, attunement with the fetus, sensitive parenting with the infant, and reduction of negative IWMs and parenting behaviors toward the infant.

This kind of treatment, which has yet to be rigorously studied for its long-term effects on the mother-child dyad, has the potential to address the negative consequences of IPV on the caregiving system as reviewed in this chapter. We are hopeful that studies of this perinatal, attachment-oriented treatment, as well as others, will begin to show that the damage caused by IPV in the early mother-child relationship can be altered through intervention and prevention. In addition to intervention research, future studies would benefit from a person-oriented approach that examined subgroups of mothers and young children exposed to IPV to understand how different profiles of maternal mental health, maternal IWMs, maternal parenting behaviors, and child attachment may be related to children's emotional and behavioral functioning. While the current research has documented effects of mean levels of these factors on children's outcomes, we do not yet have an adequate understanding of which groups of children, based on these factors, may be a most risk and which ones are most likely to be resilient. This kind of research would move the field forward into more targeted interventions for particular groups of women and children.

Due to the effects of IPV on all components of the caregiving system, it is likely that effective treatments for IPV-exposed women and children will rely on attention to the functioning of the mother, the child, and the mother-child relationship, including IWMs, parenting behaviors, and child attachment. While it is a difficult and complex charge, it is critical for clinicians to intervene when mothers and their children are experiencing IPV to treat or minimize the detrimental effects of IPV. By targeting the caregiving system, interventions have the power to improve the psychological health of women and their children and prevent continued suffering. As mothers gain insight into the child's emotional functioning and develop their own maternal affective regulatory strategies, increased internal resources may support the development of balanced maternal representations and attuned parenting. Children, also dealing with the aftermath of IPV, will benefit from the support of a caregiver who can flexibly respond to their needs and address any developing child behavioral problems. Parenting stress may also decrease, and mother and child outcomes improve, allowing for the reinforcement of positive changes to the caregiving system in the difficult context of IPV.

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The Slippery Slope of Birth Trauma

4

Cheryl Tatano Beck

Abstract

In this chapter the author's research program on traumatic childbirth is the focus. The series of 6 qualitative studies bring visibility to the invisible phenomena of the distressing consequences of birth trauma for women. Posttraumatic stress disorder due to childbirth, breastfeeding difficulties, the anniversary of birth trauma, and subsequent childbirth after a previous birth trauma are the unintended events that some women struggle with as they progressed down this slippery slope. The chapter ends on a positive note with mothers' experiences of posttraumatic growth following a traumatic birth.

In this chapter, women's traumatic birth experiences are first described followed by its slippery slope of distressing consequences (Fig. 4.1). These series of unintended

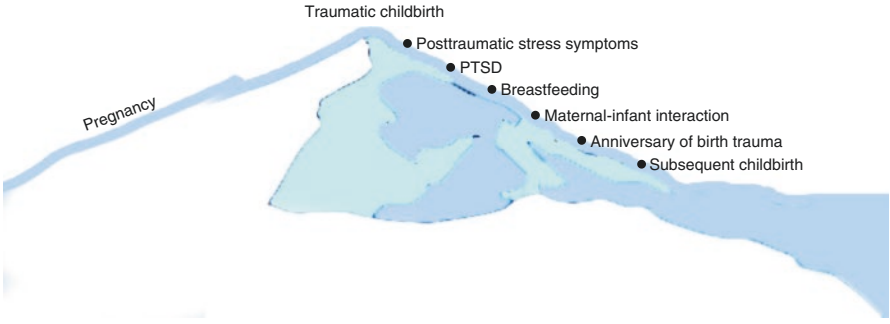

Fig. 4.1 The slippery slope of traumatic childbirth

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events that can occur in some mothers include posttraumatic stress symptoms, posttraumatic stress disorder (PTSD), breastfeeding difficulties, impaired mother-infant interaction, the anniversary of the birth trauma, and subsequent childbirth. The last section of this chapter covers posttraumatic growth in women who experienced traumatic births.

Ayers et al. (2016) conducted a meta-analysis of vulnerability and risk factors for birth-related PTSD in 50 studies from 15 countries. The strongest pre-birth vulnerability factors included prenatal depression, fear of childbirth, poor health or prenatal complications, a history of PTSD, and counseling for pregnancy or birth. During birth, the strongest predictors of PTSD were a negative labor and delivery experience, assisted vaginal or Cesarean birth, lack of support, and dissociation. During the postpartum period, significant risk factors included poor coping and stress and a comorbidity with depression.

Results from another meta-analysis identified the prevalence of postpartum PTSD in community samples to be 3.1% and in at-risk samples 15.7% (Grekin and O'Hara 2014). Significant risk factors in the community samples included current depression, labor experiences with obstetrical healthcare providers, and a history of psychopathology. In the at-risk samples, significant predictors were current depression and infant complications (Grekin and O'Hara 2014).

Traumatic childbirth can be considered a slippery slope which involves "a process or series of events that is hard to stop or control once it has begun and that usually leads to worse or more difficult things" (www.merriam-webster.com/dictionary/slippery). An early example of the use of this metaphor can be traced to 1886 in *The Mirror of True Womanhood: A Book of Instruction for Women in the World*. O'Reilly (1886) used this metaphor when discussing women winning the hearts of their children. When talking about mothers who make no effort to win the love of their children, he wrote "It is not with them we are concerned: they will not be taught or reformed; so, they will go down the steep and slippery slope on which the heartless move, to perdition" (p. 142).

The research reported in this chapter on traumatic childbirth and its resulting slippery slope is part of the author's program of research. All except one of the studies were phenomenological studies conducted via the Internet. An international sample of women was recruited from a notice posted on Trauma and Birth Stress' (TABS) website (www.tabs.org.nz). TABS is a charitable trust located in New Zealand. Mothers who participated in these studies were from the United States, New Zealand, the United Kingdom, and Australia. The sample sizes ranged from 11 to 52 women who had experienced birth trauma.

4.1 Birth Trauma

From her qualitative research on traumatic childbirth, Beck (2004a) found that just like beauty, birth trauma is in the eye of the beholder. How women perceive their birth may be quite different than how obstetrical clinicians view it. Clinicians may view the birth as routine, whereas the mother may view it as traumatic. Beck (2004a)

defined birth trauma as "an event occurring during the labor and delivery process that involves actual or threatened serious injury or death to the mother or her infant" (p. 28). In 2010, Beck amended her definition. In her series of research studies, she had discovered that some women develop PTSD not because they feared for their life or that of their unborn child but rather they perceived their birthing experience as dehumanizing and stripping them of their dignity (Beck and Watson 2010).

Why perhaps could one woman have a severe postpartum hemorrhage and be fine, while another woman could also have a severe postpartum hemorrhage and develop PTSD? One reason offered by Beck is based on her series of qualitative studies on birth trauma. Some women who perceive their births as traumatic have systematically been stripped of protective layers during labor and delivery. As one mother shared, "I am amazed that 3 ½ hours in the labor and delivery room could cause such utter destruction in my life. It truly was like being the victim of a violent crime or rape" (Beck 2004a, p. 32). What could have turned what should be one of the most precious events in a woman's life into a rape scene?

Women described being stripped of their dignity, feeling abandoned and alone, and not respected as individuals. Some mothers revealed that they felt like a piece of meat on an assembly line. The bottom line was that mothers who perceived their births to be traumatic did not feel cared for during labor and delivery. These women were also stripped of communication with their healthcare providers. Often mothers felt invisible as clinicians talked to each other as if the laboring woman were not present as illustrated by the following quote: "When she checked me I was 3 ½ dilated, however, the doctor did not tell me this. She called the nurse to get me a wheelchair and rush me to get an ultrasound. I didn't know what was happening. While all this happened they were talking as if I was not in the room. They were saying something about my baby having an enlarged heart. I think I had a right to be informed just like any other patient."

Many times women reported not being kept apprised of what was happening during the birthing process. Since most mothers were not healthcare professionals, they tended to think the worst when situations were not explained to them. For example, one woman who was in the delivery room needed a vacuum extraction to speed up the birth. The vacuum cap popped off which can often happen. The obstetrician then used forceps to successfully deliver the baby. The problem was that no one communicated with this mother during those few minutes. This mother explained that when the vacuum popped off, she thought that her baby's head had been ripped off his body. This woman developed PTSD with reoccurring nightmares of this scenario.

Another aspect of traumatic childbirth involved mothers' perceptions that what they had to endure to give birth was glossed over and pushed into the background as clinicians, family, and friends all celebrated what they perceived as a successful birth. The infant was alive, with no birth defects, and had good Apgar scores. As this woman disclosed, "I was congratulated for how 'quickly and easily' the baby came out and that he scored a perfect 10! The worst thing was that nobody acknowledged that I had a bad time. Everyone was so pleased it had gone so well! I felt as if I had been raped!" (Beck 2004a, p. 34).

Beck (2006a) conducted a second study on birth trauma and this time used a narrative analysis design. Narrative analysis allowed the sequence of a series of events

that occurred during labor and delivery to be kept together and revealed the multiple traumatic experiences each woman endured during childbirth. Using Burke's (1969) method of narrative analysis, the most problematic ratio imbalance for mothers during birth trauma was the interaction of the act with agency, that is, how the act was performed to the women. Below is one such example provided by one woman who was laboring to give birth to her infant who had died in utero:

> My husband went to get the nurse. The nurse said, you have only just had the gel, you couldn't be having IT yet. I said, yes. She is about to be born. The nurse checked and the head was visible. She looked shocked and said wait. I'll have to get a dish and returned with a green kidney shaped dish. The way she held the dish and the look on her face, I knew she did not want to be in the room. My husband held the dish for her. I then gave a little push and my daughter (still in her little sack) slipped quietly in the dish. The nurse took the dish from my husband and covered my daughter with a sheet. She then walked off without saying a word about where she was going. I called to her. Where are you taking her??? (I had not even seen her properly as she was still in her sack). The nurse said, I have to take IT to the doctor. She wants to see IT. Also the nurse continued to refer to me by my last name, not my first name. I said but I want to see my daughter. She said, Why? IT'S dead. She then said I have to get someone to wash IT so IT can be examined. (Beck 2006a, p. 461)

The uncaring way clinicians performed activities with women during childbirth supported earlier findings of Beck's (2004a) phenomenological study of birth trauma.

4.2 PTSD Due to Childbirth

In Beck's (2004b) research on PTSD following a traumatic childbirth, five themes were identified that together described the essence of PTSD in new mothers (Fig. 4.2). Women repeatedly experienced uncontrollable intrusive thoughts of their traumatic births. Mothers described this as having loop tracks in their brains that had the movie of the birth trauma on automatic replay. As this mother described, "Everything that happened during my emergency cesarean runs and reruns during the day in my mind like a horror movie. I see the nurses' and doctors' faces. I also wake up screaming and crying at night because of the nightmares."

Numbness and detachment were other features of PTSD in new mothers. This woman who had a terrifying experience giving birth to her twins admitted, "I found the easiest way to deal with things was often to just shut down, to drag myself once more through the day. I cuddled my babies, read to them, and cared for their every need except for their emotional needs."

While struggling with PTSD, some mothers experienced a trio of dangerous emotions of anger, anxiety, and depression which at times spiraled up to rage, panic, and thoughts of ending their lives. Women's dreams of what they had envisioned new motherhood would be like were shattered. Just as anyone with PTSD, efforts were made to avoid reminders of the trauma. For women, this entailed avoidance of reminders of motherhood which led some women to isolate themselves from other women and babies and also to their own infants. This woman suffered through a

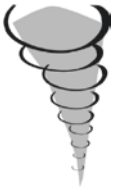
Theme #		Theme
1		Going to the movies: Please don't make me go!
2		A shadow of myself: Too numb to try and change
3		Seeking to have questions answered and wanting to talk, talk, talk
4		The dangerous trio of anger, anxiety, and depression: Spiraling downward
5		Isolation from the world of motherhood: Dreams shattered

Fig. 4.2 Five essential themes of PTSD due to childbirth (Reprinted with permission from Beck, C.T. (2004b). Posttraumatic stress disorder due to childbirth: The aftermath. *Nursing Research*, 53, p. 220)

severe postpartum hemorrhage 3 years earlier, and as this quote captures she is still struggling to connect with her child:

> My child turned 3 years old a few weeks ago. I suppose the pain was not so acute this time. I actually made him a birthday cake and was grateful that I could go to work and not think about the significance of the day. The pain was less, but it was replaced by a numbness that still worries me. I hope that as time passes I can forge some kind of real closeness with this child. I am still unable to tell him I love him, but I can now hold him and have times when I am proud of him. I have come a long, long way. (Beck 2004b, p. 222)

Beck (2016) conducted a metaphor analysis of mothers' descriptions of their PTSD due to birth trauma. This was a qualitative secondary analysis of the data in Beck's (2004b) original study. The Praglejaz Group's (2007) metaphor identification procedure was the method used for identifying metaphors used in the women's narratives. Nine metaphors portrayed PTSD following a traumatic birth as a mechanical robot, a ticking time bomb, an invisible wall, a video on constant replay, an enveloping darkness, a dangerous ocean, a thief in the night, a bottomless abyss, and suffocating layers of trauma. These metaphors were used by mothers to help express more effectively what they were experiencing with their PTSD. Metaphors can provide rich insight into this anxiety disorder and help healthcare providers to identify women struggling with PTSD.

4.3 Impact of Birth Trauma on Breastfeeding

Women's experience of breastfeeding following birth trauma was a tale of two pathways (Beck and Watson 2008). Their experiences led mothers down two strikingly different paths: one propelling women to persevere in breastfeeding and the other impeding their breastfeeding attempts (Fig. 4.3). Factors women revealed that either promoted or impeded breastfeeding are portrayed as weights on the scale in this figure. Women could have any combination of these factors that could tip the scale in one direction or another.

First looking at the three factors that helped facilitate breastfeeding on the left side of the figure, women repeatedly explained that they needed to prove to themselves and their family and friends that there was something about motherhood that they could do right. They felt they had failed at giving birth, so what was left regarding motherhood that they could succeed at was breastfeeding. Women going down this path displayed sheer determination to succeed as this mother shared, "I think my failure to have the perfect delivery did influence my decision to stick at breastfeeding as I didn't want to fail again. I don't know how I would have been if I had had the textbook delivery I wanted, whether I would have persevered with breastfeeding or not." After giving birth by an emergency Cesarean, a primipara stated that "the way I gave birth made me want to try harder at breastfeeding, so I could share with other mothers at least one of the aspects of birth. Because I could not talk about birth, I could talk about feeding."

Mothers felt they had to atone to their infants for their "mortal sin" of the traumatic way their babies were brought into the world. Mothers were driven by their need to make amends. After an unsuccessful vaginal birth after Cesarean (VBAC) attempt, one multipara underwent a repeat Cesarean delivery. As a way to make amends to her daughter, the mother said, "I couldn't give her (or myself) the deserved rightful birth, so the best I can do is give us the shared joy of nursing." In another delivery, a shoulder dystocia occurred. This mother recalled that "after 4 minutes of pushing and pulling we all heard a crack and my baby was delivered. Her right humerus had broken." She went on to explain that she had "a huge amount of guilt over what her daughter went through and felt I HAD to breastfeed her to try and make it all up."

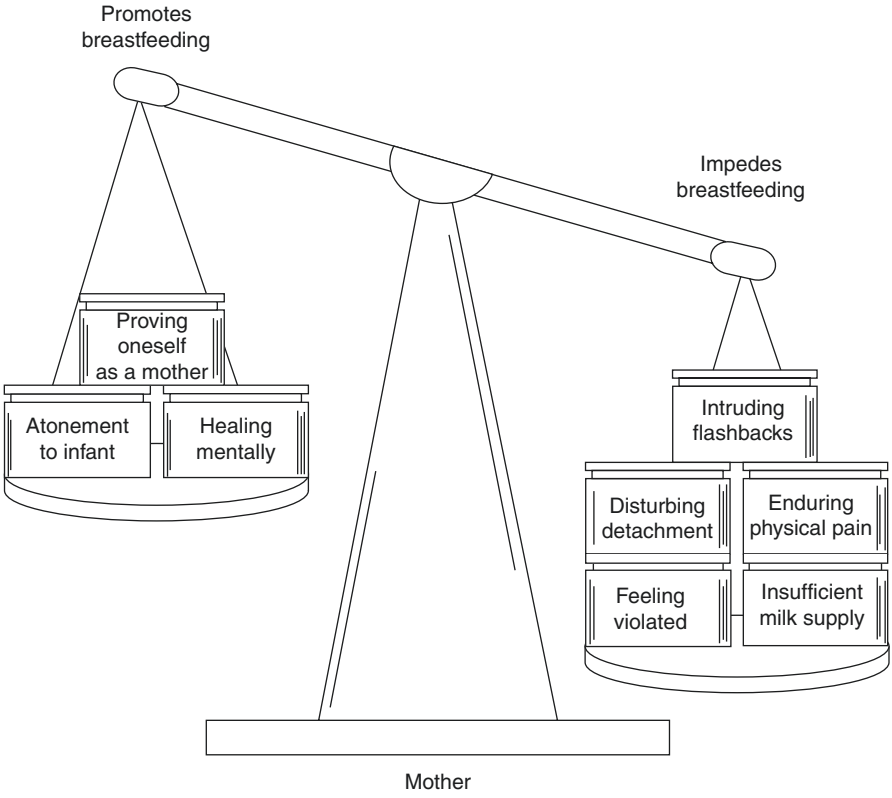


Fig. 4.3 Breastfeeding scale (Reprinted with permission from Beck, C.T., & Watson, S. (2008). Impact of birth trauma on breast-feeding: A tale of two pathways. *Nursing Research,* 57, p. 232)

For other women, the time spent with their infants while breastfeeding helped them to heal mentally. As this mother who delivered prematurely and whose infant was in the NICU revealed, "Breastfeeding was particularly important to me, because I felt disempowered that I, her mother, was not the best person to care for her. It was the nurses and doctors who could keep her alive. I knew that breastfeeding, the best food for her, was something only I could do. It helped me heal and feel connected to her."

The remaining five factors on the right side of Fig. 4.3 hindered women's breastfeeding attempts. One of the strongest factors involved women trying to protect their breasts from being just one more thing to be violated. Women frequently used the image of feeling raped on the delivery table during their traumatic births. As a result, they became vigilant in protecting their bodies from being further violated. After having suffered through multiple miscarriages, this woman finally gave birth to her longed-for live child by means of a Cesarean delivery. She revealed that:

> My experience of childbirth was a painful, poorly managed, and unsupported labor during which I was subjected to painful, impersonal, unwanted and intrusive medical intervention. My requests, comfort, objections and dignity were not observed or considered. I felt as if I had been raped. For me, my experience of breastfeeding was an extension of this violation. It was intrusive, painful, and compromised my dignity.

Attempting to endure the physical pain led some mothers eventually down the path to stop breastfeeding. After a traumatic vaginal birth, one woman admitted:

> I learned my tailbone had broken and my pelvis had been knocked out of alignment. On day 4 we arrived home and in a couple of days the pain was crippling. By the end of each day I would be crying from the pain in my back which was exacerbated by holding the baby and breastfeeding her. I felt terribly guilty for wanting to give up breastfeeding but the nightmare was proving too much for all of us. So my husband and I decided my daughter would be weaned. He would take her into the spare bedroom and try to feed her a bottle of formula while I lay in our bedroom listening to her scream. It was horrendous and precipitated my lowest point when I plunged deeper into depression and began planning suicide.

Due to their traumatic births, some mothers perceived they had an inadequate milk supply to sustain their infants. "My meager milk supply" was frequently recounted by women. During her emergency Cesarean birth, one woman's bowel was perforated. A bowel resection was performed. She stayed in the hospital for 18 days with other complications. She explained, "certainly because of the trauma I experienced, my milk supply never came in properly hence the reason to give up. If my milk supply had come in, I would have continued to breastfeed."

Intruding flashbacks of their birth trauma occurred to some mothers when they would breastfeed. After having an emergency Cesarean birth, this primipara divulged that "when breastfeeding I started having flashbacks and nightmares about the birth in which my baby would be born disfigured or in which I was covered in blood with no baby. This affected my breastfeeding as it would sometimes happen directly after a letdown."

Another factor tipping the scale toward impeding breastfeeding involved women feeling detached and distanced from their infants. One multipara developed PTSD due to her emergency Cesarean birth. You can feel the anguish in her words:

> It takes away your soul; there is no feeling, no emotion, and no attachment. All these things have to be relearned. Breastfeeding was just one of the many things I did while remaining totally detached from my baby. How sad is that. It is supposed to be a natural way of a mother to take care of her baby. I had breastfed my first daughter with considerable pleasure, confidence, and pride. This basic function was gone now.

After sustaining nerve damage to one of her legs due to a forceps delivery, this primipara described a striking image of what it was like to try and breastfeed:

> How I felt when I tried to breastfeed while in a traumatized state was numb and distant from my baby, unable to focus, and concentrate. It felt like having to try and learn to knit while still trapped inside the wreckage of a car accident. With formula feeding, I could eat least have others help me feed the baby.

4.4 Anniversary of Birth Trauma

Yet another chronic impact of traumatic childbirth on mothers focused on the yearly anniversary of their birth trauma. Beck (2006b) discovered that for women who experienced a traumatic birth, every year at anniversary time they struggle to make it through this time period. Mothers reported that it was not just the actual day of the anniversary, their child's birthday, that was so difficult but also there was a prologue and an epilogue. Women reported that during the days and weeks approaching the anniversary of their birth trauma, distressing emotions such as dread, anxiety, and fear consumed them. Any reminders of their traumatic birth, such as the season when it had occurred, rushed fear through their bodies.

Women struggled with the actual day of the anniversary. Was it a celebration of their child's birthday or the torment of an anniversary? Mothers used a variety of strategies to get through the day. Some women randomly chose a day to celebrate their child's birthday as this quote captures: "We made a cake on a random day. I never told my son it was coming up. I bought him things and wrapped them but he doesn't know what they are for. I kissed him and told him before I went to work Happy Birthday but only when he was asleep" (Beck 2006b, p. 387).

Once the actual anniversary day of the traumatic birth was over, there was the aftermath that mothers had to cope with. Women shared that it left them in a vulnerable and fragile state. The distressing emotions lingered in the post-anniversary phase as this quote illustrates, "As hard as I try to move away from the trauma at birthday anniversary time I am pulled straight back as if on a giant rubber band into the midst of it all and spend MONTHS AFTER trying to pull myself away from it again" (Beck 2006b, p. 387).

4.5 Subsequent Childbirth After a Previous Traumatic Birth

In further examining the chronic nature of childbirth related to posttraumatic stress, Beck and Watson (2010) studied women's experiences of a subsequent pregnancy and birth following previous birth trauma. Pregnancy was filled with distressing emotions like dread, fear, denial, and anxiety. Women had to wait through three trimesters till what they feared the most happened: another labor and delivery. Would this birth be healing or traumatic again? As this woman disclosed, "The 9 months of pregnancy after my traumatic delivery were nine of the longest months of my life! I can honestly say I have never felt so anxious about anything."

For some women, their heightened anxiety during pregnancy escalated at times to panic and terror as this quote illustrates:

> I felt immense waves of panic, terror, and fear as my first birth flooded through me in such detail and with such intensity that I felt as if I were experiencing it again. I was depressed, enraged, and hysterical. I felt hopeless, paralyzed, frighteningly alone and I felt like I was going crazy because my emotions were so consuming.

Throughout pregnancy, women strategized in hopes of making events during childbirth different this time around. Women's motives were to reclaim their bodies and to complete the journey to motherhood that had eluded them with their prior traumatic birth. To help cope during those 9 long months of pregnancy, various strategies were described by the mothers, such as taking yoga classes, hypnobirthing classes, writing in a journal, hiring a doula, and sharing with their obstetrical care providers their previous birth trauma.

In Beck and Watson's (2010) study, three-quarters of the mothers reported that their subsequent births were either a "healing experience" or at least "a lot better" compared to their prior traumatic births. These women described how reverence was brought to their childbirth and they felt empowered. One mother summarized her healing birth as follows: "Ultimately I was treated with respect, dignity, and compassion. In my previous birth I was made to feel like on a production line and that took away the magic that I had dreamed of for those 9 months." One woman who had opted for a home birth this time around shared how it was the proudest day of her life. She went on to explain:

> The morning after my homebirth was one of the best mornings of my life. After having two births where I was hospitalized and unable to get out of bed, it was absolutely incredible to wake up the day after giving birth in my own home and watch my children and husband enjoy the new baby for the first time. It was like Christmas morning after the presents have all been opened and you can just sit back, relax, and enjoy.

Some women did warn that even though their subsequent births were healing, that would never change what happened with their prior traumatic births and how it had affected their relationships with those infants.

Sadly for one-quarter of the women in Beck and Watson's (2010) study, their longed-for healing birth still eluded them. Some of the reasons why that occurred included (a) a home birth where the mother hemorrhaged and had to be transported to the hospital by ambulance, (b) a mother who had severe preeclampsia and gave birth to her son prematurely by emergency Cesarean, and (c) a necessary repeat Cesarean birth after an unsuccessful VBAC attempt.

4.6 Posttraumatic Growth Following Birth Trauma

Posttraumatic growth is defined by Tedeschi and Calhoun (2004) as "the positive psychological change experienced as a result of the struggle with highly challenging life circumstances" (p. 1). These positive changes in one's beliefs or life are not a direct consequence of the traumatic event but rather the consequence of the individual's struggle in attempting to cope or survive in the aftermath of the trauma. Tedeschi and Calhoun (1996) identified five dimensions of posttraumatic growth: appreciation of life, relating to others, personal strength, new possibilities, and spiritual change. An individual can experience growth in some of these dimensions but not necessarily in all of them. Even in posttraumatic growth, the trauma does not go away but still remains a distressing event in posttraumatic growth. Posttraumatic

growth can coexist with the traumatic distress. Not all persons who experience a traumatic event will also experience posttraumatic growth.

Beck and Watson (2016) examined posttraumatic growth in mothers who had experienced traumatic childbirth. In this study, women were asked to describe any experiences they had of positive changes in their beliefs or life as a result of struggling with the aftermath of their birth trauma. Using Colaizzi's (1978) method of phenomenological data analysis, four themes emerged. Posttraumatic growth may not prevent further traveling down the slippery slope but can provide women struggling with the aftermath of their birth trauma that there is hope that something positive in their lives can come out of this.

Theme 1 was entitled *Opening Oneself up to a New Present.* Women repeatedly shared that their surviving and coping with their birth trauma made them stronger persons. As this mother explained, "In spite of everything I have endured, I have taken every one of those kicks while I was down, those damaging blows, those sucker punches from behind, those bricks hurled at me, and I am still standing. I am sharper, stronger, more balanced, more focused more powerful than before, because of what I have endured."

Increased trust and confidence in women occurred in posttraumatic growth. As one participant revealed, "I can take care of myself and my children. I now know and have all we will need. I am enough. I have enough." There was a confirmation of mothers' own psychological strength. Women now realized they could be very strong and that they won't fall to pieces in a crisis. "It had been scary but I had come though it relatively unscathed. It hadn't broken me. So there was a certain personal confidence building element." During the process of posttraumatic growth, mothers learned to value themselves and their needs. "It was a slow, agonizing journey to valuing myself, trusting myself again, remembering that I do matter. I do have value. My needs are okay and that it is okay to ask for and receive what I need."

Theme 2 involved *achieving a new level of relationship nakedness*. Communications opened up between women and their partners and other family members. One woman shared that "there was now a closer union. There was a warmer co-dependency between us. I had seen and felt his love and his fear of losing me. It is a different kind of bond now, perhaps more secure." Women described that they and their husbands now have a greater desire to protect each other and confide in each other. Another woman revealed that she learned "to sit with vulnerability. Something I had seen as weakness in the past. Vulnerability is not weakness. It is an opportunity to let something new in. I allowed myself to be vulnerable and to allow my husband to take on a role he had never been allowed to before. He was allowed to care for his wife, and I allowed myself to be cared for. I've never felt as close to him."

One woman shared a chorus for a song she had written to her husband letting him know how much his support during her struggles with her traumatic childbirth meant to her:

Your my comfort and strength when I'm all alone
I get lost in the world but you guide me home

I know now who you are, you're my shining star
I was frozen with fear now I'm moving on
Feeling weak and afraid now I'm gonna be strong
No matter where you are, cause you're my shining star
No matter where you are
In our hearts we won't be far
You're my shining star
Be strong, keep holding on
Be positive and patient; it won't be long
Be strong, be strong.

Theme 3 captured mothers' *fortifying spiritual mindedness*. The following excerpt from a mother's narrative illustrates these positive changes in her spiritual growth: "I have seen much growth in my own life as I have wrestled with my traumatic childbirth. My growth is firmly rooted in my Christian faith and living relationship with Jesus Christ." Another woman shared that "my Christian faith gave me hope, security, and trust knowing that everything does work for good."

Theme 4 focused on mothers *forging new paths* in their lives. After experiencing a stillbirth, this woman shared "this experience changed my life and gave me the drive to move forward each day in order to honor my son. He is the reason I am studying towards a bachelor of nursing degree (graduate this year). He gives me strength which I hope to one day soon pass on to my patients. Upon graduation I wish to work as a NICU nurse and support and guide my little patients/families through the difficult times."

In addition to nursing, midwifery was another choice for advanced education. This woman admitted that studying midwifery re-triggered a lot of her fears about childbirth. She explained that while being in the delivery room in her clinical rotation, she felt like she was reliving her own traumatic birth while she was supposed to perform professionally for others. "Despite my mind wanting me to run away, the power of prayer and my passion for midwifery kept me going. So I stayed and pushed through day after day facing different fears as they reared their ugly head. The day I graduated midwifery was one of the biggest achievements of my life (other than birthing my three beautiful children). Only God truly knows what I went through mentally and emotionally to get there! I proudly can say I am a registered nurse and midwife".

Conclusion

This chapter alerts obstetric, pediatric, and family practice clinicians to multiple places along a mother's slippery slope after traumatic birth where interventions can occur to prevent their further downward slide: the postpartum period, breastfeeding, yearly anniversaries, and subsequent pregnancy and birth.

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Reproductive Loss and Its Impact on the Next Pregnancy

5

Irving G. Leon

Abstract

Reproductive loss is identified as a unique loss due to the mother's relationship to the fetus or baby she didn't get to know. Elements of this loss are discussed as are the differences among the range of reproductive losses. While much of the research and clinical literature focuses on normative or maladaptive grieving, many of the ingredients of resilience–including making meaning, continuing bonds, posttraumatic growth, and having a positive and active engagement in life–are elaborated. Many clinical suggestions are offered, especially the challenges of supporting the mother in the often anxious pregnancy following this loss. An empathic responsiveness to the mother's distress and concerns is cited as the critical ingredient in whatever interventions are chosen

5.1 Introduction

Reproductive loss[1] is a distinct traumatic event. It is not based on the threat to one's physical self or that of another who was known, but it is the loss of someone not yet born or known, but still very much loved. Utilizing both scientific state-of-the-art knowledge and the author's over 25 years personal clinical experience in working with this patient population, this chapter explores what makes reproductive loss a

[1] Reproductive loss refers to the range of pregnancy losses (e.g., miscarriage, ectopic pregnancy, perinatal loss, stillbirth, intrauterine fetal demise, and pregnancy termination for fetal anomaly or elective abortion), as well as infertility, neonatal loss, and a birth parent loss of an adopted child.

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unique loss, the many forms it takes, predictors of adaptive or problematic coping and outcomes, what components of resilience can be mobilized to minimize prolonged distress, and the impact it often has on a subsequent pregnancy and postpartum. Clinical suggestions and tips for practitioners will be offered throughout the chapter to aid medical caregivers and mental health providers in addressing the needs of bereaved mothers and the whole family. This chapter starts with a description of the many aspects of reproductive loss, moves on to describing the various factors influencing coping and resilience, and finishes with elaborating on interventions and regaining one's reproductive life after the loss.

5.2 The Many Facets of Reproductive Loss

Reproductive loss can traumatize in the usual sense of overwhelming one's coping capacities, leaving one feeling terrified, helpless, and unable to internally process what has occurred. Inundating one's emotional circuits, classic posttraumatic stress disorder (PTSD) typically results in attempts to assimilate the event through reliving it in dreams, flashbacks, and other reenactments, being in a heightened state of arousal with increased irritability and insomnia, and avoiding cues associated with the event and being overwhelmed (Herman 1992). Unlike most other trauma, reproductive loss usually doesn't involve violence committed by another person. This may help explain why, in my experience, bereaved mothers do not demonstrate the detachment from others, as typically happens among those who have survived violent trauma such as rape, physical abuse, and combat casualties. In a safe setting, after some time has elapsed, the bereaved mother is often ready to share the details of her painful loss, allowing an opportunity to process it as well as to rapidly facilitate a bond with a caregiver who is prepared to empathically listen.

Reproductive loss can be traumatic in another manner. It can violate the schema we use to organize our place in the world, leaving "shattered assumptions" (Janoff-Bulman 1992) in its wake. The ways we are accustomed to viewing the world as safe, just, predictable, and benign no longer apply (Janoff-Bulman 1992). We are compelled to search for a new sense of meaning, understanding, and purpose to guide our actions (Neimeyer 2000). Reproductive loss can present a particular challenge to a sense of fairness and justice in the world because babies are not supposed to die. The natural order is upended when parents bury their offspring, not the usual other way around. Caregivers need to be able to absorb and not contest the outrage parents can feel when their world has been shattered. A father may be especially susceptible to feeling furious and helpless, not being able to protect his wife from this grief by being dealt with a tragedy that he can't solve.

In many ways these losses are like no other (Leon 1999). It is extremely difficult to grieve someone you love but never got to know. Both the shock and ambiguity (Lang et al. 2011) of these losses can make them seem unreal. For these reasons, it can be especially valuable to encourage parents to see, hold, and get to know their deceased baby (Gold et al. 2007) in order to make the loss more real, provide memories to facilitate grieving, and, for many, identify the loss of a named family member, as a son or daughter.

Most losses entail the intolerable absence of what has been, that is, the possibility to retrospectively recall past memories of the beloved. Reproductive losses are almost entirely a prospective eradication of the imagined future with one's child which now will not be. Even after the initial intensity of grief has subsided, a "shadow grief" (Peppers and Knapp 1980) persists at a lower ebb, temporarily heightened during anniversaries such as the due date or the birth/death date. It can be helpful for bereaved parents to know this is normal. It is not a harbinger of unresolved grief but a natural reawakening of mourning their lost child who is not there when she should be but is never forgotten.

While most friends and family appreciate the death of a family member as a loss worthy of mourning, for many a reproductive loss is minimized or disenfranchised (Lang et al. 2011) as not a genuine loss warranting grief. Bereaved parents are told to "forget about it" and "have another baby," as if such a loss can be so simply discarded or replaced in a manner that would never be suggested for the death of an older child. Caregivers may lighten these blows by anticipating with bereaved parents that such painful comments are usually motivated by ignorance rather than malevolence, modeling the unfortunate but necessary need to educate friends and family about what support is helpful to them and what hurts.

Reproductive loss is typically an assault upon the self, resulting in a blow to one's self-worth, particularly for the woman who so often feels her body (i.e., she) has failed (Leon 1990). Self-blame may be mitigated by finding an identified cause as well as by challenging irrational self-blame by cognitive restructuring (Kersting et al. 2011). Reproductive loss can constitute multiple attacks on self-worth (Leon 1990). The sense of omnipotence embodied in pregnancy, a vital expression of her femininity, and a defiance of mortality by projecting oneself genetically into the next generation can all be shattered by these losses. In addition to the grieving of a lost child, there is an additional dimension of grieving: lost potential and accepting the fragile vulnerability of life and limitations of mortality. At least in the immediate aftermath of these losses, women need to find other capacities to anchor their self-worth.

Because the identity of the reproductive loss is so diffuse and ill defined, it may be much more likely that this loss can revive or be conflated with prior, particularly unresolved, deaths of another child, parent, or other beloved figures (Leon 1990). This is often the case when grieving is unrelenting, showing no alleviation after a year. A previous unresolved loss may need to be reconciled first before the reproductive loss in the here and now can be addressed (Leon 1990).

Finally, reproductive loss can constitute not only a discrete loss but a disruption in the normal adult developmental stage of parenthood (Cousineau and Domar 2007). Many couples whose desire for parenthood has been thwarted by pregnancy loss and/or infertility describe feeling stuck and offtrack, as if they are running in place but getting nowhere. Interpersonal isolation compounds their sense of internal stagnation. They feel estranged and alone, cutoff from family and friends who are moving on with their lives by having children and forming families of their own. Not surprisingly, many studies report heightened grieving of reproductive losses when there are no live children (Lasker and Toedter 2000) as well as an alleviation of grief with a subsequent healthy baby (Lasker and Toedter 2000; Brier 2008). Because intolerable envy, hurt, and anger are so often evoked for bereaved mothers

in the presence of infants or other pregnant women, caregivers should normalize such natural reactions and encourage avoiding those situations until the intensity of emotions has diminished.

While reproductive losses share the attributes discussed above, it is necessary to at least briefly distinguish how these losses differ among each other. More has been written about perinatal loss (defined as death after 20 weeks gestation until 7 days postpartum) than any other reproductive loss, even though its mortality rate is under 1% of all pregnancies in 2013, having decreased fourfold since 1942 (McDorman and Gregory 2015). Ironically, ectopic pregnancy, the reproductive loss least researched for its psychological impact, has a mortality rate of 2%, twice as that of perinatal loss, and reported to elicit grief as intense as that of perinatal loss (Lasker and Toedter 2003). The revolutionary change in the hospital care for perinatal loss in the past 35 years ushered in the modification of practice for all reproductive losses. Whereas in 1980 it was customary for hospitals to deny bereaved parents seeing or holding their babies, discouraging discussing or grieving this loss, advising having another pregnancy as soon as possible, and dispensing psychotropic medication to ease the emotional pain, every one of those recommendations has changed 180°. Now parents are encouraged to see, hold, and, if they wish, name their babies who died, facilitating rather than blocking grief, encouraging marital emotional sharing, and suggesting to postpone pregnancy until this loss has been sufficiently grieved. Despite substantially improved satisfaction with in-hospital care following perinatal loss (Lasker and Toedter 1994), nurses are generally perceived as the most supportive caregivers, with physicians viewed as the least (Gold 2007).

Miscarriage, defined as a pregnancy loss before the 20th week of gestation, is not infrequent (from 15 to 20% of clinically recognized pregnancies) but commonly misperceived as being more rare (about 5% or less of pregnancies) while erroneously and commonly perceived to be caused by stress (over 75%) or lifting a heavy object (64%) (Bardos et al. 2015). With the use of more frequent and higher-quality ultrasound, a woman's maternal-fetal attachment is heightened, thereby encouraging the loss to be viewed as more like that of a baby. Satisfaction levels of caregiver support for miscarriage tend to be lower than those measures for perinatal loss (Lasker and Toedter 1994), perhaps due to the variable experience of this being the loss of a baby or fetus, making it more difficult to establish a consensual hospital protocol as used for perinatal loss. Providing options for couples in how remains are treated and/or seen may go a long way in allowing parents to feel less helpless and aiding their determining for themselves what or who was lost (Limbo et al. 2010).

Infertility, inflicting about 15% of American couples (Cousineau and Domar 2007), tends to amplify all the discussed attributes of reproductive loss (Jaffe and Diamond 2011). Because there is no death, it is ambiguous, not often recognized as a bona fide loss with the couple feeling disenfranchised (Lang et al. 2011). It is much less real than discrete reproductive losses as there is no baby to grieve, except for the more nebulous imagined child. If permanent, it is the total loss of one's wished-for biological family. Friends and family are often unhelpful or misguidedly hurtful, minimizing its profound repercussions, assuming hi-tech interventions are bound to work although only 50% of those who pursue assisted reproductive

techniques (ART) ever have a live birth (Cousineau and Domar 2007). Assaults on the self can sometimes be repaired in a later successful pregnancy. While adoption enables family formation, it can permanently disrupt the traditional and normative developmental step of having biological children.

Finally there is a constellation of three reproductive losses that are all stigmatized, probably because they are all "volitional." However, each situation constitutes an unwanted crisis, resulting in a decision often made under extreme duress with both internal and external conflict. Whatever is chosen is undesirable, only less intolerable than its alternative. Pregnancy termination for fetal anomaly (PTFA) involves ending the very much wanted pregnancy of a very unhealthy or dying baby. While this decision often evokes grief and distress comparable to perinatal loss, empathic support before, during and after the termination can help coping (Asplin et al. 2014; Lafarge et al. 2013). Additional tasks are required which include processing the traumatic news of having a baby with a severe anomaly, making an often highly conflicted decision under very tight time constraints regarding whether to continue or terminate the pregnancy, deciding whether this is the loss of a baby or fetus, and deciding how open one should be in sharing this situation and decision with others. Elective abortion is the inverse of PTFA, ending a healthy pregnancy that is very unwanted due to circumstances of not feeling able to parent this baby. A large-scale meta-study by the American Psychological Association (APA Task Force on Mental Health and Abortion 2008) reported the vast majority of women who have elective abortion do not have negative mental health consequences. However, the stigma of abortion resulting in keeping great secrecy in not disclosing to others was associated with thought suppression, which led to more intrusive thoughts and greater distress over time (Major and Gramzow 1999). An intervention designed to challenge abortion stigma by validating women's reproductive decisions and identifying abortion misinformation was found to help women reduce their susceptibility to being judged harshly by oneself or others (Littman et al. 2009). Finally it has become increasingly recognized that the secrecy that both magnifies and is a product of the stigmatized disenfranchised grief of birthmothers who relinquish a baby for adoption needs to be forthrightly challenged. These women need to have their grief supported and sacrifice for their child's well-being to be respected (Aloi 2009).

5.3 Coping with Reproductive Loss

Many studies have sought to identify variables associated with more or less severe grief outcomes. Lasker and Toedter's Perinatal Grief Scale (PGS) (Lasker and Toedter 2000) has become the "gold standard" of calibrating the extent of grief following this loss. In their compilation of 22 studies using the PGS, they were able to highlight the most powerful factors associated with more disturbed or prolonged distress: poor pre-loss mental health, poor social support in general and in the marital relationship in particular, being female, longer gestation, recency of loss, and not having a subsequent pregnancy (Lasker and Toedter 2000). These findings

correspond well with our understanding of reproductive loss in its psychosocial context. The strain and distress resulting from these losses become more difficult to bear with more limited coping capacity due to earlier compromised mental health. Social support, especially within the marriage, serves as an important buttress for coping and buffer against stress. The more intimate and bodily relationship with the pregnancy that the mother experiences as compared to the father underscores her commonly greater grief than his. It also explains the amplification of that grief as gestation lengthens along with the baby's greater presence and mother's attachment to her. The nature of grieving with distress subsiding over time explains why this is usually a time-limited process rather than an ongoing pathological state. Finally the developmental disruption and assault on self-esteem resulting from these losses can both be repaired by a subsequent pregnancy.

An important advance over the usual stage model of bereavement in which resolution of grief is based on completing a sequence of phases is the dual process model of coping with bereavement (DPM), a template for grieving which privileges elements of coping as much as aspects of grieving (Stroebe and Schut 2010). In this process, the bereaved oscillates between the dual poles of active grieving and restoration of functioning. Elements of coping include attention to life changes, trying out new things, distracting oneself from grief, and taking on new roles and relationships. These facets of coping are as indispensable to resolving loss as the painful grief work of remembering the deceased and sufficiently detaching in order to find a new place in a changed world (Stroebe and Schut 2010). This model captures the phenomenological sense of grieving as being intermittent, in waves, as one yearns and aches for the beloved, but then shifts, even in the early period of intense grief, to coping in the world of daily tasks, especially parenting surviving children.

Aspects of this model seem particularly suited to explaining reproductive losses. The pronounced gender differences where mothers grieve more intensely with longer duration than do fathers (Peppers and Knapp 1980) are represented in the DPM with the usually greater focus on problem-solving in restored functioning for men, while women predominate at the pole of grieving. Some reproductive losses demand attending very quickly to complicated tasks requiring a rapid oscillation between these poles of grieving and coping. ART for infertility requires rigorous protocols for IVF as coping alternates with the intense levels of distress (the proverbial "roller coaster" of treatment) (Cousineau and Domar 2007) after the initial consultation and learning of unsuccessful treatment. PTFA demands that major, cognitively challenging decision-making over whether to continue the pregnancy with a particular anomaly (Lafarge et al. 2013) oscillates with painfully grieving the loss of the healthy, wished-for but now gone, child.

5.4 Ingredients of Resilience

Within DPM, coping embodies the concept of resilience which itself is an elaboration of the most effective means of coping. While resilience is often associated with a quick recovery (Rutten et al. 2013), it may be more accurately understood as having a course distinct from recovery, without the usual upsurge in grief and distress

at the time of loss (Bonanno 2008). In fact, the expected trajectory of mourning as initially intense grief followed by subsiding is reported less than 50% of the time in a sample of perinatal loss (Xiaoqin and Lasker 1996) and is nonnormative among studies of loss and trauma in general (Bonanno 2008). Resilience may define a common response to adversity in which there is a sustained stabilization of functioning from the outset (Bonanno 2008) or even gains in certain areas constituting "post-traumatic growth" (Tedeschi and Calhoun 2008). As we explore the elements of resilience or optimal coping, we should remember that there are diverse, multiple combinations which traverse very different roads in reaching a positive outcome (Rutten et al. 2013; Bonanno 2008). In the following paragraphs, I will describe the ingredients of resilience after perinatal loss, all of which are well documented in the literature and well appreciated in my clinical practice.

Making Meaning of the Loss Recognized as a fundamental task in processing loss (Neimeyer 2000), as well as a pillar of resilience in the broader sense of finding a purpose in life (Rutten et al. 2013), the success of this search for meaning has been associated with significantly lower grief scores among parents who suffered a perinatal loss (Uren and Wastell 2002) or the death of an older child (Lichtenthal et al. 2010). Clinically this can take many different forms. A profound arbiter of meaning in life, one's religious or spiritual beliefs, may bring comfort in religions, which preach acceptance of the will of God (Allah in Islam) or *taking solace in spirituality*. For those who often view major events as either signs of God's rewarding or punishing (frequently among Christians and Jews) or as an inevitable, natural unfolding of a higher (spiritual) universe, such a loss may cause a profound estrangement from God or a previous benevolent world view, requiring a lengthy search for new meanings and reconciliation with God or one's own spiritual self. It is not up to caregivers (or clergy or therapists) to offer simple or pat answers, rather to provide a containing and safe place to make the search for meaning less lonely. Infertility may be better accepted if one is able to take an active role in shaping one's "reproductive story" or narrative of loss and resolution (Jaffe and Diamond 2011). Many women who suffer early miscarriage experience this as not the loss of a baby but an affront to one's procreative identity as a woman. Gently encouraging—not micromanaging—her creative impulses in sharing how many women find some satisfaction in embodying an ambiguous loss in words, music, sculpture, painting, etc., may be helpful.

Continuing Bonds In contrast with a grieving model in which one relinquishes one's connection with the deceased, in reproductive loss attachments may be maintained post-loss along with optimal adjustment to the new external reality (Uren and Wastell 2002). Cote-Arsenault (2003) elaborates the multiple ways it is possible to maintain the maternal relationship to her baby through rituals, symbols, having a visible presence in the home, holding a permanent place in the family, and maintaining lifelong impressions of the baby. Perhaps more than any other death, reproductive losses are so intertwined with the future, continuing that bond may be necessary for many in order to accept the baby's physical absence. At the same time, sustaining such an ongoing bond may be particularly difficult with these losses due to the

absence of more natural memories as opposed to the planned construction of memorials, mementoes, and rituals associated with the baby. Paradoxically, the flip side of the mother's sadness in fantasizing how the growing up missing child might appear on each birthday is her celebration on that day of her creation and ongoing internalized bond. Medical and mental health providers should neither mandate nor discourage the parent who "holds on" to the relationship with her child while supporting that connection when it is made. However, that bond may become maladaptive if it replaces and deters enriching relationships in the external world. Stigmatized losses such as elective abortion, PTFA, and relinquishing a child for adoption that women have "chosen" in crisis states should be considered as babies to be remembered, honored, and not denied or forgotten if the woman more freely chooses to do so under less terribly pressured circumstances. Even in infertility when there is no actual child to grieve, the fantasized wished-for biological child may be remembered and mourned if so needed.

Secure Attachment The lifelong ability to maintain enduring relationships in which one can enjoy intimacy as well as tolerate separation is a powerful source of resilience in and of itself (Rutten et al. 2013). It may also enhance other attributes of resilience and serve particularly important purposes in coping with reproductive losses. Secure attachment is the hallmark of strong social support within and outside the marriage as well as promoting self-regulation of affects (Rutten et al. 2013). The former asset is a critical variable in buffering grief, while the latter ensures that grief can be maintained within tolerable limits, decreasing the incidence of trauma. In the context of reproductive loss, secure attachment may also provide a greater sense of coherence and predictability in one's world, promoting the finding of meaning which moderates grief (Uren and Wastell 2002). Finally, continuing bonds may be more possible and stable in the context of the internalized durability of the relationship embodied in secure attachments.

Posttraumatic Growth Resilience may entail not only sustaining effective functioning over the course of the traumatic loss but creating benefits from the event which go beyond recovery (Tedeschi and Calhoun 2008). This may include positive transformations through enhanced spirituality (intertwined with finding new meanings in life) with heightened vulnerability paradoxically mixed with an increased invulnerability (e.g., "if I can survive this, I can survive anything") (Tedeschi and Calhoun 2008). Clinically, finding some acceptance of this tragedy is facilitated by believing some good can come out of it. Often this is appreciation of the many good things one has in life (especially existing children) as well as a deeper altruistic compassion for others who have or will go through such losses. It is quite common for bereaved parents to establish memorial funds in the name of their child (again, continuing that bond) to help in some way other parents who will follow in their footsteps. It is extremely helpful when something positive comes from this loss, sometimes taking the form of parents feeling their deceased child taught them a more profound meaning of love. Such benefit finding is significantly associated with a lowered incidence of complicated grief (Lichtenthal et al. 2010).

Positive Emotions in Life The ability to sustain positive affect in one's self-confidence as well as life in general is an important source of resilience (Rutten et al. 2013; Bonanno 2008). This attribute can be significantly enhanced through interventions applied in the "positive psychology movement" which include demonstrating gratitude, appreciating positive events, and identifying one's particular strengths and accomplishments (Seligman et al. 2005). Meditation may also increase well-being by tuning out distress emanating from thoughts about the past and anxiety about the future in mindfully focusing one's awareness on the fullness of the present (Rutten et al. 2013). Components of maintaining positive emotions include an adaptive denial or diminution of adversity (repressive coping) and the appreciation of laughter, both of which shield one from the dysphoria of traumatic losses (Bonanno 2008). It is very encouraging when in the midst of intense grief, a couple can momentarily laugh, for example, over a playful name assigned to a pregnancy, based on the locale of conception, which later miscarried. By providing emotional distance, laughter can offer a welcome respite from the suffering of grief. For many whose grief and often guilt abate sooner than expected after the loss, it can be very comforting to reassure them that this is normal and they need not feel bad when they return to feeling more often happy again.

Gaining Active Control The concept of hardiness, sometimes used synonymously with resilience, is predicated on experiencing personal control and efficacy as well as an active orientation to the world, both of which promote a sense of mastery of adversity, diminishing traumatizing helplessness (Lang et al. 2001). This often entails an attitude which welcomes challenges as new opportunities to grow and transcend adversity (Tedeschi and Calhoun 2008; Lang et al. 2001). A passive, acquiescing submission to harsh events often leads to feelings of being victimized and helpless, frequent antecedents to depression (Seligman et al. 2005). With disenfranchised and stigmatized reproductive losses—elective abortion, PTFA, and relinquishing a child for adoption—the more actively engaged the woman can be in the decision-making, feeling entitled to grieve for whatever loss is experienced and ultimately feeling responsible, not self-blaming, can facilitate reconciliation with the loss (Lafarge et al. 2013; APA Task Force on Mental Health and Abortion 2008; Aloi 2009).

Timing is critical when one seeks to clinically apply these facets of resilience. It would be quite destructive to encourage "adaptive" denial when a mother is in the midst of intense grief. It will be possible, instead, to reinforce her wish to stay connected with her baby perhaps by offering examples of what other couples have done; a caregiver or therapist may adopt a more playful tone when the client has demonstrated an enjoyment of humor. Empathy should guide what aspects may be offered when (or if at all) rather than using this as a list for a manual that is applied universally.

5.5 Interventions and Adaptations

Multiple approaches may incorporate ingredients of resilience, thereby easing the distress of reproductive loss and deterring it from becoming a more intractable condition. "Talk therapy" may facilitate finding a new restorative meaning of the loss

and promote a comforting continuation of the bond with the deceased baby as the bereaved parents are embraced by the therapist's empathic understanding and soothing, fostering a secure adult attachment (Jaffe and Diamond 2011). Cognitive behavioral therapy may encourage a new challenge in examining the more painful memories of the loss while supporting positive learning which has occurred (Kersting et al. 2011). Internet support groups offer an opportunity to find crucial social support, mitigating the terrible sense of feeling alone and disenfranchised, and offering positive models of "moving forward" (Gold et al. 2012). Especially when the trajectory of distress is extended, as in infertility, tools such as stress reduction and meditation along with the positive coping methods advanced in psychoeducation provide active means to diminish suffering (Cousineau and Domar 2007). Psychotropic medications, especially antidepressants, may be helpful when a prolonged grief increasingly becomes clinical depression. However, for the vast majority of people struggling with normative, even intense, grief, medication is not necessary.

For many women the pregnancy following a reproductive loss constitutes a challenge. Aptly titled *One foot in-one foot out*, Cote-Arsenault and Marshall (2000) describe the pregnancy following a reproductive loss as caught between a cautious "hoping for the best," while, terrified of the prior loss being repeated, "expecting the worst." A meta-study of the literature indicated it was quite common for this pregnancy to be marked by anxiety and depressed feelings (DeBackere et al. 2008). The pregnancy may be announced tentatively and quietly and not shared with most friends and family until the first trimester has passed. The frequently delayed and muted attachment during this pregnancy (DeBackere et al. 2008) is clearly not a function of how much the baby is wanted but often an anticipatory mourning designed to prepare the mother for a more expected and less traumatizing death. Especially when there have been multiple prior losses, there is often a conviction that this pregnancy promises the same fate and she wishes the tension will end.

Being pregnant again in itself often reawakens the grief over the last loss (Cote-Arsenault and Marshall 2000), intensifying sadness which had become subdued. Guilt becomes a frequent visitor no matter what she does. There may be guilt over fearing she has forgotten and betrayed her prior loss if she begins to feel excitement over this new potential life. Then there may be guilt if she sometimes grieves her earlier loss, feeling she is depriving her new potential life of all the devotion he deserves. Anniversary reactions can be profound, sometimes providing relief, other times dread. Approaching the gestation in the next pregnancy when the last one was lost typically heightens anxiety, while passing that milestone often signals a temporary easing, although usually a lasting calm will only come when her new baby is safely in her arms.

Support, whether it comes from a partner, friend, extended family member, caregiver, or therapist, is most meaningful and helpful in the form of empathy enabling the mother to feel understood and not alone. Just as empathic care is considered a fundamental basis for support when one is going through a reproductive loss in the hospital (Gold 2007), this understanding will help her get through this crisis by being where she is at (Cote-Arsenault and Marshall 2000). Repeated reassurances, often delivered by medical caregivers, may be unhelpful if they feel dismissive, as if her concerns are not taken seriously. Even if rationally chances are significantly

in her favor for a good outcome, her empirical experience (a rational basis for predicting the future) tells her otherwise. What can be very helpful and supportive is allowing extra visits with ultrasounds during particularly anxious times.

The mother may also need to be prepared for (or debriefed after) well-meaning friends and family trying to talk her out of her worries, offering often unhelpful advice or comments ("Try not to think about it." "If you worry too much it might harm the baby." "Are the doctors sure it won't happen again?"). Even her husband or partner may feel it is his job to get her to "snap out of it," not realizing that simply listening to her concerns, letting her ventilate her feelings, and hugging her to demonstrate he is there for her may be the most effective approach.

For caregivers and clinicians, it can always help to normalize these powerful, conflicting emotions leading her to fear she is "going crazy" when she is entirely sane. These reactions are not a disease that needs to be treated and cured but a time-limited crisis to be managed as comfortably as possible. Many of the sources of resilience presented earlier may be productively mobilized in this situation such as making sense of her intense feelings, finding the potential for growth in this experience, and actively engaging with caregivers rather than submitting passively and helplessly.

Finally, if the pregnancy ended successfully with the birth of a child, there is adaptation to the postpartum period. The experience of her entry to motherhood and her parenting attitudes may be colored by her previous reproductive loss. However, as pointed out throughout the text, there is also great potential for resilience and positive adaptation. For example, one large-scale study found no relationship between pregnancy loss history and later mother-infant interaction (Price 2008). Overall the research examining the infant's postpartum adaptation following a mother's reproductive loss is mixed; one well-designed study reported that stillbirth was associated with the subsequent child having a significantly higher incidence of disorganized attachment, usually provoked by frightened and frightening maternal behavior (Hughes et al. 2001). Importantly, this effect was mediated by the mother's unresolved state of mind in regard to her loss, indicating it was not the mother's stillbirth alone that was injurious to the following child but her unresolved grieving of this loss.

Anecdotally or clinically, my experience does not suggest maladaptive reactions to reproductive loss in the subsequent generation. When postpartum contacts are available, it becomes very clear that the mother's muted attachment to the baby during pregnancy becomes quite robust once it becomes "safe to love." However, this statement may be driven by clinical optimism and biased toward emotional healing. Being a clinical sample, of course, the generalizability of this statement is also limited and unrepresentative. Thus, carefully designed research on intergenerational impact of reproductive loss is critically needed.

Conclusions

Reproductive losses are a distinct category sharing many attributes as well as having important differences among them. Most of the empirical and clinical literature focuses on the variants and variables of grieving these losses, often overlooking the circumstances and sources of resilience which promote less

suffering in a briefer period of grieving. The different patterns of coping with these losses need to be better identified and understood. The vast majority of families are able to manage these losses, sometimes abetted by the subsequent pregnancy, and resume normative functioning. We need to better understand how they do so and what constitutes resilience. At the end, this knowledge will help develop targeted preventions and interventions that can help mothers and families to heal from reproductive loss.

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Part III

The Biological Impact of Maternal Trauma

Trauma Exposure: Consequences to Maternal and Offspring Stress Systems

6

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Abstract

Trauma exposure is a common experience for childbearing-age women: among women over age 18 in the USA, one in three has experienced intimate partner violence, and more than 40% has experienced sexual violence during their lifetime (Breiding et al. 2014; Tjaden and Thoennes, 2000). In this chapter, we discuss associations between traumatic experiences and physiological stress system functioning among adults, with particular emphasis on the experiences of mothers and their young children. We focus on abnormalities of two interdependent physiological systems that orchestrate the stress response: the hypothalamic-pituitary-adrenal axis and the autonomic nervous system. Dysfunction in these systems has been implicated in the development of multiple physical and psychological problems (Shonkoff et al. 2009). Importantly, stress system alterations may help explain the negative outcomes observed among children of trauma-exposed women or the intergenerational transmission of trauma. First, stress system dysfunction is likely to permeate functioning across a range of functional domains, including parenting (Leerkes et al. 2015), shaping children's development. Second, dysregulation of stress responses can directly affect fetal development during gestation, when maternal and fetal biology are intrinsically connected, leading to increased risk for physical and psychological disease (Talge et al. 2007). Stress response alterations may be fruitful targets of interventions that seek to address the needs of trauma-exposed mothers and promote better outcomes for their offspring.

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6.1 Trauma and HPA Axis Functioning

The stress response consists of a set of adaptive physiological and behavioral changes, such as increased heart rate and blood pressure, inhibition of vegetative functions, and activation of fight/flight responses that are designed to prepare the organism to face an environmental challenge or threat (Gunnar and Quevedo 2007). The physiological stress response system is comprised of two interdependent systems: the hypothalamic-pituitary-adrenocortical (HPA) axis and the autonomic nervous system (ANS). The HPA axis consists of the hypothalamus, the anterior pituitary, and the adrenal cortex. After receiving information from the amygdala, the hippocampus, and the autonomic nervous system, the HPA axis initiates a stress response, increasing hypothalamic release of corticotropin-releasing hormone (CRH) and arginine vasopressin (AVP). CRH stimulates adrenocorticotropic hormone (ACTH) and B-endorphin (B-E) release from the pituitary gland into the circulatory system and onto the adrenal cortex, where secretion of cortisol is stimulated. Cortisol is released into the body and the brain, inducing stress-associated changes in blood pressure, glucose metabolism, growth, and reproduction, as well as cognition, memory, and emotion; however, chronic exposure to high levels of circulating cortisol has catabolic, lipogenic, antireproductive, and immunosuppressive effects (Gunnar and Quevedo 2007).

Once the stressor has passed, HPA axis activity is downregulated through an inhibitory negative feedback loop. Cortisol binds to hippocampal mineralocorticoid (MR) and glucocorticoid receptors (GR). GR activation is a key to effectively cope with stress, and GR availability is regulated by the NR3C1 gene (Palma-Gudiel et al. 2015). Increased binding exerts an inhibitory effect in production and release of CRH and ACTH, which results in a return to baseline cortisol levels and termination of the HPA stress response (Gunnar and Quevedo 2007). An effective HPA stress response is triggered rapidly in response to internal or external stressful stimuli, inducing increased release of CRH, ACTH, and cortisol, and returns rapidly to the baseline state of homeostasis through the inhibitory effects of hippocampal receptors once the threat has ceased (Herbert et al. 2006). Notably, cortisol levels are influenced by multiple factors (e.g., exercise, eating, etc.), and secretion is influenced by a naturally occurring circadian rhythm of cortisol secretion, characterized by a peak about 30 min after awakening and declining levels throughout the day that reach nadir at nighttime (Herbert et al. 2006). Given the complexity of the stress response system, a number of indicators have been used to reflect HPA axis activity and are thought to reflect different characteristics of HPA functioning.

Early research focused on *resting* cortisol levels and suggested abnormally low levels among individuals with PTSD (Yehuda 2003), but more recent research reports mixed findings. Two meta-analyses reported no overall differences in basal cortisol levels among individuals with a current diagnosis of PTSD and healthy controls (i.e., no trauma history or no current mental health problems, respectively; Klaassens et al. 2012; Meewisse et al. 2007). However, one of these meta-analysis found that studies that sampled cortisol in the afternoon ($n = 7$), that included only women ($n = 4$), that included only individuals with PTSD related to physical or sexual abuse ($n = 5$), or that excluded trauma-exposed controls ($n = 9$) did find lower circulating cortisol levels

among individuals with PTSD, compared to controls. Similarly, Morris et al. (2012) reported lower resting cortisol levels among trauma-exposed adults with and without PTSD, as compared to non-trauma-exposed adults, but only in the afternoon.

To address the observation that cortisol dysregulation may be most evident at certain times of the day (i.e., afternoon) and capture the characteristic pattern of daily HPA functioning, the *cortisol awakening response* (CAR) and *diurnal patterns* of cortisol secretion have been investigated. There are several advantages to using these indices to measure of HPA axis functioning: (1) they require assessing cortisol at multiple data points, enhancing reliability; (2) these indices convey information about output changes throughout the day that reflect the dynamic properties of the system; and (3) they do not require laboratory-based assessment, making sampling more ecologically valid and convenient. Initial studies report a flattened cortisol secretion profile among individuals with PTSD, characterized by decreased CAR and lesser decline in cortisol levels throughout the day (Wessa et al. 2006). In a recent meta-analysis, Chida and Steptoe (2009) found that adults with PTSD displayed lower CAR than the control group in two studies identified as having high methodological quality, although this result was not maintained when studies of variable methodological quality were included ($n = 5$).

While studies of naturally occurring cortisol levels provide information about baseline HPA axis functioning, challenged cortisol levels have also been examined to better understand how trauma exposure alters the reactivity of this system. Studies using laboratory procedures to elicit psychosocial stress to mobilize the cortisol response have reported mixed findings: two small studies reported cortisol elevations in anticipation to, during, and after a stressful task among individuals with PTSD (i.e., arithmetic task or traumatic script; Bremner et al. 2003; Elzinga et al. 2003), but another study reported no differences between individuals with combat-related trauma and trauma-unexposed controls (Liberzon et al. 1999). On the other hand, studies that use a biological challenge to mobilize the cortisol response report generally consistent findings. The adapted dexamethasone suppression test (DST) measures the sensitivity of the negative feedback loop to terminate the HPA response. Trauma exposure is associated with greater suppression of cortisol in response to DST compared to controls, and this alteration is likely a consequence of traumatization and not only observable after the development of PTSD symptoms: Klaassens et al.'s (2012) meta-analysis of six studies found that trauma-exposed adults showed augmented cortisol suppression after DST compared to controls, while studies that compared trauma-exposed adults with and without PTSD ($n = 9$) did not find significant differences post-DST.

Interpreting the associations between cortisol levels and trauma exposure is complicated because typically studies confound trauma exposure and PTSD symptoms. However, two of the meta-analyses did find significant HPA axis alterations among trauma-exposed non-PTSD adults, including *evening basal* cortisol and increased suppression in response to the *DST* biological challenge, as compared to non-traumatized controls (Klaassens et al. 2012; Morris et al. 2012). A second challenge in this field is the frequent co-occurrence of depression and PTSD among trauma-exposed adults, which has often not been taken into account by studies that focus

exclusively on PTSD. Some research suggests that trauma may lead to both hyper- and hypocortisolism and specific patterns of dysregulation may be correlated with different symptom presentations (depression and PTSD, respectively). Heim et al. (2000) reported that depressed women with a history of childhood abuse had an *increased* cortisol response to a psychosocial stressor, as compared to trauma-exposed non-depressed women and healthy controls, and Morris et al. (2012) found higher *evening* cortisol among trauma-exposed adults with depression and PTSD and *lower* levels among trauma-exposed individuals with or without PTSD, as compared to non-traumatized controls. Characterization of psychological symptom profiles needs to be integrated into research to better understand the effects of traumatic experiences on HPA axis functioning.

A second challenge for the field is that much of the early research assessed men with PTSD secondary to military trauma, and those findings may not apply to victims of other traumatic stressors, including young mothers. Addressing this gap, a body of research has focused on victims of interpersonal violence, a highly common and impactful experience for women of childbearing age. A number of studies have reported neuroendocrine dysregulation among victims of intimate partner violence (IPV). Women exposed to IPV display lower levels of cortisol during the morning as compared to nonexposed women (Griffin et al. 2005) and higher levels of cortisol during the evening (Pico-Alfonso et al. 2004), reflecting a flattened profile of diurnal cortisol secretion. In addition, IPV victims display inefficient termination of the stress response (i.e., slower return to baseline after stress; Griffin et al. 2005), even when controlling statistically for the victims' depression levels. Similarly, a history of childhood maltreatment is associated with lower morning cortisol levels and a blunted cortisol response to psychosocial stressors during adulthood, even when controlling for symptoms of psychological problems (Carpenter et al. 2011).

Overall, research suggests that trauma and consequent PTSD are associated with low resting cortisol levels (Klaassens et al. 2012; Morris et al. 2012), diminished CAR (Chida and Steptoe 2009), a flattened profile of secretion during the day (Wessa et al. 2006), and increased cortisol suppression in response to the DST (Klaassens et al. 2012), a biological challenge to the HPA axis. Findings also highlight the effects of trauma exposure for mothers, as women's basal cortisol levels are more likely impacted by traumatic exposures (as compared to men's; Klaassens et al. 2012), and women are also more at risk for physical or sexual abuse, traumatic events that are reliably associated with cortisol dysregulation (Griffin et al. 2005; Carpenter et al. 2011), even when statistically controlling for mental health problems. A hypoactive pattern of HPA activity reflects heightened sensitivity of the negative feedback loop, leading to excessive shutting down of this system (Yehuda 2003) and significant consequences for an individual's ability to mount an appropriate behavioral response in the face of a stressor, as well as to recover in the aftermath of a stressful event (Morris et al. 2012). Also, reduced cortisol levels may impact cognitive and immune system functioning, leading to increased vulnerability for a variety of different disorders (Heim et al. 2000).

6.2 Trauma and the Autonomic Nervous System

Less research has evaluated a second system that is key for the physiological stress response: the autonomic nervous system (ANS). In response to stressors, the ANS rapidly mounts a biobehavioral response that prepares the organism to face the threat, including the release of catecholamines into the bloodstream, accelerations of heart and respiratory rates, elevations in blood pressure, increased sweat production, and other physiological changes (Gunnar and Quevedo 2007). The ANS comprises a sympathetic branch (SNS), in charge of initiating physiological arousal, and a parasympathetic branch (PNS), which modulates arousal and is responsible for recovery and restoring autonomic homeostasis (Gunnar and Quevedo 2007). Due to its diffuse effects throughout the body, ANS can be measured using a variety of indicators, including heart rate (HR), heart rate variability (HRV), skin conductance levels (SCL), and respiratory sinus arrhythmia (RSA), among others. These different physiological markers are thought to represent different ANS subsystems: (1) the social communication system, which includes the myelinated vagus nerve and the PNS and influences heart rate and respiratory sinus arrhythmia (RSA); (2) the mobilization system, which comprises the SNS and flight-or-fight behaviors and leads to increases in heart rate and skin conductance levels (SCL); and (3) the primitive immobilization system, which includes the unmyelinated vagus nerve and can be expressed via freezing behaviors (Porges and Furman 2011).

Early studies mostly focused on the SNS and documented elevated cardiovascular activity among individuals with PTSD as compared to traumatized healthy adults. For example, two meta-analyses have reported increased *resting* HR among individuals with PTSD as compared to those without PTSD (Buckley and Kaloupek 2001; Pole 2007). Although most of the studies have evaluated male military veterans, some research documents similar heart rate elevations, as measured when trauma reminders were presented, among victims of motor vehicle accidents (Blanchard et al. 1996) and adult victims of childhood sexual abuse (Orr et al. 1998). However, measures of heart rate can reflect both sympathetic and parasympathetic activity, making it hard to tease apart the specific dysfunction that is associated with PTSD. In contrast, SCL reflect the activity of the SNS and are not affected by PNS activation. When the SNS is activated, sweat accumulates in the sweat glands and sweat levels in the ducts of the palm surface increase (Dawson et al. 2011). A number of studies have reported higher SCL in response to laboratory stressors among individuals with PTSD secondary to war, terrorism, accidents, and sexual assault (Shalev et al. 1997; Orr et al. 1997), providing evidence of specific stress-induced SNS hyperactivity.

Fluctuations in heart rate can be used to better understand the efficiency and coordination between the SNS and PNS: in low-stress situations, heart rate is slowed, but when a threat is detected, the vagal response of the parasympathetic system is diminished, and the sympathetic nervous system induces increases in heart rate. Heart rate variability (HRV) reflects these changes over time, with more vagal control promoting more rapid adjustments to environmental inputs (high

HRV). Low HRV represents higher sympathetic and lower parasympathetic tone and is associated with less optimal emotion regulation in response to stressful events and poor psychological outcomes (i.e., trauma exposure, depression, anxiety; Liddell et al. 2016). Research has documented lower *resting* HRV among adults with PTSD or other stress-related psychopathology (i.e., depression or intermittent explosive disorder), as compared to healthy controls (Cohen et al. 2000; Liddell et al. 2016). At rest, a high HRV is generally more favorable, and low resting HRV reflects decreased parasympathetic activity and increased sympathetic activity that is consistent with basal autonomic hyperactivation and arousal. Only one study has evaluated HRV during a *stressful challenge* (as opposed to resting conditions). Cohen et al. (2000) found that individuals with PTSD did not show the expected increased autonomic activity in response to trauma reminders but controls and individuals with panic disorder did. However, this study had relatively small groups of individuals with PTSD (n = 14 and 36), and results need further replication.

A third index, respiratory sinus arrhythmia (RSA), is used as a measure of PNS activity. The amplitude of RSA indicates the change in heart rate that occurs during breathing cycles: during inspiration HR increases and during expiration HR decreases (Porges and Furman 2011). Because parasympathetic activity affects heart rate very rapidly, changes in the high-frequency range of heart rate variability (0.15–0.50 Hz) are used to index RSA. Efficient decreases in vagal activity to adapt to environmental demands, or RSA withdrawal, is thought to reflect emotional and behavioral control (Porges and Furman 2011). Decreases in RSA in response to trauma reminders are characteristic of PTSD (Sack et al. 2004). Cyranowski et al. (2011) found that depressed women with high levels of lifetime trauma exposure had the lowest levels of RSA during a stressful laboratory task regardless of their PTSD status, as compared to non-depressed and depressed women with low traumatic exposures, suggesting diminished cardiac vagal control.

Again, it is difficult to disentangle the effects of trauma from biological correlates of PTSD because most of the studies reviewed compared individuals with PTSD to controls, but studies that compare trauma-exposed adults without PTSD to healthy controls are rare. In addition, a lot of this literature addresses PTSD-related deficits among adults who experienced military trauma, and their findings may not represent the ANS alterations of victims of other traumatic stressors. To address this deficit, a few studies have examined the effects of interpersonal violence on ANS functioning and provide preliminary evidence of significant alterations among trauma-exposed adults, which at least in part mirror the findings of the PTSD studies. Self-reported childhood maltreatment history is associated with high *stress-induced* SCL and low *resting* RSA during adulthood (Dale et al. 2009). Research also documents lower HRV when victims of partner violence diagnosed with PTSD are exposed to trauma reminders (Hauschildt et al. 2011).

In sum, PTSD is associated with ANS alterations that include increased SNS activity during resting and stressful or trauma-related conditions, higher sympathetic and lower parasympathetic tone during rest (Shalev et al. 1997; Orr et al. 1997), and less vagal (parasympathetic) control during stressful tasks (Cohen et al.

2000; Liddell et al. 2016; Sack et al. 2004). Some of the alterations (e.g., HR elevations during rest and lower HRV at rest and in response to trauma reminders) are likely biological correlates of PTSD, but others seem to be directly linked to trauma exposure: for example, lower RSA is characteristic of depressed women with high lifetime trauma exposure, regardless of their PTSD status (Cyranowski et al. 2011), and higher SCL and lower RSA are found among victims of childhood maltreatment and IPV as compared to women not exposed to interpersonal trauma (Dale et al. 2009). Heightened arousal paired with low parasympathetic control has significant functional implications, including poor health outcomes (i.e., cardiovascular disease, hypertension, diabetes, and obesity) and psychosocial problems (Liddell et al. 2016).

6.3 Stress Dysregulation: Effects on Parenting

As documented by scores of research, parenting, especially during early childhood, constitutes a potent influence for child development, shaping cognitive and socioemotional capacities and contributing to child positive adaptation or psychosocial problems (e.g., Belsky and de Haan 2011). Although it is clear that psychological and environmental mechanisms contribute a great deal to parenting attitudes and behaviors, a number of studies have begun to document significant physiological contributions to parenting practices, specifically links between stress system activity and parenting. ANS and HPA dysregulation, which influence the individual's ability to effectively deal with environmental demands, likely also affect parents' emotional and behavioral capacity to deal with the often-challenging task of caregiving.

Heightened maternal cortisol reactivity is associated with more self-reported harsh parenting (Martorell and Bugental 2006), and increases in heart rate and cortisol levels in response to infant crying were associated with less parenting confidence (Lin et al. 2002). Associations have also been found using observational measures of parenting, which may be less susceptible to reporting biases as compared to maternal reports. Mills-Koonce et al. (2009) reported that women with high baseline cortisol levels and low challenged RSA displayed more negative intrusiveness during the interaction with their infant examined among their sample of 175 dyads. Using a different approach, Sturge-Apple et al. (2011) classified mothers as moderately, hypo-, and hyperaroused based on their sympathovagal activity during a stressful separation and reunion lab task, the strange situation procedure. They found that hyperaroused mothers were more hostile and intrusive during free play interactions with their toddlers, while hypoaroused women were more insensitive and disengaged when interacting with their children.

Although most studies have measured physiological dysregulation and parenting concurrently, making it hard to ascertain the directionality of the relationship between stress system alterations and parenting behaviors, three recent studies document longitudinal associations, suggesting stress response dysregulation precedes parenting difficulties. Joosen et al. (2013) reported maternal elevations in SCL during repeated trials of infant crying when infants were 3 months old were associated with later harsh

parenting during interactions with their infants at 12 months old. Similarly, Leerkes et al. (2015) found that women with high SCL and low RSA in response to the crying task during pregnancy showed less maternal sensitivity during mother-infant interactions at 6 months postpartum among a large sample. With older children, Sturge-Apple et al. (2009) reported associations between mother's higher cortisol reactivity to a lab-based marital conflict task and their self-reported levels of harsh discipline and psychological control in parenting 2 years later, as well as higher father's cortisol reactivity and more psychologically controlling parenting.

The physiological correlates of parenting among trauma-exposed parents have received less attention, but a small number of studies suggest stress response dysregulation may, at least in part, explain the link between traumatic life experiences and parenting behaviors. Among a small group of victims of interpersonal violence (n = 36), severity of childhood abuse was associated with lower baseline cortisol levels, and lower baseline cortisol was associated with more atypical caregiving behaviors during interaction with their preschool-age child (Schechter et al. 2004). Juul et al. (2015) obtained similar results with a larger sample; early-life trauma predicted lower mean cortisol levels, which in turn predicted more neutral affect during naturalistic mother-child interactions. On the other hand, Gonzalez et al. (2012) reported that higher levels of diurnal cortisol served as a mediator between maternal reports of adverse early experiences (including maltreatment and inconsistent care) and greater observed insensitivity during mother-infant interactions.

In sum, various indices of HPA and ANS activity dysregulation have been associated with parenting difficulties, and studies show that patterns of HPA hyperactivation or hyperarousal (i.e., high challenged cortisol, high diurnal cortisol; Martorell and Bugental 2006; Mills-Koonce et al. 2009), HPA hypoactivation (i.e., low basal cortisol; Gonzalez et al. 2012), high SNS activity (i.e., high challenged SCL; Joosen et al. 2013; Leerkes et al. 2015), and low PNS activity (i.e., low RSA; Leerkes et al. 2015; Mills-Koonce et al. 2009) may all contribute to less optimal caregiving styles and behaviors, including low sensitivity or harsh parenting. Importantly, initial studies suggest that parenting dysfunction in the face of trauma can be attributed, at least in part, to these physiological alterations (Juul et al. 2015; Gonzalez et al. 2012). Nonetheless, this area of research is emerging, and additional replication studies are needed, as well as more uniform methods to characterize trauma, as timing, duration, type, and severity of trauma exposure fluctuated across the research reviewed, making it hard to directly compare key findings across studies. Furthermore, research has generally not included fathers, so what we know is primarily applicable to female caregivers.

6.4 Trauma and Stress Dysregulation During Pregnancy: Offspring Outcomes

Maternal trauma and stress system dysregulation may influence offspring through its effects on parenting behaviors, but it may also have direct effects when experienced during gestation, when maternal and fetal biology are intrinsically connected. It is now well established that pregnancy is a sensitive period for offspring

development (Talge et al. 2007), but the research exploring the impact of traumatic stress on pregnant woman's offspring is still emerging. Findings point to increased risk for perinatal complications and poor birth outcomes: women exposed to disasters have higher rates of intrauterine growth restriction, more infants with low birth weight, and shorter gestations than unexposed mothers (Dancause et al. 2011), and more severe disaster-related experiences led to worse outcomes (Xiong et al. 2008); these differences were not dependent on women's concurrent mental health (PTSD or depression) symptoms. Prenatal exposure to traumatic stress can also adversely impact the development of the offspring during early childhood, leading to temperamental difficulties and more internalizing and externalizing problems during early childhood (Burke et al. 2008; Levendosky et al. 2016) as well as depressive problems during school age (Martinez-Torteya et al. 2016). These negative socioemotional outcomes are proposed to be a result of "programming" of the offspring's physiological stress responses (Talge et al. 2007), and preliminary evidence supports that HPA dysregulation is a result of exposure to trauma in utero (Levendosky et al. 2016; Martinez-Torteya et al. 2016).

A number of studies have *directly* assessed maternal stress regulation during pregnancy, as opposed to trauma exposure, and found significant associations with birth outcomes and early offspring risk. Notably, both cortisol hyper- and hypoactivity have been associated with negative infant outcomes. Higher maternal awakening levels (i.e., CAR) during pregnancy prospectively predict lower birth weight and shorter length at birth (Bolten et al. 2011); more observed irritability and negative affect, as well as higher reports of difficult temperament by 5 months of age (de Weerth et al. 2003); higher infant behavioral distress (crying and fussing) in response to maternal separations (de Weerth et al. 2013); and higher basal and stress-induced infant cortisol levels (de Weerth et al. 2013). High levels of resting maternal cortisol during pregnancy have also been associated with heightened reactivity among 2 months old (Davis et al. 2005) and difficult temperament at 2 years of age (Gutteling et al. 2005). On the other hand, low levels of maternal cortisol during early and midpregnancy have also been associated with higher levels of observed aggression among 3-year-olds (Susman et al. 2001).

ANS activity during pregnancy has been less studied as a predictor of infant outcomes, but a recent large longitudinal examination provides evidence of links between specific patterns of HPA/ANS multisystem coordination and infant outcomes. Rash et al. (2016) evaluated indices of HPA, SNS, and PNS activity during pregnancy as predictors of infant stress response system activity at 6 months old among a relatively large sample (N = 254 dyads). They found that women with lower resting RSA, a correlate of traumatic stress exposures, had infants with more cortisol reactivity and more salivary alpha amylase (sAA, an index of SNS activity) in response to a stressor, although levels of maternal diurnal cortisol and sAA during pregnancy moderated which system displayed alterations (HPA vs. ANS) among infants.

Altogether, evidence suggests maternal trauma exposure does not only impact infant outcomes via direct infant exposure (i.e., infant also experiences the traumatic event) or maternal psychological and behavioral disturbances (e.g., parenting or psychopathology) but also when experienced during pregnancy via biological

pathways impacting the HPA and ANS with potential major consequences such as negative birth outcomes or offspring temperamental, behavioral, or stress system dysregulations (Burke et al. 2008; Levendosky et al. 2016; Xiong et al. 2008). Early-life stress system dysregulation, in turn, contributes to differences in biological susceptibility to later environmental stressors and can lead to the development of multiple physical and mental health problems later in life (Shonkoff et al. 2009).

6.5 Concluding Remarks

Experiencing traumatic events has lasting implications for the functioning of stress response systems for mothers and their offspring. Abnormalities in HPA and ANS functioning have been primarily documented among individuals exposed to trauma who have also developed PTSD, but evidence suggests that at least some of these abnormalities are a consequence of traumatic exposures and are found in the absence of, or even when statistically controlling for, psychopathology (Cyranowski et al. 2011; Klaassens et al. 2012; Morris et al. 2012). Traumatic experiences, especially those that involve interpersonal violence, can lead to cortisol hypoactivity *or* hyperactivity, heightened basal and stress-induced SNS arousal, and decreased PNS vagal regulation. Specific profiles of dysregulation may be particularly likely among individuals who develop specific psychological problems (e.g., depression vs. PTSD), and additional longitudinal research is needed to better characterize relationships between trauma exposure, stress response alterations, and specific profiles of psychopathology.

Stress response dysregulation has significant implications for the offspring of trauma-exposed women. Patterns of HPA hyper- and hypoactivation, as well as indices of high SNS and low PNS, have all been associated with maternal parenting behaviors (Gonzalez et al. 2012; Martorell and Bugental 2006; Sturge-Apple et al. 2011), and emerging research suggests that stress system dysregulation can, at least in part, mediate the negative parenting outcomes documented among trauma-exposed adults (Gonzalez et al. 2012; Juul et al. 2015). Parenting is a key influence for early childhood adaptation, and parenting characterized by low sensitivity, low monitoring, and inconsistency increases the odds for child maladaptation (Belsky and de Haan 2011). However, this body of research is still emerging, and much more attention needs to be given to the contributions of fathers, as most studies only assessed women. A second pathway to offspring risk includes psychosocial trauma experienced during gestation, as well as maternal cortisol hyperactivity and low parasympathetic vagal control during pregnancy. Research shows that prenatal trauma and maternal stress response alterations can affect fetal development and lead to perinatal and obstetric complications (Talge et al. 2007), early offspring temperamental and behavioral problems (Levendosky et al. 2016), and stress response dysregulation during infancy (Rash et al. 2016). These effects are consistent with the "prenatal programming" hypothesis, which suggests that in utero fetal brain adaptations that occur in response to prenatal conditions (e.g., nutrition, placental cortisol levels), including fetal stress system alterations, are lasting and shape

offspring lifelong health and disease outcomes (Talge et al. 2007). Findings, however, come from a handful of studies and use different indices of maternal stress systems functioning; the development of "gold standards" that guide future research and incorporate resting, diurnal, and dynamic characteristics of both systems, as well as multisystem integration (i.e., patterns of interaction between the HPA and ANS systems), is needed.

Stress response alterations may be fruitful targets of interventions that seek to address the needs of trauma-exposed mothers and promote better outcomes for their offspring. Research findings have been variable, but at least some studies have documented promising applications for relaxation and biofeedback interventions that can reduce cortisol or HRV alterations (Zucker et al. 2009) among adults with PTSD or other adult populations. These techniques may be easily integrated into existing programming that serves pregnant women and young mothers enduring traumatic stress (e.g., domestic violence services) or other vulnerable populations with high rates of trauma exposure (e.g., those in perinatal home visiting services). Holistic approaches that address brain-body relationships and target trauma-related stress response dysregulation may be an important element to reduce the intergenerational transmission of traumatic stress.

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7 Maternal Trauma and Related Psychopathology: Consequences to Parental Brain Functioning Associated with Caregiving

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Abstract

The chapter takes as its departure point the Winnicottian notion of "Good-enough mothering" as being tied to the capacity of the primary caregiver to engage in mutual emotion regulation during sensitive periods of early development. Maternal experience of interpersonal violence and related psychopathology (i.e. posttraumatic stress disorder) through associated emotional dysregulation and activation of traumatic memory traces even by routine mother–infant interactions (i.e. interactions such as separations involving child helplessness) perturbs this mutual regulation. Original research from the Geneva Early Childhood Stress Project is described to support that both neural activity and epigenetics of stress-linked genes are promising as (1) important markers of these hypothesized

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mechanisms and (2) useful measures of the effectiveness of targeted parent–child interventions. The role of individual differences played by possible endophenotypes in the intergenerational transmission of trauma and associated psychopathology, as for example that noted for mothers with prominent dissociative symptoms, is discussed with its clinical implications.

7.1 Introduction

Winnicott described the "good-enough mother" as one who indulges the initially completely dependent infant enough to permit him/her to feel comfortable and safe, but who also later supports that the infant abandons this early fantasy of complete 'synchrony' and learns to tolerate frustration (Winnicott 1953). "Good-enough" parenting, borrowing from this concept of the "good-enough mother," is thus a very complex set of tasks that involves a consistent, predictible physical and emotional presence, while being neither too intrusive nor too distant. It is only when one takes a moment to reflect on all of the many functions that one actually performs as a parent that it suddenly seems daunting. From the beginning of the child's life, parenting requires the procedurally encoded application of a multitude of social and emotional skills. For example, the emotional development of the child requires the parent both to model and to engage mutually in emotion and arousal regulation. This complex function coexists with many other types of critical caregiving tasks, such as nurturing, regulation of sleep and wakefulness, and surveillance of the environment.

It follows that in order to be a good-enough parent, a number of psychological and biological functions need to work well together. And as a command central of all of those functions, the parental brain shoulders a heavy load. Human beings are most often physiologically prepared to become a parent over the course of gestation. The work by Barrett and Fleming (2011) demonstrated that during pregnancy and the postpartum period, several changes occur in the levels of specific hormones (e.g., gonadal hormones, oxytocin), which activate or affect specific regions in the maternal brain. For example, the rise in oxytocin hormone levels is thought to ensure that the mother will be attracted to her baby, will be attentive and sensitive to her baby's needs, and will behave in a way that supports and protects her baby's development.

Swain et al. (2012) added that the transition to parenthood also involves changes in the maternal brain that imply greater plasticity and an increase in gray matter volume, particularly in specific key regions such as the insula, prefrontal cortex, parietal lobes, and midbrain structures (hypothalamus, substantia nigra, and amygdala). In fact, increased gray matter volume in the midbrain correlates with maternal positive perceptions of her baby (Kim et al. 2010). Parenting not only modifies brain structure but also modifies brain functioning. Generally, parenting tasks require activation of multiple systems in the brain related to sensation, perception, affect, reward, executive function, motor output, and learning (Barrett and Fleming 2011). Research has demonstrated that specific maternal brain regions are activated when

mothers hear their own baby's cries. These specific brain regions include the amygdala (relevant to detection of novelty and alarm), the striatum and nucleus accumbens (relevant for sense of motivation and reward), the anterior cingulate cortex (ACC) (the ventral part of the ACC, or vACC is relevant for affect response and regulation; the dorsal part of the ACC, or dACC, has been linked to the appraisal of negative emotion) and dorsal prefrontal cortex (dPFC, is relevant for appraisal of actual danger and decision making), and the ventral part of the medial prefrontal cortex (vmPFC, is relevant for the regulation of limbic activation underlying emotional expression in general). Other brain structures that are also implicated in the complex connections relevant to parental brain circuitry are the inferior frontal gyrus (IFG, involved in the interpretation of another's emotional state and reappraisal of others intentions) (Grecucci et al. 2013), orbitofrontal cortex (OFC) (has a role in executive functions), insula (involved in the interpretation of others' intentions, has a role in bottom-up regulation), and periaqueductal gray (PAG) (involved in the expression of maternal behaviors).

Overall, a mother's neural activity in response to her child's cues reflects her psychobiological functioning at the time of a given interaction and is associated with her observable caregiving behavior (Moser et al. 2013). Multiple brain structures play a synergistic role in the regulation of these very complex social-cognitive and affective functions, by which a mother responds adequately ("good-enough mothering") to her child's needs under optimal conditions (Swain et al. 2012). However, more recently, research has also begun to investigate these brain processes under suboptimal conditions, such as when a mother herself is feeling threatened or otherwise excessively stressed. At these threat conditions, these same brain circuits may be adversely affected.

7.2 Trauma, Psychopathology, and Brain Circuitry

A number of different parental psychiatric disorders may affect the psychobiological processes involved during the course of a given parent-child interaction and alter parenting behaviors (Schechter and Willheim 2009). Exposure to interpersonal violence (IPV, i.e., physical and sexual abuse and exposure to domestic violence during childhood and adolescence, as well as physical and sexual assault by intimate partners and others during adulthood) is among the most traumatogenic of human experiences. IPV often leads to acute dysregulation of emotion and arousal, which can undermine one's usual social-emotional coping strategies (i.e., social-cognitive capacity). IPV, particularly when repeated over time and in the context of an otherwise unpredictable environment, can alter an individual's stress physiology in a number of important ways. Convergent data from the literature highlights emotional and physiological dysregulation related to post-traumatic stress disorder (PTSD), as one common form of psychopathology with enduring effects that results in the wake of violent trauma (see Chap. 6 by Martinez et al. in this book).

In order to understand the effects of IPV-related PTSD (IPV-PTSD) on maternal brain functioning, it is useful to consider the neuroimaging literature that examines

brain structure and neural activity, particularly in response to trauma-related stimuli, among IPV-PTSD adults. Multiple fMRI studies using violence-related stimuli including trauma scripts, suggestive still images, or fearful and angry facial expressions have shown what has become known as "cortico-limbic dysregulation" (Bremner 2002; Shin et al. 2005, 2006; Liberzon et al. 2007; Moser et al. 2015c). Under normal circumstances, a fear-inducing stimulus triggers the amygdala and surrounding limbic structures ("the emotional brain") as an alarm of danger to the organism; the dACC and mPFC ("the rational brain") meanwhile appraise and contextualize the degree of actual danger and modulate the limbic response to the original fear stimulus. Neural activity in IPV-PTSD is characterized by a *hypoactivation* of brain regions associated with threat appraisal (i.e., the "rational brain" vmPFC and dACC) and thus reduced top-down regulation of the limbic ("emotional brain") system. The dACC is a particularly salient region as shown in the paper by Rougemont-Bucking et al. (2011) that involved a fear-conditioning and fear extinction paradigm. The authors showed that among PTSD patients, the vmPFC remained hypoactivated even after extinction was learned (i.e., the fear stimulus was paired with a positive stimulus that recontextualizes it and renders it less noxious). And yet the dACC became activated once extinction was learned. Another study (Liberzon and Sripada 2008), similarly in patients with IPV-PTSD, also found that reexposure to violent trauma induced over-activation of limbic structures such as the amygdala.

Thus, it appears that there are two mechanisms in place that are associated with trauma-induced PTSD symptoms, a "top-down" and a "bottom-up" mechanism of cortico-limbic dysregulation. In PTSD, over-activation of the amygdala and surrounding limbic structures seems to be associated with hyperarousal and hypervigilance symptoms of PTSD. It is thus clear that the way IPV-PTSD affects the brain should be relevant to many functions that are also relevant to parenting. A more nuanced understanding of the psychobiology and neural circuitry relevant to caregiving in parents with trauma may help clinicians develop a better understanding of traumatized parents' challenges and needs, and advance understanding of treatment targets in existing and newly developed interventions.

7.3 The Geneva Study on IPV-PTSD and Brain Circuitry

As part of a large multisite research program in Switzerland,[1] the Geneva Early Childhood Stress Project has focused on how maternal IPV-PTSD impacts the mother-toddler relationship (Schechter et al. 2015c). "The Geneva study on IPV-PTSD and Brain Circuitry" utilizes a multifaceted approach by studying the issue from a psychological, behavioral, physiologic, and neuroimaging perspective. The participants of these studies were IPV-PTSD mothers contrasted with healthy control mothers with children aged 12–42 months of age. The Geneva study on IPV-PTSD and Brain Circuitry indicated that mothers with IPV-PTSD have a

[1] The National Center for Competence in Research-The Synaptic Basis of Mental Disorders (NCCR-SYNAPSY; http://www.nccr-synapsy.ch).

psychobiological disadvantage during general socio-emotional processing (GSEIP) and that this disadvantage generalizes to parenting specific processing and behaviors (PSPB) when they interact with their children. This disadvantage expresses in the brain in three ways: (1) reduced activity and changed function of the ventromedial prefrontal cortex (vmPFC) likely indicating problems in emotional appraisal which probably drives increased negative emotionality; (2) altered functionality in the dorsal prefrontal cortex (dPFC), indicating that mothers with IPV-PTSD have altered "top-down" regulation of their emotion, primarily focused on negative emotions in general rather than arousal level. Moreover, the use of cognitive resources in mothers with IPV-PTSD as opposed to controls seems disassociated from their children's emotional needs; and (3) increased hippocampus activation during emotionally aversive scenes, which suggests that IPV-PTSD mothers may have overactive emotionality and memory when dealing with their children in distress.

Specifically, some of the first studies within the Geneva project (Moser et al. 2015a, b) focused on understanding GSEIP among IPV-PTSD mothers. The probes that these studies used to capture brain activation in the MRI scanner were scenes of adult male-female interactions excerpted from fiction films with varying emotional content (e.g., scenes with menacing content and scenes with prosocial content). First, these studies found reduced ACC and vmPFC activity in response to emotional versus neutral scenes among the IPV-PTSD mothers compared to controls. The ACC and vmPFC have been linked to the appraisal of emotional stimuli and also to a more direct—and potentially subconscious—modulation of limbic system activity (i.e., "raw emotion"). This reduced ACC and vmPFC activity among IPV-PTSD individuals is likely linked to reduced emotional awareness and alexithymia (Frewen et al. 2008). In other words, the brain of IPV-PTSD mothers may have trouble correctly appraising and differentiating the way it has to adjust raw emotional arousal levels when scenes are menacing rather than prosocial.

The two studies cited above by Moser et al. (2015a, b) paradoxically found that ACC and vmPFC activity was negatively correlated with maternal sensitivity as coded from videotaped mother-toddler interactions utilizing a standard coding system in response to menacing adult male-female interactions versus positive, prosocial adult male-female interactions; in contrast, a different aspect of the mPFC, namely, dorsal mPFC activity was positively correlated with maternal sensitivity. This finding points to complex differences within the medial prefrontal cortex activation pattern that emerges in response to these emotionally evocative stimuli of both negative and positive valence with respect to maternal sensitivity, an attachment system-related variable as opposed to maternal IPV-PTSD, a fear-conditioning circuit-related variable (i.e., both vmPFC and dmPFC activity are negatively associated with maternal IPV-PTSD severity; see Schechter et al. 2012, 2015a, b). This differentiated reactivity of the vmPFC versus dmPFC in response to these emotionally evocative adult male-female interaction stimuli was found to be evident, independently of whether mothers were healthy (i.e., non-PTSD) controls or had a diagnosis of IPV-PTSD. One possible interpretation of this finding is that accurate appraisal of socio-emotional stimuli involves the vmPFC and dmPFC but that they may activate differently depending on the stimuli. In controls, the

dmPFC has been linked to emotion regulation of both positively and negatively valenced stimuli (Viinikainen et al. 2010) and is generally linked to executive functions. The latter support a range of socio-emotional regulatory capacities. Evidence that these above findings are indeed directly relevant for parenting comes from several studies. These studies compared again IPV-PTSD mothers to healthy controls (HC) and exposed them to video stimuli of their own children and unfamiliar children during stressful (separation) and non-stressful (play) mother-child interactions (Schechter et al. 2012; Schechter et al. 2015; Moser et al. 2013). The IPV-PTSD mothers' vmPFC activity was negatively correlated to reported parenting stress, that is, the less vmPFC activity, the more reported parenting stress (Schechter et al. 2015a). Thus, vmPFC in mothers with IPV-PTSD activity is related to both maternal sensitivity and how stressed mothers feel in their caregiving role. This finding again suggests that IPV-PTSD mothers are at a psychobiological disadvantage, when it comes to the appraisal of socio-emotional scenes, including those that take place during interactions with their children.

In addition to prefrontal cortex activation changes, self-reported stress in mothers with IPV-PTSD was also associated with greater limbic activity (emotion expression, Schechter et al. 2012). The limbic system is highly important to emotion expression, and limbic hyperreactivity has been shown to be related to PTSD symptoms of hyperarousal (Fonzo et al. 2010). Because one of the regions involved is the hippocampus, a region usually related to memory, one might hypothesize that IPV-PTSD mother's viewing of children during separation may trigger patterns of neural activation similar to those triggered in response to traumatic reminders among adult PTSD patients.

With an eye toward psychotherapeutic intervention informed by clinical neuroscientific findings, the Geneva study on IPV-PTSD and Brain Circuitry points to the importance of addressing the appraisal of socio-emotional stimuli among mothers with IPV-PTSD. Too little accurate appraisal may keep the mother from considering the child's perspective and from responding sensitively to her child's behavior. It may cause difficulty for the affected mother to realize when a situation triggers child distress but is not life-threatening (i.e., non-menacing). For example, a laboratory mother-child separation *does* seem dangerous to the toddler, who does not yet have the ability to understand that his mother leaving the room does not mean that she has abandoned him or disappeared forever, yet it is important for the mother to distinguish that this situation while stressful for her toddler is not life-threatening and can be overcome. One avenue toward effective intervention with traumatized caregivers is to focus on improving the accuracy of their appraisal of emotional communication, particularly of communication by the child that may trigger parents' own trauma-related memories.

7.4 Epigenetics and Brain Circuitry

The Geneva study on IPV-PTSD and Brain Circuitry also investigated how maternal brain activation might be related to epigenetic modulation in genes that code for several stress hormones among mothers with IPV-PTSD. Epigenetics is the study of

how genes regulate their expression, that is, whether and how much genetic information is "read" and translated into the production of biochemical substrates (i.e. proteins) that are essential for a range of functions in the human body. Unlike the genes themselves, which are equally present in all human body cells from the beginning to the end of life, the expression of each gene can differ between different cells of the body and also change during the lifetime. One proposed mechanism of epigenetic modulation of the genetic code is the amount of methylation of each particular gene; generally, higher methylation of a gene means reduced expression of that particular gene and less output of the protein that the particular gene codes for.

Recently, the Geneva team found significant correlations between the methylation of three distinct gene promoter regions and maternal behavior and/or brain activity in the sample of IPV-PTSD mothers. First, in one study (Schechter et al. 2015a), they investigated the promoter region of the glucocorticoid receptor gene NR3C1, a marker of HPA-axis functioning (for details on HPA axis, see Chap. 6 by Martinez et al.). Thus, that gene has a crucial impact on the peripheral, functional levels of the stress hormone cortisol. Results showed that IPV-PTSD mothers had a significantly lower mean percentage of methylation of the NR3C1 gene. This implies, based on existing literature, that there will be more expression of this receptor protein generating gene and greater negative feedback with the HPA axis (i.e., more down-regulation) and thus lower cortisol levels. The mean percentage of NR3C1 methylation was negatively correlated with severity of maternal PTSD severity and parenting stress (i.e., the lower the methylation, the greater PTSD symptoms and parenting stress). Moreover, less methylation of this gene was positively and significantly associated with less neural activity in the vmPFC and dPFC (i.e., the lower the methylation, the lower also vmPFC and dPFC activations) in response to seeing video excerpts of mother-child separation (stressful condition) versus play (non-stressful condition) for subject-mothers' own versus unfamiliar children (Schechter et al. 2015a). In the second study, the team examined the epigenetic modification of the brain-derived neurotrophic factor (BDNF) gene promoter region and patterns of neural activity associated with maternal response to the same stressful versus non-stressful child stimuli described above in reference to the study of the glucocorticoid receptor gene. BDNF has been identified, at the risk of oversimplification, as a protein whose presence in key brain regions is protective against fear learning, anxiety, and depression. The study found that BDNF gene methylation (i.e., more methylation, less expression of that gene and less production of BDNF) was positively correlated to maternal anxiety and with more activity in the ACC and vmPFC (Moser et al. 2015b).

Finally, in a third study, Schechter et al. (2017) reported on the methylation of the serotonin 3A receptor gene (5-HT3AR) and brain activity in response to video excerpts of adult male-female interactions that were escalating towards violence versus staying neutral or prosocial again in the same population of IPV-PTSD mothers. Serotonin likely has multiple functions with regard to emotion regulation, and upregulation of serotonin levels through reuptake inhibition is a central function of many antidepressants. Authors found that lower methylation of the 5-HT3AR gene

(i.e., greater expression of this receptor) was associated with greater maternal aggressive behaviors, and that lower methylation of the 5-HT3AR gene was also associated with cortico-limbic dysregulation within the maternal brain in response to aggressive versus non-aggressive male-female interactions. Specifically, this dysregulation was characterized by decreased medial prefrontal cortex activity in response to menacing versus both control stimuli (i.e., prosocial involving positively valenced affect and neutral interaction stimuli).

In sum, across all these studies, the authors found meaningful associations between maternal trauma-related psychopathology (i.e. IPV-PTSD and anxiety symptoms), patterns of neural activity (i.e., vmPFC, ACC, dPFC, hippocampus, and parahippocampal regions), and epigenetic changes related to genes essential to the production and/or regulation of stress-relevant compounds (i.e., cortisol, BDNF, and serotonin). These findings suggest that there is likely an interactive relationship between traumatic events such as the experience of IPV and subsequent development of related psychopathology, neural activity patterns, and epigenetics. Given the link between IPV-PTSD and neural activity with alterations in maternal interactive behaviors towards her child, these studies also suggest that epigenetic signatures may be associated with parenting behaviors.

7.5 Dissociation and Brain Circuitry

Above and beyond the effects of IPV-PTSD, maternal dissociative symptoms may further affect maternal brain activation to mother-child relational stimuli. One study found that after controlling for the increasing activation of the limbic system, there was a negative association of limbic activation and dissociative symptom severity when mothers watched their children during separation (Moser et al. 2013). This means that in subjects with greater dissociative symptoms, it is likely that PTSD-associated hyperarousal is attenuated, supportive of a "dissociative variant" or subtype of PTSD (Frewen et al. 2015). These findings, which are opposite to those of PTSD alone with respect to limbic system activity, highlight the influence of dissociation on maternal emotional regulation and the existence of a possible endophenotype characterized by a predominance of dissociative symptoms. In terms of being a defense mechanism against overwhelming limbic activity, dissociation appears to work. But dissociative symptoms do not come without an important cost. In particular, infants and young children may find themselves at a comparative disadvantage—maybe even in danger—when being faced with dissociating caregivers who will suddenly be too removed, and react more unpredictably and/or aloof, and may even "tune out" in any number of situations that are triggering trauma-memories (Schechter and Rusconi-Serpa 2014). Diminished activation of the limbic system, which originally may be adaptive as a guard against hyperarousal and a protection against chronic severe stress, can be maladaptive in the context of the mother-child relationship and limit the mother's capacity for sensitive responsiveness to her child's cues and emotional needs. Thus, while dissociative symptoms can protect against dysregulation of emotion, aggression, and arousal, such symptoms can also prevent the mother from engaging in sensitive and mutual emotional regulation with

her child. Clinical implications are that one may need to give caregivers who suffer from PTSD with a strong component of dissociative symptoms, tools to become aware of and manage their arousal levels in difficult situations, such that they dissociate less often during parent-child interactions (Schechter et al. 2015b).

7.6 The Role of Therapy

While it is important to state that violent trauma and related PTSD and dissociative symptoms have an important impact on maternal perception and behavior that extends to brain activity and structure, not enough is known about how this impact might be more or less amenable to psychotherapeutic intervention. The literature suggests that different types of evidence-based psychotherapy may change not only perception and behavior but also brain-derived biomarkers such as neural activity patterns, physiologic reactivity, and epigenetic signatures (Roberts et al. 2015). Similarly, psychotherapy outcomes can also be predicted by several biomarkers (Walsh et al. 2016; Norrholm et al. 2016). A review (Weingarten and Strauman 2015) reported the main findings obtained using different neuroimaging methods and highlighted structural and functional brain changes pre- and posttreatment. They showed that psychotherapy and other interventions, such as mindfulness-based stress reduction (MBSR) and meditation/yoga, have an effect on brain function, such as task-based activation or resting state (measured with fMRI and PET/SPECT techniques), or serotonin or dopamine function.

Further study of parental neural activity when analyzed in the context of self-report measures of well-being and observational measures of the dyadic interaction pre- and posttreatment could help clinicians better match a given evidence-based treatment to the needs of a given dyad. Similarly, such work might also fuel better understand of how treating the relationship not only repairs disturbed mother-child interactions and derailed child development, and reduces parenting stress, but also how these interventions may positively impact maternal (parental) brain functioning. A recent study by Swain et al. (2017) showed initial supporting data for a short-term, attachment-based mother-infant psychotherapy (Mom Power; Muzik et al. 2015; see chapter 11) in increasing functional connectivity in mother's brain circuits related to mothers' reflective-self awareness and mood regulation. This study reported that only mothers in the intervention condition versus controls showed enhanced connectivity within the default network regions relevant to reflective self-awareness and mood regulation (e.g., precuneus-ACC connection and amygdala-temporal lobe connection), and that this enhanced connectivity was associated with mothers' reduction in self-reported parenting stress.

7.7 Summary

In conclusion, the literature has shown that the influence of maternal IPV-PTSD on the maternal brain involves neural activity patterns suggestive of cortico-limbic dysregulation in response to a range of stimuli that are evocative of the mother's

traumatic memory traces. It seems more specifically that mothers with IPV-PTSD suffer from impaired functioning of their medial prefrontal cortex when confronted with a trigger of traumatic memory that interferes with their capacity to appraise, understand, and sensitively respond to their child's emotional communication. This can occur when an aspect of the child's appearance, behavior, or that of the mother-child interaction itself becomes a trigger of posttraumatic stress. This can also happen by virtue of their very young child's developmentally determined emotional and behavioral dysregulation and/or the child's helpless state of mind that evokes for the mother her own sense of having been helpless when she was victimized. The associated pattern of neural activation in response to such stimuli (e.g., mother-child separation or scenes of violent adult interactions) mirror the dysregulation of maternal stress physiology, maternal behavior, and a subjective sense of psychological stress with consequent misappraisal of child emotional communication—misappraisal that is often marked by negative and age-incompatible attributions (Schechter and Rusconi-Serpa 2014; Schechter et al. 2015b). The effects of this dysregulation in the context of maternal IPV-PTSD on the very young child during sensitive periods of development of self-regulation and of rudimentary mentalization have been noted to include a mix of internalizing and externalizing symptoms and disturbed attachment (Schechter et al. 2011, 2015b). One of the next challenges will be to identify child "endophenotypes" that can explain, at least in part, individual differences in child outcomes based on gene and/or "epigene" environment interactions. With this in mind, it will be important to follow prospectively and longitudinally children of IPV-PTSD-affected mothers who show greater internalizing (i.e., more anxious-depressive) psychopathology versus externalizing (i.e., more impulsive-aggressive) psychopathology versus neither (i.e., more resilient endophenotype). Such longitudinal studies are needed in an effort to understand transmission of cycles of violence, victimization, and repair across generations. One recent longitudinal study has shown the link between the aforementioned maternal neural activity patterns as predictive of child attachment disturbance, emotional and behavioral dysregulation (Schechter, Moser et al., 2017).

Finally, in order to address the effects of parental IPV-PTSD-related psychobiological—and more specifically, corticolimbic dysregulation on the parent-child relationship and the child's social-emotional development, interventions need to be developed that stimulate hypoactive brain areas involved in emotion regulation—such as the medial prefrontal cortex. These new interventions need not only take into account the neuroimaging findings described in this chapter but have to go further and assess a broader range of biomarkers. Such interventions need to use the identified neural activity patterns and correlated psychological, behavioral, and physiologic measures and epigenetic signatures as indicators or "markers" of outcomes that can be followed in pre- and posttreatment research designs in order to determine what works for whom. An example of this type of study already published with regard to adolescents involved examining neural activity among 23 girls who underwent trauma-focused cognitive behavioral therapy to treat the effects of sexual abuse (Cisler et al. 2015). This study found that

greater amygdala activation in response to threatening and neutral stimuli prior to intervention was a predictor to less favorable treatment outcomes. Additional studies that resonate with these efforts to utilize brain activation as markers for treatment optimization are ongoing (Swain et al. 2017; Perizzolo et al. 2017 published abstract).

In terms of interventions being developed to target the parent-child relationship during infancy and early childhood, our research team in New York and Geneva has developed a brief experimental intervention technique, named the Clinician Assisted Videofeedback Exposure Session(s) or "CAVES" (Schechter et al. 2006, 2015b). CAVES is a three-session evaluative intervention that was originally designed to test if mothers could "change their mind about their toddlers" following a Clinician Assisted Videofeedback Exposure aimed at interactions that the mothers might otherwise avoid. At present, CAVES is being integrated and expanded into a 16-session brief psychotherapy curriculum, called the Clinician Assisted Videofeedback Exposure Approach Therapy or "CAVEAT." Both models utilize, among other probes that are challenging to the dyad, some of the same stimuli that were employed in some of the above-cited neuroimaging research studies (Schechter et al. 2012, 2015a; Moser et al. 2015b), for example, clips of mothers and toddlers (ages 12–42 months) during separation versus play. The MRI procedures overlap with the CAVES only in that the mothers are exposed in both instances to separation (i.e., stressful) and free play (i.e., non-stressful) 30 s video stimuli with their own children (i.e., two out of four different video stimuli that are shown in the CAVES; similar stimuli with unfamiliar children of similar age to their own are shown only in the MRI procedure and not in the CAVES). In the MRI procedure, participating mothers are alone in the scanner and confronted alone with the stimulus without guidance, context, or commentary given by a clinician. And thus, while they may experience the child's helpless state of mind during a separation, for example, as a trauma trigger, there will be no therapist to assist them with the reconsolidation of the trauma-related memory trace by providing an alternative perspective. By contrast, the CAVES is a psychotherapeutic intervention in a consulting room—which is conducted with the same clinician who has previously interviewed the mother and observed live her interactions during the first two visits of the protocol prior to the MRI scan. During the CAVES, the mother is accompanied by this known, reflective "therapist." This therapist jointly attends with the mother interactive sequences containing negative affects in the child and remains attentive to the mother's responses within the videotaped interaction and within the videofeedback (i.e., CAVES) session. The therapist engages the mother in mutual regulation and supports and models parental mentalization with curiosity about the mother's mental representations and mental states that might underlie her interpretation of her child's emotional communication. In so doing, one expects that the medial prefrontal cortex and its top-down regulation of limbic areas will be stimulated, and, as has been shown, in the instance of "Mom Power," by Swain et al. (2017), that limbic activity will be attenuated. Ultimately, the goal is that with greater mastery of self-regulation when faced with challenging

mother-child interactions, a traumatized mother can overcome her dysregulated state and begin to feel good about herself as a mother or, at least, in Winnicott's words as "good-enough mother" (Winnicott 1953).

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Part IV

Healing and Recovery

Resilience, Recovery, and Therapeutic Interventions for Peripartum Women with Histories of Trauma

8

Minden B. Sexton, Diana C. Bennett, Maria Muzik, and Katherine L. Rosenblum

Abstract

Although traumatic experiences increase risk for myriad mental health sequelae, most individuals who experience marked adverse events do not meet the criteria for psychiatric disorders or appear to sustain chronic injury or functional impairments. This chapter entails several of the critical aspects of psychosocial resilience and recovery in the context of distal and proximal trauma. First, we review the literature on posttraumatic well-being among peripartum women. Second, we consider therapeutic processes central to trauma recovery and survivors' care preferences. Finally, we present information on the current state of knowledge regarding the application of empirically supported interventions for major depressive disorder (MDD), posttraumatic stress disorder (PTSD), and affect regulation difficulties to trauma-exposed peripartum women.

8.1 Resilience and Recovery

The construct of resilience within mental health is generally characterized as a biopsychosocially determined general capacity to maintain well-being despite stress exposure or a comprisal of factors that buffer against illness (see Fig. 8.1). For instance, following childhood trauma, MDD, PTSD, and chronic affect regulation

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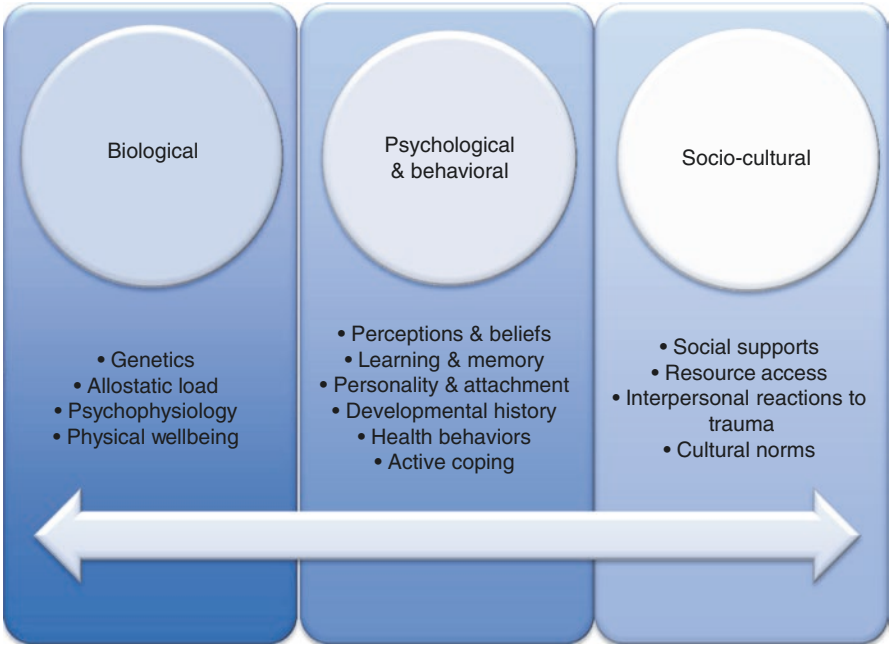

Fig. 8.1 Biopsychosocial model of posttraumatic resilience

difficulties have been repeatedly observed as potential sequelae. Yet, and often overlooked, the overwhelming majority of individuals who experience adversity do not meet diagnostic criteria for mental health disorders. Relatedly, recovery refers to the observation that many individuals who meet the criteria for posttrauma mental health diagnoses do not report persistent complaints. The more common pattern of resistance and recovery from trauma raises several questions. What individual or environmental characteristics are associated with increased ability to withstand stress exposure? Once diagnostic levels of symptoms and impairments are experienced, what naturalistic (i.e., nonintervention) factors are correlated with recovery? Do therapeutic interventions facilitate posttraumatic healing, and for which conditions?

8.2 Naturalistic Processes of Resilience and Recovery in Peripartum Women

8.2.1 Childhood Trauma

For peripartum women, their historical experiences of childhood abuse and neglect may have longstanding effects that impact their pregnancy and child-rearing in adulthood in ways which may increase the risks for intergenerational transmission

of negative outcomes. Several of these adverse consequences are described elsewhere in this volume. The investigations described in this section focus on resilience-related findings from our translational program of research evaluating maternal and infant outcomes among women exposed to childhood maltreatment (CM).

The Maternal Anxiety during the Childbearing Years (MACY; Muzik, PI) study is a longitudinal investigation from pregnancy through 18 months postpartum. The research oversampled women endorsing CM ($N = 214$, including $n = 145$ with CM histories). During the study, women completed surveys and qualitative interviews. Mothers completed questionnaires at delivery, 4, 6, 12, 15, and 18 months postpartum and engaged in free play and structured sessions (at a 6 and 15 months postpartum visit) focused on interactions with their children.

To explore protective factors, our first study (Sexton et al. 2015) examined main and moderating effects of resilience as measured by the Connor-Davidson Resilience Scale (Connor and Davidson 2003) and childhood trauma severity on postpartum depression, PTSD, positive family functioning, and maternal self-confidence. Despite the high rates of CM in this sample, most mothers did not evidence PTSD (79.5% negative for diagnosis) or postpartum MDD (80.4% negative for diagnosis) at 4 months postpartum. Main effects were noted for CM severity and resilience on postpartum PTSD, MDD, and positive family functioning with trauma severity associated with poorer outcomes and resilience associated with better outcomes (i.e., decreased psychiatric risk and improved family support). Mothers endorsing higher levels of resilience were also more likely to report increased sense of parenting mastery.

Specific to moderating effects, the interaction of CM severity and resilience was associated with postpartum PTSD and MDD risk. When stratifying participants into quartiles of highest and lowest CM severity and resilience groups, we found an absence of PTSD in mothers with the lowest levels of CM, irrespective of resilience. However, for mothers with the highest levels of childhood abuse and neglect, the level of resilience was a major protective factor for the presence or absence of PTSD. Specifically, only 8% of those mothers with highest resilience and high CM exposure met PTSD criteria in contrast to 58% of mothers with lowest resilience and high CM. Similarly, among women in the highest resilience group, none met the criteria for MDD, irrespective of CM severity. But for women in the lowest resilience group, the level of resilience made a difference. In this low-resilience group, 25% of women with low levels of CM met diagnostic criteria for postpartum MDD compared to 68% of those with high levels of CM. These results suggest that resilience is critical for all mothers and is associated with improved family well-being, maternal competence, and reduction of PTSD and MDD risk. In addition, particularly for mothers with histories of childhood maltreatment, greater resilience may buffer against some of the common psychiatric outcomes associated with early trauma. This has particular clinical importance. CM histories, discussed elsewhere in this volume, are associated with adverse peripartum outcomes. Yet, resilience-enhancing interventions may offer a pathway to attenuate some deleterious effects associated with childhood trauma.

One facet of resilience, the ability to establish and solicit aid from social support networks, appears particularly protective against postpartum depression in at-risk women. Focusing on mothers with histories of CM, we evaluated the main and moderating effects of CM severity, social support, and income on postpartum depressive symptoms (Muzik et al. 2017). As may be expected, the severity of CM increased the risk of postpartum depression, while annual income and social support were inversely associated with symptoms. We observed a significant support-by-income interaction indicating that high social support mitigated the association between low income and depressive symptoms. Specifically, we found that mothers with high social support and low income reported significantly fewer symptoms than those mothers who also had low income but also experienced low social support. Most importantly, these low-income mothers with high social support were not significantly more symptomatic than high-income maternal peers with high social support. These results highlight the importance of close postpartum interpersonal relationships, particularly for those with limited financial resources.

We further investigated protective factors that may buffer against suicidal ideation (SI) among MACY-enrolled mothers with CM histories during the first 18 months postpartum (Muzik et al. 2016). Longitudinal trajectories indicated that 63% of mothers denied SI at all time points, and most mothers described only transient SI throughout this time frame. Specifically, at 4 months postpartum, resilience, financial resources, and being married or having a cohabitating partner reduced SI risk. At 6 months, the presence of family support was the primary protective factor against thoughts of self-harm. At 12 months, married or cohabitating mothers and those endorsing less trauma-specific shame demonstrated reduced risk of SI. At 15 months, resilience was associated with the presence or absence of SI, but only married/partnered status was predictive of the severity of thoughts. Finally, at 18 months, lower trauma-related shame was the only identified buffer against SI. Together, these results underscore the importance of understanding the interplay and variability of postpartum protective factors. Our findings suggest resilience and associated protective factors are not universal and constant safeguards but may fluctuate in importance depending on temporal changes in mother and infant development and interact with stressors (i.e., returning to work, loss of extended family support after early postpartum, increasing independence of the child, changes in sleeping and eating schedules) that may vary between parenting newborns and toddlers.

8.2.2 Peripartum Resilience to Adulthood Traumas

Psychological strain and morbidities secondary to myriad adulthood traumas are reviewed elsewhere in this volume and not further considered here. However, fewer investigations of resilience have been conducted and warrant attention.

In a study of peripartum resilience following Hurricane Katrina, Harville et al. (2010) found that older mothers, those in partnerships, and Caucasian women demonstrated increased peripartum resilience, whereas those who sustained a direct

injury or illness demonstrated reduced well-being. Surprisingly, experiencing storm-related damage was correlated with report of increased resilience. Some possibilities may explain this finding. It may be the case that loss of property or other resources prompted mothers to engage social support networks and other resources that mitigated strain. Additionally, the immediacy of the stressor within a peripartum context may have increased the propensity of women to utilize active coping skills in response to burden.

In another study of proximal trauma, Hughes and Riches (2003) reviewed pertinent evidence specific to the clinical management of traumatic pregnancy loss. They report that, since the 1970s, close contact between parents and the deceased child has been recommended by care providers based on the belief this practice would assist mourning and reduce negative outcomes. However, in contrast to this philosophy, research found women who did not hold their babies following death were less likely to experience delivery- or miscarriage-related MDD or PTSD. Rather, the facilitation of social support engagement demonstrated improved resistance to psychiatric symptoms. The authors rightly note that for many women who experience pregnancy or child loss, parental autonomy, cultural practices, and personal preferences are paramount. Specifically, it may be the case that mothers elect to hold miscarried or stillborn children for important reasons even if it does increase their risk for psychiatric symptoms. In such cases, it is important to offer grieving parents control during this process. However, current evidence does not appear to justify this practice as a clinician-initiated recommendation for reducing adverse outcomes or facilitating healing. Together, the authors' findings augment the importance of empirical assessment of routine clinical advice in order to limit potential for harming vulnerable populations.

8.2.3 Peripartum Resilience and Recovery in Non-trauma Research

Within non-trauma populations, studies have primarily examined the role of social support as a mechanism to inhibit the development of postpartum MDD. In a synthesis of the literature, Robertson et al. (2004) concluded that maternal perceptions of available emotional and practical support were associated with reduced probability of developing MDD postpartum. In addition to reducing depression risk, Leahy-Warren et al. (2012) further demonstrated that social support was positively associated with maternal self-efficacy in first-time mothers. The consistency with which interpersonal relationships appear associated with positive outcomes is likely exceptionally relevant for traumatized women although consideration of other potential factors associated with peripartum resistance to mental health concerns remains warranted.

While several factors associated with postpartum resilience have been identified, features associated with postpartum recovery from depressive symptoms exhibited during pregnancy have been more elusive, and longitudinal research remains scant. Gotlib et al. (1991) prospectively assessed 730 women from pregnancy through

early postpartum on a number of factors: age, marital duration, stress, severity of depressive symptoms during pregnancy, bonding in the family of origin, coping strategies, and negative attitudes. Regression analyses did not confirm relationships between any of the variables under investigation and recovery from depressive symptoms. Similarly, Andersson et al. (2006) examined maternal age, economic resources, partnership status, alcohol and nicotine use, parity, obesity, and prenatal health difficulties and similarly did not identify factors apart from history of psychiatric disorders prior to pregnancy as predictive of depression and anxiety trajectories from pregnancy to postpartum.

In a separate longitudinal research study with pregnant women (Sexton et al. 2012), we observed 39% of women experiencing significant depressive symptoms at 32 weeks of pregnancy did not exhibit clinically significant symptoms at 12 weeks postpartum. We examined demographic factors, medication and psychotherapy utilization, prenatal exercise behaviors, history of depression, history of negative life events, family and partner support, adequacy of resources, and domestic division of labor as potential predictors of symptom course. Of the factors investigated, prenatal exercise, fewer depressive symptoms in pregnancy, and cohabitation with a partner were related to recovery from depressive symptoms at the postpartum assessment. While this sample was not drawn from a study emphasizing trauma history, a lifetime history of negative event exposure was not associated with reduced likelihood of recovery. Among multiparous mothers, a history of past postpartum depression, but not lifetime depression history, differentiated between those with transient and persisting complaints. Together, results suggest continued research is warranted to further discern factors associated with postpartum mental health recovery in those with prenatal symptoms. The finding that exercise behaviors are associated with improved mental health outcomes may be helpful to investigate further empirically given that most pregnant women experiencing symptoms do not engage in medication or therapy services but may consider other wellness recommendations from care providers.

8.3 Treatment Interventions to Promote Recovery and Resilience

When peripartum women present for therapeutic interventions, proximal and distal traumas often critically influence care. Several of the following chapters detail treatments developed specifically for pregnant, grieving, and postpartum women with histories of adversity and are beyond the scope of this chapter. Here, we will broadly consider salient intervention issues and processes that may emerge when working with traumatized clients, preferences articulated by survivors, and postpartum translations of empirically supported interventions for common posttraumatic presentations.

8.3.1 Therapeutic Issues, Processes, and Survivor Preferences

For many providers, facilitating recovery with traumatized women is simultaneously rewarding and challenging. Trauma survivors often present to care at various

stages of healing with characteristics that may influence the therapeutic relationship and content. Not uncommonly, clients may be mistrustful of therapists or others they perceive as authorities, particularly if their trauma involves a perpetrator in a position of power. Likewise, clients may find themselves triggered when clinician characteristics are similar to stimuli present during traumatic events. For instance, rape survivors may be initially anxious about working with male therapists if their perpetrator was a male or otherwise physically or experientially similar. Others may display strong emotions of fear, anger, shame, and disgust. Concurrently, they may note a numbing of positive emotions and incapability to feel warmth and attachment to others. Some may have processed their trauma in such a way that solidifies negative cognitions about being responsible for their own injuries, that others are generally dangerous, and that they are not capable of recovery. During and after pregnancy, these beliefs can extend to perceptions that they are not "up to the challenge" of parenting, that they are harming their fetus or child with their inability to manage stress, or that others will not help when they need support. Oftentimes, survivors articulate difficulties with communicating effectively with tendencies toward aggressive or passive interactions that limit their ability to have their needs met. The use of Socratic questioning and motivational interviewing strategies may be particularly beneficial for "rolling with resistance," providing affirming support, facilitating understanding, and developing rapport.

It is important to recognize that most of the symptoms that present in the context of depression, PTSD, and affect dysregulation often represent behaviors that were functional at the time the trauma occurred and developed for the purposes of assisting with the prevention of further harm or coping during taxing stressors. For instance, emotional numbing may have originated as a coping strategy to reduce emotional pain when situations could not be physically avoided. However, when these tendencies persist, individuals may find themselves limited in their behavioral and emotional engagement.

Fostering a clinical environment in which survivors feel autonomous, supported, safe, understood, and validated is paramount. For many clients, the therapeutic relationship may be their first disclosure of trauma. Normalizing experiences and matching clients' pace are key to developing trusting and safe relationships. Some may have decided to disclose to others and perceived disclosures as supportive interactions that bolster well-being. Others may have had a history of disclosure experiences that were harmful. For example, those experiencing sexual trauma in the military frequently describe an initial assault followed by secondary stress when attempting to disclose their attack. They may describe being disbelieved, threatened, or minimized during these occasions. In the context of interpersonal violence, many describe receiving questions from social supports such as "why didn't you just leave?," which often appear accusatory. Beyond direct personal experiences, cultural norms influence trauma responding. Rape survivors may conclude that they are to blame for their attack and that it happened to them "for a reason," beliefs that are often societally reinforced. Clients are often particularly attuned to the verbal and nonverbal signals provided by therapists during disclosure encounters. As such, it is particularly important that we examine our own potential biases and are thoughtful in our responses to difficult clinical content.

Recognizing the importance of autonomy and choices of survivors, we (Muzik et al. 2013) solicited treatment preferences of mothers with histories of CM. A subset of mothers enrolled in the MACY study engaged in qualitative interviews. Mothers identified ten factors that may facilitate readiness to enter care: respectful and trusting communication, staff diversity, team approaches to care, availability of a range of care options, accessible and coordinated physical and mental health services, flexible hours, incorporation and welcoming of children and family in care, attention to expansion of social supports, holistic approaches to care, and inspiring and discrete clinic names. Structural and interpersonal adaptions of care to meet the preferences of peripartum women may help resolve ambivalence about seeking care and facilitate entry into recovery interventions.

Many clients present with trauma or developmental experiences that involve marked interpersonal boundary violations. Interventions may focus on facilitating clients' skills with the establishment of limits in their lives and healthy methods of giving and receiving power. It is further paramount to develop healthy exchanges within treatment sessions. The use of physical touch, dual relationships, or extended visits outside of those typically offered within the framework of the intervention can be particularly hazardous when working with those with trauma histories. Some providers elect to use self-disclosure of their own trauma histories, often to encourage the perception that they can be trusted or fully appreciate clients' struggles. This may be consistent with peer support models of care, in which care by a "similar other" is explicitly solicited, as well as with some treatment paradigms. Yet, in therapeutic environments involving traumatized patients, ethical caution and consideration of potential adverse outcomes are critical. For instance, many clients report having a previous care provider who disclosed his or her own survivor history. Although some may perceive this as helpful for reducing reluctance to disclose, self-disclosure may result in clinically unintended consequences. Patients with previous providers who disclosed often remark treatment subsequently "became about them, not about me," feeling embarrassed about experiencing distress when perceiving their providers' experiences as "more severe," or attempting to step into a caretaking role. Some report feeling more incompetent as their therapist seemed to be managing stress fine while they "felt like a mess." Thorough consideration of balancing boundaries and flexibility within intervention environments and utilization of professional consultation can be particularly helpful to reduce the likelihood of inadvertently harming clients.

In addition to notable content of the therapy session, provider self-care is a fundamental aspect of delivering trauma interventions. Vicarious strain from hearing multiple trauma accounts and the energy expended working with survivors has long been associated with compassion fatigue. Colleague support can be especially beneficial. Interventions such as dialectical behavior therapy specifically incorporate the use of consultation teams to promote sustained motivation, peer provider support, advice, and model fidelity. Many other interventions and practices have case conference meetings or other formats for support and skill development that can buffer against provider strain. For many, consideration of work-life balance and engagement in enjoyable and meaningful activities can help bolster coping reserves. While some providers may manage clinical loads entirely

comprised of trauma-related care, others elect to balance the percentage of trauma cases they see with engagement of other types of care or clinical activities. Clinicians are also not immune to many of the traumas their patients have experienced. Those that find they have sufficiently processed their own trauma or are managing their own life stress well may feel more prepared to be fully present and effective with clients.

8.3.2 Peripartum Applications of Empirically Supported Interventions Targeting Depression, PTSD, and Affect Dysregulation

When posttrauma symptoms are present, certain mental health complaints are more likely sequelae of trauma (see Fig. 8.2) with depression, PTSD, and chronic difficulties with affect regulation among those most frequently encountered. Empirically

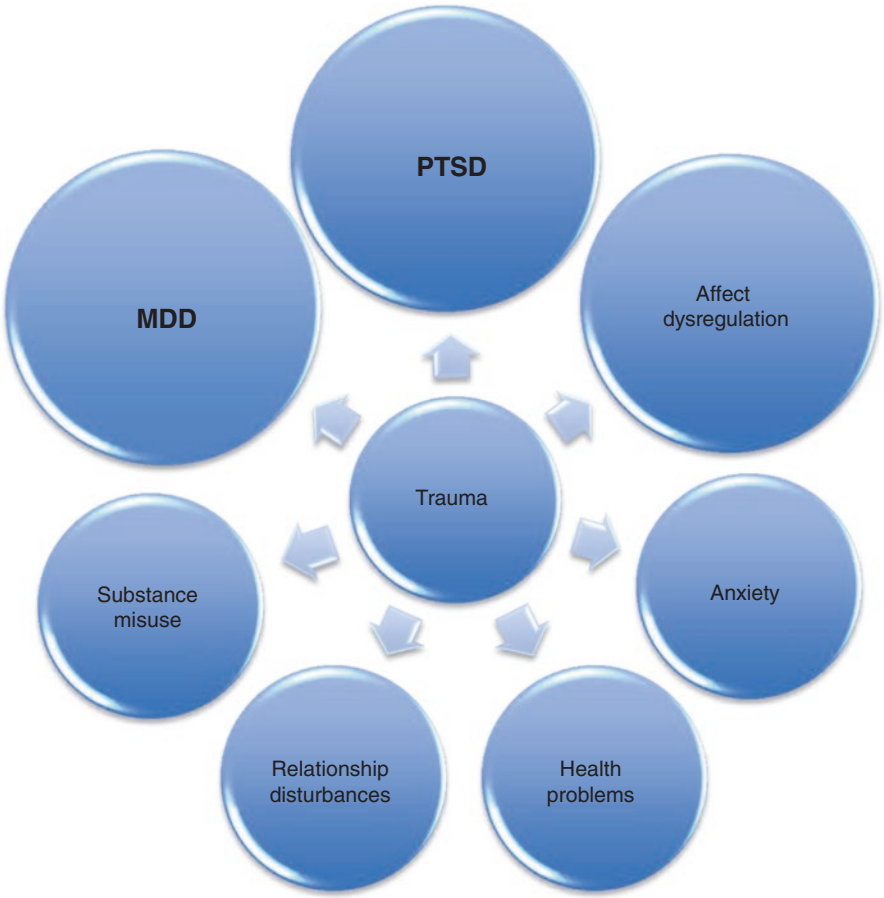

Fig. 8.2 Common posttrauma sequelae

supported interventions for these specific outcomes are extant, and several have been adapted or evaluated for use with peripartum populations.

8.3.3 Clinical Interventions for Peripartum Depression

Interpersonal therapy (IPT) is among the most well-researched cognitive behavioral interventions for peripartum depression with over 25 years of empirical investigation supporting its use with this population. As previously discussed, perceived and utilized social supports are paramount to resilience and recovery among both peripartum women and survivors of trauma. Further, in cases in which trauma occurs developmentally early, attachment to early caregivers is often disrupted. Theoretically, this framework considers disrupted attachments, unfulfilling interpersonal interactions, and role changes which increase the propensity to experience negative emotions. IPT is a time-limited (16 sessions or fewer) approach to care that augments social functioning through selection of a central focus area: role transitions, interpersonal disputes, or grief and role deficits. In a 2003 study, Spinelli and Endicott (2003) found 60% of depressed pregnant women treated with IPT met recovery criteria in contrast with 15% of women assigned to a parenting education control group. O'Hara et al. (2000) demonstrated similar results for women treated postpartum, finding that mothers engaged in IPT demonstrated recovery rates nearly three times higher than waitlist controls. In addition to symptom reduction, engagement in the intervention was associated with increased postpartum and social adjustment. Importantly, IPT appears not only effective at reducing peripartum depression but has also been successfully used to prevent the development of postpartum MDD (Zlotnick et al. 2006).

Cognitive behavioral therapies (CBT) targeting mood changes through the modification of negative thoughts or behaviors have also demonstrated effectiveness in the treatment or prevention of peripartum depression. In a meta-analysis of 37 intervention studies, Sockol et al. (2011) concluded IPT and CBT were both valuable psychotherapies for the treatment of peripartum depression. Further, therapies delivered individually were superior to those offered in group formats, and effect sizes were larger for treatments utilizing an IPT versus CBT framework.

Recently, peripartum sleep has garnered attention as a buffer against depression and anxiety. Insomnia and nightmares have long been associated with the development, maintenance, and recovery from MDD and PTSD in general populations. Several changes during pregnancy (i.e., increased awakenings due to pain, changes in recommended sleep position, nocturia) and postpartum (i.e., breastfeeding, infant wake cycles) provide new threats to peripartum women's ability to obtain sufficient sleep. To concurrently target sleep and mood, Swanson et al. (2013) conducted an open pilot translation of cognitive behavioral therapy for insomnia incorporating postpartum-specific modifications for mothers with depression. Adaptations included solicitation of partner support to assist with nighttime feedings, psychoeducation regarding regulation of infant sleep cycles, and the associations between sleep and postpartum mood, permissibility of brief naps, and flexibility in treatment

scheduling hours. Though further examination is warranted, the authors preliminarily report posttreatment increases in sleep efficiency and sleep quality and reductions in total time awake at night, mood symptoms, insomnia severity, and fatigue.

8.3.4 Clinical Interventions for PTSD

A strong literature supports the efficacy of psychotherapy for PTSD, most notably prolonged exposure (PE; Foa et al. 2007) and cognitive processing therapy (CPT; Resick and Schnicke 1993), each of which was initially developed for use with survivors of sexual trauma but are well validated for use following interpersonal violence experienced throughout the lifespan, combat trauma, accidents, and other types of trauma. PE is based on emotional processing theory, a conceptualization of posttraumatic reactions that includes feared trauma-related stimuli generalizing to other stimuli through avoidance. PE focuses on disaffirming these maladaptive fear structures through habituation across exposure to feared stimuli. PE is therefore an exposure-based therapy that incorporates imaginal exposure, for reprocessing the trauma memory, and in vivo exposure, to overcome avoidance of real-world situations and stimuli and promote engagement in valued areas. There is also a processing component to facilitate changes in trauma-related cognitions through these exposure tasks. CPT, also a cognitive behavioral treatment, is grounded in social cognitive theory, which asserts that distorted posttrauma thoughts have an effect on emotions and behaviors. This theory suggests that new information is processed in accordance with existing schemas or that schemas are changed to accommodate new information. Over-accommodation may occur in such a way that schemas about oneself, others, and the world are negatively altered to maintain a sense of control and safety. CPT focuses on the identification, examination, and alteration of maladaptive beliefs maintaining PTSD symptoms, with special attention to how the traumatic event has impacted the individual in the domains of safety, intimacy, power and control, esteem, and trust. Through modifying cognitions, behavioral approach rather than avoidance is facilitated.

Meta-analyses and review articles have identified significant reductions in PTSD symptoms (Bradley et al. 2005), including large effect sizes posttreatment and medium-to-large effect sizes at follow-up compared to controls, with similar effects across both PE and CPT (Powers et al. 2010). Among samples of women, both CPT and PE have been demonstrated as effective (Dossa and Hatem 2012; Resick et al. 2002), with either no differences in effectiveness or treatment completion between men and women or demonstrating better outcomes for women (Mouilso et al. 2015; Walter et al. 2014).

Whereas some common pharmacological treatments for anxiety may have risks for use during pregnancy, evidence indicates psychotherapy is preferred over medication by most pregnant women, and exposure-based treatments are considered safe for use during pregnancy (Arch et al. 2012). Arch et al.'s (2012) review of the literature indicates untreated anxiety disorders likely pose greater risk than even the most intense exposure-based treatments, such as PE, for pregnant women. Both PE and

CPT include components that target posttrauma cognitions and appraisals, including those that may affect the woman's relationship to her infant, across broad themes such as safety (of the infant and the woman herself) and trust (of medical professionals, of other caregivers, or of herself as a caregiver) (Ayers et al. 2007).

The extant research on trauma-focused treatments during pregnancy has consisted of case studies. Although larger-scale research is lacking, results are encouraging. Ayers et al. (2007) reviewed the literature and suggested that although the same treatments are likely to be effective in postnatal PTSD, when a traumatic birth is the index trauma, there may be unique aspects to the presentation such that women may avoid sexual activity, develop a fear of childbirth, have difficulty bonding to the child, or become anxiously attached to the child. They described two case studies on the use of trauma-focused treatment related to traumatic birth which indicate that these treatments can be effective and tailored to the individual, taking into account the woman's emotions (such as fear or shame) and cognitive reactions to the traumatic event. Another case study of exposure-based PTSD treatment during pregnancy demonstrated effective reduction in treatment without any harm to the mother, developing fetus, or infant (Twohig and O'Donohue 2007). Although limited in scope, these studies suggest exposure-based PTSD treatment during pregnancy is likely safe and effective.

The literature to date has yielded several recommendations for implementing trauma-focused treatment during pregnancy. Turton et al. (2001) advocate referral to treatment when symptoms are demonstrated and, even prophylactically during subsequent pregnancies, as during this time a resurgence of symptoms may occur. Twohig and O'Donohue (2007) advise that when beginning exposure-based treatment with a pregnant woman, the provider should inform the patient of the limited data on trauma-focused treatments during pregnancy as well as the general effectiveness of such treatments and consult with the patient's physician both prior to initiating treatment and throughout treatment should any health issues arise. Finally, Arch et al. (2012) offer suggestions as to how interoceptive exposure tasks can be modified for use during pregnancy, such as monitoring the pregnant woman's heart rate when breathing may be affected. Consultation with the patient's physician as exposure tasks are determined is recommended.

8.3.5 Affect Regulation and Borderline Personality Disorder Intervention

Many women with trauma histories present for treatment with complicated diagnostic pictures and severe symptoms of chronic affect dysregulation and environmental reactivity, including borderline personality disorder (BPD), a diagnosis that includes symptoms such as chronic suicidal ideation and self-injury. Dialectical behavior therapy (DBT; Linehan 1993) is an intensive treatment for BPD and emotional dysregulation and includes the teaching of skills such as mindfulness, emotion regulation, distress tolerance, and interpersonal effectiveness with attention to factors that alleviate dysfunctional behaviors. DBT is typically conducted with a

combination of participation in a weekly skills group, weekly individual psychotherapy, and phone coaching, generally for 6 months to a year. Several studies have demonstrated the efficacy of DBT for treatment engagement and in behavioral changes, such as a decrease in suicide attempts and depressive symptoms (see Lynch et al. 2007, for a review). Combined DBT and PE intervention for individuals with PTSD who would benefit from additional skills before beginning trauma-focused treatment has been recently evaluated. The integrated intervention has been found to reduce PTSD symptoms as well as suicidal ideation, depression, anxiety, shame, dissociation, and trauma-related guilt cognitions among women (Harned et al. 2012). Although no known studies have examined the peripartum use of DBT or DBT with PE, Apter-Danon and Candilis-Huisman (2005) assert treatment for BPD should be implemented as early in pregnancy or postpartum as possible. The authors identify pregnancy as a prime point for intervention among women with BPD, given the consequences of poor self-care on the woman and the developing fetus' health and the fact that the impending birth of a child may be a highly motivating factor for treatment. The authors recommend treatment that incorporates the infant after birth to address infant emotion dysregulation and enhance maternal responsivity.

Conclusions

Resilience and recovery following adversity are the most common posttrauma trajectories. Peripartum social support is one of the most salient identified factors for promoting wellness during and after pregnancy. When clinically relevant difficulties do occur, particular therapeutic processes and interpersonal strategies may promote engagement and recovery. Several interventions that are developed to address depression, PTSD, and affect regulation complaints appear well suited for use in peripartum.

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Parenting in the Context of Trauma: Dyadic Interventions for Trauma-Exposed Parents and Their Young Children

9

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Abstract

Early caregiver-child relationships are foundational to early development and central to efforts to promote well-being and prevent psychopathology. We discuss how parenting can be affected by caregivers' experience of trauma, and how children's early relationships with caregivers contribute to their development and risk for psychopathology. Recent research suggests that the quality of caregiving moderates the effect of a child's genetic risk for psychopathology. The protective role of sensitive caregiving is especially vital in the context of stress and trauma. Several psychotherapeutic interventions show promise in ameliorating the types of caregiver-child relationship difficulties that are common among trauma-exposed parents and their young children. These interventions have been found to be effective in increasing the rates of secure attachment and sensitive caregiving, and reducing early psychopathology. Emerging evidence suggests some interventions may be associated with changes to parents' neural circuitry that underlies sensitive caregiving. Relationship-based psychotherapeutic interventions are promising in the promotion of well-being and prevention of psychopathology in at-risk families.

9.1 Introduction

Mothers and other caregivers play a critical role in the lives of their young children, and it is important to consider how a caregivers' experience of trauma may affect their parenting and the development of their young children. The first months and years of a child's life are characterized by rapid development that is foundational to

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a multitude of outcomes later on. These early years are when experience is most able to "get under the skin" to affect the course of development (Fox et al. 2010). Sensitive periods are most prevalent during the prenatal period through early childhood (Essex et al. 2013), as this is when many neural structures are built. Brain architecture is built through the dynamic interaction of genetic and environmental factors, such that later cognitive and emotional abilities rely on that early foundation (Fox et al. 2010). While the biological and genetic mechanisms for the effect of experience on development are not yet fully understood, research is converging on the idea that early experiences may change the "read" of genetic information (e.g., "vulnerability gene"), thus influencing which genetic information is translated into structure and functionality of the person's biological systems. This is termed epigenetics and currently a high interest area in research on how early experiences get biologically imprinted (Essex et al. 2013).

9.2 Early Roots of Psychopathology

There are numerous factors in early childhood that have been linked to elevated risk of later psychopathology. Many mental disorders, especially schizophrenia, autism, bipolar disorder, and ADHD, have heritability estimates above 50%, suggesting significant genetic influence (Rutter et al. 2006). Importantly, genetic effects are rarely deterministic and are often modified by environmental influences. For example, a recent study found that early maternal insensitivity is associated with an elevated risk for externalizing problems, but only among children who are at higher genetic risk (King et al. 2016). Genetic factors also influence how susceptible individuals are to their environments or to what extent either negative or positive environmental influences will affect development (Ellis et al. 2011).

Infant temperament, or a set of biologically based tendencies that describe how an infant interacts with the world (Rothbart and Bates 1998), can be seen as the early roots of some forms of psychopathology (Nigg 2006). Individual differences in aspects of temperament, like approach behaviors and inhibition, attention, and novelty seeking, are associated with genes related to the activity level of the dopamine D4 receptor (DRD4) and the serotonin transporter receptor (5HTTLPR; Auerbach et al. 2001). But the ultimate effect of a gene on behavior depends on an individual's early experience, with social-emotional experience especially critical (Propper and Moore 2006). Several studies have found that genetic risk is either enhanced by or reduced by environmental influences like insensitive parenting (King et al. 2016) or child maltreatment (Byrd and Manuck 2014). Importantly, children who are more vulnerable due to their genetic or temperamental profile appear to be influenced to a greater degree by both positive and negative parenting (Ellis et al. 2011). Thus, even when the underlying risk is biological, there is a strong body of work suggesting that parenting either mitigates or amplifies that risk. For caregivers who have experienced trauma, this is an especially critical pathway to risk, as caregivers' own experiences (e.g., abuse or neglect when they were a child, domestic violence, etc.) can affect their caregiving behaviors, which then affect their child's development.

Human infants have a great degree of neural plasticity, and their development depends on environmental experiences (Greenough et al. 1987). Because human infants are born unable to care for themselves, care from a sensitive and responsive caregiver is a foundational aspect of their early experiences. Young children who experience caregiving that is abusive or neglectful are at higher risk for psychopathology (Jaffee 2017), and there is evidence that some of this risk is conferred through epigenetic processes (Romens et al. 2015). Several other factors such as poverty (Evans and Kim 2013), premature birth (Montagna and Nosarti 2016), and parental psychopathology (Vostanis et al. 2006) have also been associated with increased risk for psychopathology, with higher risk associated with the co-occurrence of multiple risk factors (Evans et al. 2013).

9.3 Early Relationships with Caregivers

At the core of young children's early experiences are their social interactions with their caregivers. Infants experience their environment through the lens of their relationship with their caregivers and depend on their caregivers to scaffold their cognitive, social, behavioral, and physical development. Beyond the many skills that caregivers teach and model for young children, caregivers also foster children's development of self-regulation. Before children are capable of regulating themselves, their caregivers help them to cope with negative arousal by reading their cues, anticipating transitions, redirecting their attention, and responding promptly to their needs. As children practice these skills within their caregiving relationship, co-regulation experiences enable children to begin to develop strategies to regulate themselves more and more independently (Brophy-Herb et al. 2012). Sensitive, responsive caregiving is associated with toddlers' self-regulation skills concurrently (Calkins and Johnson 1998) and longitudinally (Bernier et al. 2010). In contrast, intrusive, insensitive parenting is associated with poorer self-regulation skills in young children (Calkins and Johnson 1998). When caregivers are faced with parenting in the context of their own trauma, it can be considerably more difficult to co-regulate their young children and provide the sensitive and nurturing care that young children need. Caregivers who have experienced trauma may be struggling to manage their own emotions and may be triggered by their child's emotions and behavior. Because caregiving behaviors are related to a caregiver's experiences, and associated with children's outcomes, trauma-exposed caregivers and their young children are considered at higher risk for later difficulties.

According to attachment theory, internal working models, or mental representations of relationships, are foundational to attachment relationships (Bowlby 1969). Parents' own history in relationships (e.g., history of maltreatment or trauma) affects the interpretations and attributions that they make with their child. Parents' subjective experience of their child affects the way they behave with their child, which then affects how the child behaves with the parent. Mothers who tend to make balanced, positive, and accepting interpretations of their child's behavior also tend to have more sensitive behavior and more positive interactions with their infant (Rosenblum et al. 2006). Sensitive and responsive parenting makes secure

attachment styles more likely, while insensitive, unpredictable, and/or harsh parenting increases the likelihood of children developing insecure attachment relationships. Children who develop a secure attachment relationship with a caregiver are able to both seek comfort and support from their caregiver, and use their caregiver as a secure base from which to explore, whereas children with insecure attachment relationships may be unable to be comforted by their caregiver or appear undisturbed by their caregiver's departure while we know from the literature that they are in fact very distressed showing very high levels of stress hormone. A supportive early caregiver-child relationship likely sets the stage for cascades of positive parent-child interactions that promote a young child's development in many domains. A secure attachment is most likely for children who have a caregiver who is sensitive and responsive (Thompson 2006), is well-adjusted (NICHD Early Child Care Research Network 1997), and is able to reflect on their infant's internal state and motivations (Meins et al. 2001). Caregivers who have experienced trauma, however, are likely to have a more difficult time providing the kind of caregiving that is most likely to lead to secure attachment relationships. Trauma-exposed caregivers may not have experienced sensitive and responsive care in their own childhood or might be preoccupied with their own emotions. These factors can make it more difficult for them to reflect on their child's internal state and to behave in nurturing ways with their children. Insecure early attachment relationships are associated with poorer peer relationships (Schneider et al. 2001), poorer emotion regulation and self-reliance (Sroufe 2005), and more behavior problems and internalizing problems, especially in the context of other family risks (Shaw et al. 1997).

Early attachment relationships are particularly critical in the context of stress and trauma. When a child is securely attached to a caregiver, the presence of that caregiver helps them to modulate their physiological and behavioral responses to stressors, buffering the potential effects of stress or trauma on the child (Gunnar and Quevedo 2007). However, when children lack a secure attachment relationship, they are not as able to regulate their stress responses, as demonstrated by disturbances in the endocrine stress response (i.e., hypothalamic-pituitary-adrenal (HPA) axis activity) and by increased likelihood of later behavioral and emotional problems (Gunnar and Quevedo 2007). Under stressful circumstances, caregivers are also less likely to be emotionally available to co-regulate their young children, and consequently the child is even more at risk for an insecure early attachment relationship. These processes are thought to be central to the intergenerational transmission of risk. Given the central role that caregivers play in co-regulating and socializing young children, facilitating their interaction with their environment, and responding to stress, early interventions that address the caregiver-child dyad are likely to promote positive mental health outcomes in children over time.

9.4 Interventions

A number of psychotherapeutic interventions exist that aim to improve the caregiver-child relationship, with the ultimate goal of benefitting young children's developmental outcomes (see Table 9.1). While several approaches have been designed

Table 9.1 Psychotherapeutic interventions targeting the caregiver-child relationship in early childhood

Intervention	Population/participants/ duration/setting	Treatment description	Evidence
Attachment and Biobehavioral Catch-Up (ABC) **For infants (ABC-I)** (Bernard et al. 2012, 2017, 2015a, b, c; Bick and Dozier 2013; Dozier et al. 2009; Lewis-Morrarty et al. 2012; Lind et al. 2014; Sprang 2009; Yarger et al. 2016) **For toddlers (ABC-T)** (Lind et al. 2017)	ABC-I: 6 months to 2 years old and experienced early adversity ABC-T: 2–4 years old and experienced early adversity Parent-child dyad Weekly for 1 h for ten sessions Home	• Help caregiver to provide nurturing care even when child behaves in ways that push the caregiver away • Help caregivers provide a responsive, predictable environment that helps the child develop regulatory capacities • Caregivers are coached to follow the child's lead and show delight in the child • Help caregivers to decrease behaviors that may be frightening or overwhelming to the child • ABC-T: Teach caregivers ways to co-regulate their children when they are distressed • Video feedback, homework, and in-the-moment feedback are used to reach these goals	ABC-I: RCTs with at-risk children ($N = 24–120$) and children in foster care ($N = 46–173$). ABC-I is associated with: • Lower rates of child disorganized attachment, higher rates of secure attachment, and less avoidant behavior • Lower child negative affect during a challenging task • Lower child internalizing and externalizing behavior • Higher child cognitive flexibility, theory of mind skills, and receptive vocabulary • More normative child diurnal pattern of cortisol production, with effects persisting into preschool age • Improvement in sensitive caregiving, decreases in intrusive caregiving • Enhanced maternal ERP responses for emotional faces relative to neutral faces • Lower scores on measures of child abuse potential and parenting stress ABC-T: RCT with children in foster care ($N = 173$). ABC-T is associated with: • Lower rates of attention problems, higher cognitive flexibility
Child and Family Interagency Resource, Support, and Training (Child FIRST) (Lowell et al. 2011)	0–5-year-old children at high risk of emotional, behavioral, or developmental problems or child maltreatment Parent-child dyad 1 month 2×/week and then weekly for 1–1.5 h for 6–12 months Home or early care and education setting	• Team consists of mental health/developmental clinician and a care coordinator • Observation and collaboration with teachers in early care and education setting • Trauma-informed child-parent psychotherapy and parent guidance • Care coordination and connection to community services	RCT with multi-risk urban mothers and children ($N = 157$). Child FIRST is associated with: • Improved child language • Improved child externalizing symptoms • Less parenting stress • Lower maternal psychopathology symptoms • Less protective service involvement • Greater access to wanted services

(continued)

Table 9.1 (continued)

Intervention	Population/participants/ duration/setting	Treatment description	Evidence
Child-Parent Psychotherapy (CPP) (Cicchetti et al. 2006, 1999; Lieberman et al. 2006, 2005, 1991; Toth et al. 2002)	0–5 years old, exposed to trauma Parent-child dyad, with some parent-only sessions 1–1.5-h sessions, weekly for ~1 year (M = 32 sessions) Home or clinic	• Based on attachment, psychodynamic, developmental, trauma, social learning, and cognitive behavioral theories • Foundational phase focuses on developing trauma-informed formulation of dyad's functioning • Core intervention phase utilizes primarily play-based developmental-relational therapy • Creates shared positive memories • Dyad develops a play-based narrative of traumatic experience • Sustainability and termination phase helps family process upcoming goodbye and review family's story • Focus on safety, affect regulation, reciprocity in relationships, continuity of daily living, and focus on the traumatic event • Reflective supervision	RCTs with anxiously attached dyads (N = 93), children with depressed mothers (N = 108, 198), low-income families with a history of maltreatment (N = 122, 137), witnesses of domestic violence (N = 75, 50). CPP is associated with: • More positive mother-child relationship expectations • Higher parental empathic responsiveness and goal-corrected partnership, lower angry behavior • Lower likelihood of child anxious attachment • Increase in levels of child secure attachment • Decline in child traumatic stress disorder symptoms and behavior problems • Reductions in problematic maternal representations • Decline in mothers' avoidant symptoms, general distress, and PTSD symptoms
Circle of Security (COS) Home Visiting-4 (COS-HV4) (Cassidy et al. 2011) **COS Group** (Hoffman et al. 2006; Huber et al. 2015) **COS-Parenting (COS-P)** (Cassidy et al. 2017)	0–5 years old, high-risk populations (e.g., enrolled in Early Head Start, teen moms, irritable babies) COS-HV4: Parent-only; COS group, COS-P: Parent group COS-HV4: 1 3-h assessment session and 4 1.5-h sessions over 3 months; COS group: 20 weekly 1.25-h sessions, COS-P: 10 weekly 1.5-h sessions COS-HV4: Home; COS Group, COS-P: Clinic or community	• Teach caregivers about attachment theory using the "circle" graphic • Help parents to provide a safe haven in times of distress or threat and a secure base in times of exploration • Teach parents about ways children might "miscue" what they need • Help caregivers to see how their own strong feelings influence their responses to their children • COS-HV4, Group: Review of video of caregiver interacting with his or her own child • COS-P: DVD-based	COS-HV4 RCT with low-income mothers with irritable infants (N = 220). COS-HV4 is associated with: • Reduced risk of child insecure attachment, for dismissing mothers with highly irritable infants COS Group pre-post design with low-income children and their caregivers (N = 65), and clinically-referred children and their caregivers (N = 83). COS Group is associated with: • Shift from child disorganized to organized (mostly secure) attachment classifications • Improved caregiver reflective functioning and caregiving representations COS-P RCT with low-income children and their caregivers (N = 141). COS-P is associated with: • Improved child inhibitory control • Fewer unsupportive maternal responses to child distress

Minding the Baby (Sadler et al. 2013)	Prenatal to 2-year-old children; first-time parents at high risk for problems (e.g., young maternal age, poverty, history of trauma) Parent-child dyad Weekly for 1 h from prenatally until baby is 1 and then biweekly until baby is 2 Home	• Team consists of pediatric nurse practitioner and clinical social worker; providers alternate who attends home visit • Help parents to become more reflective and responsive in their interactions with their infant • When applicable, social worker conducts mental health assessment and provides treatment to parent • Home visitors maintain close contact with mother's and child's physicians and coach families with regard to health-care information and accessing social services	RCT with primiparous women receiving care at a community health center ($N = 105$). Minding the Baby is associated with: • Higher likelihood of being on-track with child immunization schedule • Lower rates of rapid subsequent childbearing • Lower likelihood of referral to Child Protective Services • Higher likelihood of child secure attachment relationship; lower likelihood of child disorganized attachment relationship • Improved maternal capacity to reflect on their own and their child's experience for mothers who were high risk • Less likely to have disrupted mother-infant interactions when mothers were teenagers
Mom Power (MP) (LePlatte et al. 2012; Muzik et al. Under Review, 2014, 2015, 2016, 2009; Rosenblum et al. 2017a, b; Swain et al. 2017, 2016)	Prenatal to 5-year-old children. High-risk populations often with maternal trauma and psychopathology Separate mother and child groups run simultaneously, with guided parent-child interactions 3 h group, weekly for 10 weeks, plus one to three individual sessions Clinic or community setting (e.g., church, community center)	• Two facilitators run mother group • Teach an attachment-based parenting education curriculum using the "tree" metaphor of building roots (connecting) and branching out (exploring) • Focus on maternal self-care, teaching skills such as diaphragmatic breathing and progressive muscle relaxation • Enhances peer/social support with other group members and with parenting support in mothers' lives • Includes in vivo guided parent-child interactions (separations and reunions) • Aims to enhance engagement and connects mothers to ongoing care when indicated • Corresponding child curriculum focused on child-led play	Pre-post design with low-income mothers and their children ($N = 99$). MP is associated with: • Decreased maternal depression, PTSD, and caregiving helplessness • Improved maternal reflective capacity • Improved parenting confidence, social support, and connection to care RCT with high-risk mothers and their children ($N = 122$). MP is associated with: • Improvements in mental health symptoms and parenting stress • Improved maternal reflective capacity • Increase in "balanced" maternal representations • Better outcomes for mothers with a history of interpersonal trauma • Improvement in mothers' brain-based indices of social cognition and empathy

(continued)

Table 9.1 (continued)

Intervention	Population/participants/ duration/setting	Treatment description	Evidence
Multidimensional Treatment Foster Care-Preschool/ Preventive (MTFC-P) (Fisher et al. 2005, 2007, 2011; Fisher and Kim 2007; Fisher and Stoolmiller 2008)	3–6-year-old children at risk of out-of-home placement Child resides with MTFC-P foster family and attends weekly playgroup; parent(s) meet with family therapist and then parents and child meet with family therapist 9–12 months MTFC-P foster home, clinic	• Child resides in MTFC-P foster home • Child attends weekly therapeutic play group • Foster carers implement treatment plan (e.g., behavioral management strategies) and attend weekly meetings with other MTFC-P parents • Family therapist meets weekly with biological/ adoptive parents for parent training and problem-solving; child is included in later sessions; this continues about 3 months after child is reunified	RCT with children in need of a new foster placement (N = 90–177). MTFC-P is associated with: • Fewer failed foster placements • Increase in child secure attachment behavior • Decrease in child avoidant behavior • More normative child diurnal pattern of cortisol production • Protection from effects of placement changes on child's diurnal HPA axis activity • Reduced foster parent stress
Parent-Child Interaction Therapy (PCIT) (Bagner and Eyberg 2007; Kennedy et al. 2016; Leung et al. 2017; McCabe and Yeh 2009; Mersky et al. 2016; Solomon et al. 2008; Ward et al. 2016)	Children ages 2–7 years old with behavior and caregiver-child relationship problems Parent-child dyad 1-h weekly sessions for approximately 14 weeks (not time limited) Clinic	• Focuses on decreasing externalizing child behavior problems, increasing child social skills and cooperation, and improving the parent-child attachment relationship • Teaches parents play-therapy skills to use as social reinforcers of positive child behavior (child-directed interaction) and behavior management skills to decrease negative child behavior (parent-directed interaction) • Parents are taught and practice these skills with their child while live coached by a therapist through an ear piece	RCTs with children with behavior problems (meta-analysis N = 372), premature birth (N = 28), cognitive impairments (N = 30), high-functioning autism spectrum disorder (N = 19), maltreating parents and their children (meta-analysis N = 571), foster families (N = 102), Chinese families (N = 64, 111), and Mexican-American families (N = 58). PCIT is associated with: • Increased positive parenting behaviors and decreased negative parenting behaviors • Increased child compliance and adaptability • Improved parent-reported child internalizing problems, externalizing problems, and attention problems • Improvement in children's cardiac vagal regulation • More normative levels of parental stress • Significantly fewer re-reports of child maltreatment
Theraplay (Wettig et al. 2011)	0–18 years old with behavior problems Parent-child dyad 30–45-min sessions weekly for 18–24 weeks, then 4 follow-up sessions Clinic	• Play therapy for children and their caregiver; very few toys—play centers around social interaction • Child-caregiver dyad participates in challenging, engaging, and nurturing activities • Aim to recreate a "healthy mother-child relationship"	Pre-post control group study with children with language disorders, behavior problems, and shyness (N = 22,167). Theraplay is associated with: • Improved child assertiveness, self-confidence, and trust • Improved child expressive and receptive communication • Reduced child social withdrawal

specifically with trauma-exposed caregivers in mind (e.g., Child-Parent Psychotherapy, Attachment and Biobehavioral Catch-up, Mom Power), most have been proven effective in high-risk populations, and all have shown promise in ameliorating the types of relational difficulties that can exist among trauma-exposed families. These approaches conceptualize the caregiver-child relationship as the agent of change and generally aim to increase sensitive, responsive caregiving that typically underlies secure attachment relationships and positive developmental outcomes. While other types of interventions, such as behavioral modification (e.g., The Incredible Years), home-visiting programs (e.g., Nurse Family Partnership, Healthy Families America, Early Head Start, Promoting First Relationships), and parenting programs administered by individuals without advanced training in psychotherapy (e.g., Triple P, Early Pathways Program), also have proven to benefit young children, they are not the focus of this review. Several interventions have been developed that target a wide age range of children, but to our knowledge have not yet been evaluated via randomized controlled trial specifically in early childhood populations (e.g., Filial Family Therapy, Trust-Based Relational Intervention, Dyadic Developmental Psychotherapy), and are thus not included in this review. Below, we discuss several prominent treatment approaches along with the evidence supporting their use. Some interventions have an especially wide base of evidence, and in these cases, only select papers are highlighted.

Child-Parent Psychotherapy Child-Parent Psychotherapy (CPP) is an intervention model for children aged 0–5 who have experienced traumatic events and have behavioral attachment, or psychiatric problems (Lieberman and Van Horn 2004, 2008). CPP specifically targets those who have experienced domestic violence, medical trauma, or separation from a caregiver, as in military families, foster care, or similar circumstances. Based on attachment theory, and borrowing from psychodynamic, developmental, trauma, social learning, and cognitive behavioral theories, CPP aims to use the caregiver-child relationship as the vehicle to restore a child's well-being. One of the key features of CPP is its focus on trauma; both the child's and caregiver's history of trauma are explored, and the clinician works to help the caregiver(s) to identify ways that their history might impact the way they understand and respond to their child. Caregivers may or may not be referred for their own individual treatment, depending on their particular circumstances.

CPP begins with a foundational phase wherein information is gathered about the caregiver and child's history and symptoms, and a trauma-informed formulation of the dyad's functioning is developed. In the core intervention phase of treatment, the caregiver-child dyad engages in play-based developmental-relational therapy wherein the focus of the work is on developing a play-based narrative about the traumatic experience, acknowledging the impact of the trauma, as well as creating shared positive memories and engaging in pleasurable joint activities. In contrast to exposure-based treatments, in CPP, the clinician introduces the trauma narrative but allows play to be child-directed. Clinicians utilize "ports of entry" (i.e., potential targets of intervention throughout a session) to provide information, help the dyad to notice something in the relationship, or shift the dyad's understanding of

something with the ultimate goal of helping the dyad to heal from the trauma. The last phase of treatment, the sustainability and termination phase, involves processing the upcoming goodbye and reviewing the family's story.

Throughout all phases of treatment, there is substantial emphasis on safety and how the caregiver can assure that the child remains physically and psychologically safe both in more material ways (e.g., safe housing, access to services) and psychological ways (e.g., acknowledgment of past risks to safety, consistency and predictability in relationships). CPP can be conducted with biological parents and/or foster or adoptive parents. Whether or not the perpetrator of the trauma is the caregiver participating in CPP, a crucial goal of treatment is ensuring that the child is currently safe, and when appropriate, clinicians often collaborate with child welfare workers. CPP clinicians help to support the caregiver-child relationship by providing developmental guidance as needed, reframing misattributions that may be shaped by the caregiver's history, and regulating both the child's and parent's affect during emotionally charged play and discussions. CPP clinicians participate in reflective supervision or consultation, which allows clinicians to explore countertransference, become aware of cultural blind spots, and prioritize self-care. The time course of each phase of CPP is fluid and depends on each family's needs. Generally, however, a course of treatment lasts about 1 year, with weekly 1-hour sessions, conducted either in a clinic or in a family's home.

CPP has a well-established evidence base and has had several randomized controlled trials (RCT). In an RCT with a diverse sample of 3–5-year-old children (N = 75) and their mothers who had all experienced domestic violence, children who received CPP had significant reductions in both behavior problems and traumatic stress symptoms, and mothers who received CPP had significant reductions in avoidant symptoms (Lieberman et al. 2005). Six months later, CPP children continued to show fewer behavior problems, and CPP mothers had reductions in general distress (N = 50; Lieberman et al. 2006). Similar intervention effects are evident for a subsample of higher-risk children, with effects maintained at 6-month follow-up (Ghosh Ippen et al. 2011). In two RCTs, CPP was associated with increases in rates of secure attachment for maltreated infants, and children of depressed mothers, but no differences were found in rates of secure attachment between CPP and a psychoeducational parenting intervention (Cicchetti et al. 2006). An RCT with maltreated preschoolers (N = 122) found that children who received CPP (called Preschooler-Parent Psychotherapy in this study) had improved representations of themselves and of their caregivers, as well as improved relationship expectations (Toth et al. 2002). In an RCT of anxiously attached Latino infants (N = 93), CPP was associated with toddlers with lower avoidance, resistance, and anger and mothers with higher empathy and interactiveness with their children (Lieberman et al. 1991). Studies of potential effects of CPP on the biology of children and caregivers who have experienced trauma are currently in progress.

Circle of Security Circle of Security (COS) is an intervention for parents of children from birth to 5, aimed at helping parents to become more attuned to their children's attachment needs (Powell et al. 2014). COS utilizes a user-friendly graphic ("the

circle") to highlight the two primary modes of the attachment system; parents provide a safe haven to their child in times of distress or threat, and a secure base when the child is able to venture out and explore. COS teaches parents about the ways that young children might "miscue" what they need (e.g., push parents away when they are in need of a welcoming, safe haven), helps parents to improve their observational and inferential skills related to their child's behavior, and also helps parents to identify the way that their own strong feelings can interfere with their ability to respond appropriately to their children's needs. The COS program was initially designed as a 20-week multifamily group format that involved videotaped observations and feedback guided by clinician co-leaders. Numerous adaptations of the program have since been developed, including a four-session home-based program targeting high-risk, low-income parents of infants that also utilized video feedback of caregiver-child interactions. More recently, COS has been modified into a ten-session DVD-based parent group intervention, Circle of Security Parenting (COS-P), that utilizes psychoeducation and standardized video clips in lieu of personalized video feedback.

COS has become widely used in clinical settings and has an emerging evidence base to support its use. Using the original 20-week group treatment format, a pre-post design study with 65 toddler- or preschooler-caregiver dyads from Head Start and Early Head Start programs found that while 39 of 65 children were classified as having disorganized attachments at baseline, 27 of these children (70% of baseline disorganized) attained an organized attachment classification after the intervention (Hoffman et al. 2006). Results were in the same direction for attachment security; 52 of 65 children had insecure attachments at baseline, but 23 of these children (44% of baseline insecure) attained a secure attachment classification after the intervention (Hoffman et al. 2006). A similar pre-post design study of clinically referred children found the COS Group intervention to be associated with improved caregiver reflective function and caregiving representations and improved child attachment security and organization (Huber et al. 2015). An additional study utilized a COS intervention together with an intensive jail-diversion program for pregnant offenders with a history of substance abuse; after the intervention, participants had rates of attachment security, attachment disorganization, and maternal sensitivity that were comparable to low-risk samples (Cassidy et al. 2010). Thus far, COS has undergone two RCTs. In a study of 174 irritable infants randomized to the 4-week home-visiting (COS-HV4) model or a psychoeducational control intervention, there was no main effect of treatment, but an interaction revealed that there were significant intervention effects only for the most irritable infants (Cassidy et al. 2011). The COS-P DVD program has begun to show potential benefits to parents in measures of parent risk factors (Horton and Murray 2015) and child care providers in terms of self-efficacy and reduced depressive symptoms, but not reflective functioning (Gray 2015). Recently, an RCT of the COS-P DVD program found that relative to a wait-list control group, COS-P mothers provided fewer self-reported unsupportive responses to child distress, and 3–5-year-old children of COS-P mothers had better observed inhibitory control (Cassidy et al. 2017). Exploratory analyses suggest that mothers' attachment style might moderate the effects of COS-P, but more research is needed (Cassidy et al. 2017).

Attachment and Biobehavioral Catch-Up Attachment and Biobehavioral Catch-Up (ABC) is a manualized ten-session in-home caregiver-child intervention program that is designed for children who have experienced early adversity (Bernard et al. 2012). ABC for Infants (ABC-I) is designed for children 6 months to 2 years old, and ABC for Toddlers (ABC-T) is designed for children 2–4 years old. ABC is based on attachment theory and informed by stress neurobiology. The goals of ABC are to help caregivers to provide nurturing care when their child is distressed and to have more synchronous interactions with their child. To reach these goals, interventionists provide in-the-moment feedback and video feedback, use structured activities to help caregivers practice being synchronous, discuss research supporting the importance of nurturing and synchronous care, and explore how caregivers' early experiences affect their ability to provide nurturing and synchronous care. Interventionists focus especially on helping caregivers to provide a responsive, predictable environment so that children are better able to regulate themselves, to follow the child's lead and show delight in the child, and to decrease any behaviors that might be frightening or overwhelming to the child. In ABC-T, caregivers are also taught how to co-regulate their children when they are distressed.

ABC-I has been widely studied in at-risk caregiver-child dyads, with favorable results for both children and caregivers in behavioral and biological domains. In an RCT in high-risk mothers ($N = 24$), mothers in the ABC-I condition showed significant increases in sensitivity and decreases in intrusiveness relative to a psychoeducational control intervention, and rates of change were faster in the first half of treatment (Yarger et al. 2016). RCTs with foster families found that ABC-I foster mothers had improvements in sensitive parenting ($N = 96$; Bick and Dozier 2013) and reductions in child abuse potential and parenting stress ($N = 53$; Sprang 2009). Accompanying these behavioral changes, Child Protective Services-referred mothers who participated in ABC-I also demonstrated enhanced event-related potentials in response to emotional faces relative to a control group ($N = 86$; Bernard et al. 2015c).

Children who participated in the ABC-I intervention show lower rates of disorganized attachment and higher rates of secure attachment ($N = 120$; Bernard et al. 2012), less avoidance behavior ($N = 46$; Dozier et al. 2009), less negative affect in a challenging task ($N = 117$; Lind et al. 2014), lower levels of externalizing and internalizing behavior problems ($N = 53$; Sprang 2009), higher receptive vocabulary ($N = 52$; Bernard et al. 2017), and improvement in cognitive flexibility and theory of mind skills ($N = 61$; Lewis-Morrarty et al. 2012). Foster children who participated in the ABC-T intervention had better parent-reported attention and cognitive flexibility than children who participated in a control intervention ($N = 173$; Lind et al. 2017). There is mounting evidence that ABC-I is associated with lasting biological changes for children as well. Children with a history of neglect who participated in ABC-I showed normalized diurnal cortisol patterns 3 months post-intervention, when children were 5 months to 3 years old ($N = 101$; Bernard et al. 2015a), and these changes persisted until children were about 4–6 years old ($N = 115$; Bernard et al. 2015b).

Mom Power Mom Power (MP) is a short-term, attachment-based, parenting and self-care group intervention for high-risk mothers of young children (birth to age 5; Muzik et al. 2015). MP is a targeted, multimodal intervention that aims to reduce caregivers' mental health problems, enhance sensitive and nurturing parenting, and promote balanced, positive attributions toward the child and parenting in mothers with histories of trauma. MP strives to increase treatment engagement with an integrated focus on self-care/mental health and parenting competence, while at same time facilitating social support and access to care. The intervention is more fully described in chapter 11 in this book.

Initial research confirmed that MP participants are high-need families with significant risk factors, including trauma exposure, psychopathology, poverty, and single parenthood (LePlatte et al. 2012; Muzik et al. 2015). In an "open" trial (i.e., no control group) with 99 mothers completing MP, the program was associated with decreases in mothers' depression, PTSD, and caregiving helplessness and improved reflective functioning, parenting confidence, social support, and connection to care (Muzik et al. 2015, 2016). In an RCT, mothers who participated in MP as compared to control group mothers receiving informational mailings showed improvements in mental health symptoms and parenting stress (N = 122; Rosenblum et al. 2017a). The differential results of the MP versus control condition on maternal mental health and parenting were even more accentuated for mothers with a history of interpersonal trauma (Rosenblum et al. 2017a). In addition, mothers who participated in MP-RCT and were assigned to MP showed increase in "balanced" maternal representations and reflective capacity as compared to control mothers (Rosenblum et al. 2017b). More recent data indicate that participation in MP is also associated with activation of brain circuitry relevant to parental empathy. Specifically, a subset of mothers in the RCT participated in an fMRI task designed to assess mothers' empathic responding to caregiving-eliciting stimuli (e.g., listening to a baby cry or looking at own child's emotional displays); results indicated that only mothers who participated in the MP condition (relative to untreated controls) experienced decreased parenting stress and increased brain responses in "parental social brain" regions while engaged in these tasks. Specifically, only mothers assigned to the MP treatment condition demonstrated increased brain responses to their own versus an "other baby" cry in the precuneus and increased connectivity with subgenual anterior cingulate cortex—key components of the neural circuitry required for social cognition (Swain et al. 2017). Relatedly, only mothers in MP condition showed significantly increased empathy-dependent amygdala responses to their own versus other child's joyful expressions in the bilateral amygdala, while such responses were decreased among mothers assigned to the control group (Muzik et al. Under Review; Swain et al. 2016).

Parent-Child Interaction Therapy Parent-Child Interaction Therapy (PCIT) is a manualized parent training program for caregivers and their young children, ages 2–7 (Hembree-Kigin and McNeil 2013). PCIT combines operant behavioral methods based in social learning theory and traditional play therapy techniques within a developmental, attachment-based framework. It is a dyadic intervention that utilizes

direct coaching of parent-child interactions to promote positive parenting techniques and an adaptive parent-child relationship. PCIT focuses on two main components: Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI). In CDI, parents learn to use play therapy techniques such as following the child's lead, narrating play activities, and imitation to enhance the parent-child relationship. Treatment always begins with CDI, as the model predicts that a strengthened relationship will lead to increased sensitivity, a decrease in the coercive cycle, and improvements in child behavior and is necessary to set the stage for PDI to be effective. For PDI, parents are taught techniques of differential reinforcement (giving attention to positive rather than negative behaviors), giving effective instructions and utilizing time-out strategies to establish a structured and consistent approach to discipline. PCIT is designed as a short-term (but not time-limited) treatment of approximately 12 weekly sessions with parents. It is delivered by Master's or higher-level clinicians and traditionally involves the use of a one-way mirror and a bug-in-ear approach for direct coaching of real-time parent-child interactions. More recently, in-room coaching has been explored for its advantage of lower cost and ability to be used in-home (e.g., Masse and McNeil 2008).

Early research found PCIT to be effective in decreasing disruptive behavior and improving parenting, with large effect sizes and lasting results (Ward et al. 2016). More recent investigations have also demonstrated efficacy in other populations, including maltreated children (Kennedy et al. 2016), children with mental retardation (Bagner and Eyberg 2007), children in foster care (Mersky et al. 2016), children on the autism spectrum (Solomon et al. 2008), and children born prematurely (Graziano et al. 2012), to treat internalizing disorders (Carpenter et al. 2014), and across different cultures (Leung et al. 2017; McCabe and Yeh 2009). While research on biological mechanisms for the effects of PCIT is limited, one study found that skills taught during PCIT (e.g., praise, reflection, behavioral descriptions) were associated with children's improved cardiac vagal regulation (Graziano et al. 2012). PCIT has been adapted to an efficacious group format as well (Niec et al. 2016). Novel treatment delivery methods, such as Internet-based treatment, have garnered recent attention and are currently being evaluated.

9.5 Summary

The interventions discussed above as examples and summarized more fully in Table 9.1 provide several evidence-based methods to improve caregiver-child relationships for young children and may be particularly useful in the context of at-risk and trauma-exposed families. Research has shown that caregiver-child relationships can serve as a critical protective factor for at-risk families, and in turn, many of these interventions have been designed for and tested primarily in multi-risk families. While some interventions teach parenting strategies from a social learning perspective (e.g., PCIT), others present schemas for better understanding attachment relationships and children's needs (e.g., Mom Power, Circle of Security). Both CPP and ABC target attachment in children who have

experienced early adversity, with ABC being a brief treatment and CPP being more long term. Some approaches incorporate peer social support through a group format (e.g., Mom Power, COS Group), while others are designed as an individual (e.g., MTFC-P, Theraplay) or home-based (e.g., Child FIRST, ABC, Minding the Baby) treatment. Most studies of intervention efficacy focus on behavioral outcomes and have found that these interventions are associated with improvement in attachment, behavior problems, symptoms of trauma, parenting stress, and parenting behaviors (see Table 9.1). Research on biological mechanisms for intervention effects is still limited, but so far studies have found that parents participating in ABC (Bernard et al. 2015c) and Mom Power (Swain et al. 2017) have changes in neural circuitry that are associated with more sensitive parenting. Children participating in ABC (Bernard et al. 2015a) or MTFC-P (Fisher et al. 2007) have more normative cortisol regulation, and those participating in PCIT have improved cardiac vagal regulation (Graziano et al. 2012). At this time, no studies have examined the comparative efficacy of these interventions, but applicability of each treatment may depend on the specific circumstances of the family (e.g., ABC may fit well for foster and adoptive families, PCIT may be indicated for families who are in need of concrete behavioral strategies) and the severity of their difficulties (e.g., COS may be most appropriate for mild problems, whereas CPP may be indicated for families with the most significant difficulties).

Conclusions

Caregivers who have been exposed to trauma can face challenges in providing sensitive, responsive, and nurturing care to their young children. The parent-child relationship plays a central role in organizing and guiding the infant and young child's social experience, and can mitigate or potentiate risks, whether biological or environmental. Therefore, not surprisingly, regardless of etiology and across various clinical presentations, interventions that serve to strengthen parenting and the early parent-child relationship can promote optimal development and moderate the impact of early biobehavioral and environmental risk exposures. Accumulating evidence confirms that early dyadic, relationship-focused interventions designed to strengthen parenting and the early parent-child relationship promote social, emotional, and cognitive outcomes in children as well as their parents and can prove especially advantageous among trauma-exposed families.

While the interventions identified and described in this summary varied in terms of the specific components, including the population served, duration, theoretical orientation, and modality, all involved focused attention on the dyadic relationship and/or parenting. Efficacy for a number of interventions was evidenced on a range of behavioral outcomes, including parenting, parent and child psychopathology, and child social-emotional, cognitive, and behavioral well-being; emerging findings show intervention-related changes in neural circuitry accompany improvements in sensitive caregiving in interventions. Future studies are needed to further identify what treatments work best for whom and to examine biological mechanisms for intervention effects in both parents and children.

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Enhancing Emotion Regulation: The TARGET Approach to Therapy with Traumatized Young Mothers

10

Julian D. Ford and Judith G. Ford

Abstract

Mothers who have experienced traumatic events in their own childhoods, and at other times in their lives, are faced with multiple challenges as a parent that require the capacity to regulate their own emotions while they guide their children in developing core self-regulation capacities. A case vignette is presented to illustrate how a psychotherapeutic approach to recovery from trauma-related emotion dysregulation—Trauma Affect Regulation: Guide for Education and Therapy (TARGET)—assisted a young mother with a complex trauma history to shift her view of herself and her approach to parenting her child from reactive and distancing to responsive and emotionally available. TARGET is designed to enable mothers to move beyond the stigma of viewing trauma-related reactivity as psychopathology and to recognize that symptoms are not deficits but actually are adaptive strengths that have been life saving for them —and ultimately to harness these strengths in the process of healing themselves and caring for their children.

Tragically, violence and victimization, and their adverse impacts on survivors, families, and communities, occur in intergenerational cycles (Ford 2015a; Betancourt et al. 2015; Berthelot et al. 2015; Bosquet Enlow et al. 2014; Yehuda et al. 2014; Lehrner et al. 2014). While fathers play a crucial role in child and family development and their recovery from traumatic events (Stover et al. 2003), mothers have a

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unique attachment relationship with their children and often serve as an emotion lightning rod and shock absorber in traumatized families (Frewen et al. 2015; Pat-Horenczyk et al. 2015). Therefore, it is essential to help traumatized mothers recover from traumatic stress disorders not only for their own benefit but for that of the next and subsequent generations (Yehuda et al. 2008; Radtke et al. 2011; Jovanovic et al. 2011; Roberts et al. 2012) and to do so as early as possible in their children's lives (Cohodes et al. 2015).

Emotion dysregulation is a central feature of all trauma-related disorders, including post-traumatic stress disorder (PTSD) and its complex variants involving depression, dissociation, anxiety, substance abuse, personality disorders, and suicidality and non-suicidal self-injury (Ford 2016a). Mothers who are posttraumatically emotionally dysregulated (due to traumatic exposures in their own childhoods or adult lives, as well as secondarily if their child[ren] are traumatized) are likely to have difficulties in reliably providing empathic, responsive, child-centered emotional availability due to their own struggles with emotional avoidance, detachment, anger, anxiety, despair, and hypervigilance (Bosquet Enlow et al. 2011; Schechter et al. 2015; Juul et al. 2015; Fava et al. 2016). Emotionally regulated mothers, by contrast, may be stressed in their lives and by the challenges of parenting, but they are able to provide their children with facilitative parenting and emotional socialization that enhances children's self-regulation (Williams and Woodruff-Borden 2015; Crandall et al. 2015).

Psychotherapy focused on traumatized mothers' emotion regulation thus may be particularly important not only to enable women to recover from traumatic experiences but moreover in preventing the intergenerational transmission of emotion dysregulation and traumatic stress disorders. One approach is to intervene to enhance dyadic affect regulation using child-parent psychotherapy with mothers of infants, children, or adolescents (Van Horn and Lieberman 2008). However, the mother's own unresolved traumatization may limit her ability to engage in dyadic psychotherapy (and also to translate changes achieved in therapy into day-to-day parenting) in an emotionally regulated way. Therefore, therapeutic approaches designed to directly enhance traumatized mothers' recovery and adaptive emotion regulation are a crucial complement to child-parent therapy.

Although psychotherapy for traumatized adults has primarily focused on reducing the vicious cycle of intrusive re-experiencing and avoidance of traumatic memories, there has been growing recognition over the past decade that enhanced emotion regulation may not just be a by-product but a primary mechanism of change in the process of recovery from traumatic stress disorders (Schnyder et al. 2015). This typically has been achieved by intensive therapeutic re-living of trauma memories but that is not always acceptable or tolerable for recipients. The often high dropout rates (ranging from 20% to more than two-thirds of adults with PTSD who begin such therapies) have spurred the development of PTSD psychotherapies designed to strengthen or build emotion regulation capacities directly in order to enhance coping with PTSD symptoms such as intrusive memories, emotional numbing, hypervigilance, anger, shame, grief, guilt, and dissociation (Ford 2016b).

10.1 TARGET: An Emotion Regulation-Focused Psychotherapy for Traumatized Mothers

In this chapter, we describe an emotion regulation-focused psychotherapy for traumatized people that has been adapted and scientifically tested and found to be of benefit specifically for traumatized young mothers as well as for adolescent girls who may be parents in the future. This model is Trauma Affect Regulation: Guide for Education and Therapy (TARGET) (Ford 2015b; Ford et al. 2011, 2012).

TARGET is a manualized therapy that was delivered in 12–50-min sessions in research studies and has been adapted for adults and youth in individual, group, and in-home family therapy modalities. TARGET begins with a thorough and sensitive psychosocial and safety assessment and collaborative goal setting designed to establish a strong working alliance (Courtois et al. 2009).

A unique feature of TARGET is evident in the next step in treatment: psychoeducation that explains the link between PTSD symptoms and emotion dysregulation by describing how traumatic threats and injuries lead to survival-based biological adaptations. These critical changes alter the body and key areas in the brain that are necessary for coping with stress and in turn lead to intense emotional reactivity or shutdowns and difficulty in regaining emotional equilibrium. Restoring emotion regulation is described as requiring a resetting of the brain's "alarm" system to restore the "learning brain" that trauma has turned into a "survival brain." This is a novel way of understanding traumatic stress reactions that is both destigmatizing and strengths based. PTSD is no longer seen as a "black box" of inexplicable mental health problems or personality flaws. Instead, PTSD can be understood as an *adaptive* survival-based change in the brain that draws on the person's abilities to recognize and respond rapidly to threats or danger. Moreover, this framework provides a road map for recovery. The trauma survivor has the ability to shift from chronic alarm mode (PTSD) to become focused on achieving other life goals than survival. However, harnessing the brain's innate ability to reset itself requires skills to activate the brain's "thinking" and "memory file" centers. These are precisely the skills that TARGET teaches. For a sample script of the TARGET psychoeducational content, see Table 10.1.

TARGET's skills take the form of seven practical steps summarized by an acronym, FREEDOM: **f**ocusing the mind on one thought at a time; **r**ecognizing current triggers for emotional reactions; distinguishing dysregulated (reactive) vs. adaptive (main) **e**motions, **e**valuations (thoughts), goal **d**efinitions, and behavioral **o**ptions; and self-statements affirming that taking responsibility for recovering from intense emotions is crucial not only to one's own personal well-being but also to **m**aking a positive contribution to oneself and others. A primary assumption in TARGET is that mothers already possess these skills; therefore, they need not be "taught" in a pedagogical manner (Miller 1979) that implies a deficit of knowledge or intelligence or a flaw in character or ability. Instead, TARGET is designed to enable mothers to become aware of skills that they have not fully recognized or known how to apply effectively. In the process of becoming aware of her own capacities and skills,

Table 10.1 TARGET sample script

Sample script for TARGET psychoeducation with traumatized mother
Trauma involves an extreme shock to a person's emotions which activates an internal bodily *alarm* system that is designed to protect us from harm. When trauma triggers the body's *alarm* system on emergency/survival mode, either emotions become extremely intense, so you will take the situation seriously, or they may be shut down so you can deal with the crisis or danger without being distracted by your feelings. When the *alarm* system doesn't shut off after trauma, your emotions continue to be extreme or shut down even though you don't need to be: you might feel terrified even when you're safe, or persistently irritable or enraged by what seem to be minor problems, or horribly depressed even though life is going reasonably well
Parents naturally have very strong emotional reactions to their children. These include love, pride, appreciation, and happiness—but also frustration, worry, guilt, disappointment, and unhappiness. If trauma has left your brain and body's *alarm* stuck in survival mode, you'll find yourself having either very intense or very shutdown reactions that don't really fit with how you feel about your child(ren). And that can set off your child's *alarm* so that now you're both stuck in *alarm* mode even when you really care about each other and want to get along. Learning how to reset the *alarm* in your body and brain—and not just ignore or deny it (which can lead to problems with anger, depression, and addiction)—is the key to being the parent you want to be *and capable of being when you're at your best*
No one is given a "user's manual" to help them understand and maintain their *alarm* system, but *everyone needs that user's guide when under stress*! When you buy a car, you get a manual, and you can ask an auto mechanic for help when something more complicated goes wrong. TARGET is that user's manual for understanding and knowing how to reset your *alarm* when you're under stress. In TARGET, you *won't* learn what's wrong with you—you'll learn about the perfectly healthy and normal *alarm* in your brain that has gotten stuck in survival mode by trauma and how you can use your brain's ability to think clearly to reset the *alarm*

each mother is both empowered and helped to modify habitual beliefs and behaviors that have become substitutes for what she genuinely values and believes. Keeping her value-based goals and self-capacities, and the relationships that affirm these, in the forefront of her mind, supports a mother's ability to successfully regulate her emotions, parent her child(ren), and engage in other important relationships and life pursuits.

As the therapeutic dialogue moves from establishing a shared frame and working alliance to processing key emotional challenges, the therapist explains the FREEDOM steps in an interactive manner guided by the mother's spontaneous description of both positive and stressful *current* life experiences. Discussion of past traumatic experiences that she continues to find troubling or unresolved is an option but not a requirement. The decision to therapeutically process memories and associated feelings using the TARGET skills is based on her ability to tolerate and regulate intense emotional states, her external and internal resources, and her environment (e.g., stable home vs. incarceration). Both in therapy sessions and in vivo in between sessions, participating mothers use a template (Practice Exercise for FREEDOM) that walks them through each FREEDOM step as they apply it to preparing for or analyzing stressful experiences in life.

TARGET also provides a creative arts activity designed to enhance positive and negative emotion recognition in the context of autobiographical narrative construction—the Lifeline. The Lifeline involves collage, drawing, poetry, symbols, and

written notations to depict life experiences that the client views as emotionally significant (including positive and negative events, places, and people). The FREEDOM steps serve as the organizing framework for each Lifeline. Within this framework, the client identifies trauma-related triggers and reactive feelings, thoughts, goals, and behavior (the alarm-driven side of her life) and the counterbalancing adaptive feelings, thoughts, goals, and behavior (the resilience-promoting side of her life). The goal of the Lifeline is to enhance emotion regulation and balanced processing of life experiences and memories by providing guided practice in applying the FREEDOM skills. It also supports reflection on the personal meaning in emotionally salient memories from across the full life span.

10.2 How TARGET Supports Trauma Processing and Emotion Regulation

TARGET is a framework (rather than a prescriptive technical model) for strengths-based, client-centered emotion regulation (Ford 2016b) psychotherapy for PTSD, complex PTSD (Ford 2015a, 2016a), and related psychopathology (Ford and Gomez 2015; Ford and Courtois 2014; Dvir et al. 2014; Ford and Hawke 2015). By this we mean that TARGET provides trans-theoretical principles for understanding and facilitating recovery from traumatic stress disorders that can be incorporated into approaches to clinical practice ranging from information processing/cognitive-behavioral (Ford 2015b) to psychodynamic (Ford 2013) to mindfulness/experiential (Fosha et al. 2009) to family systems (Ford and Saltzman 2009) and to group therapies (Ford et al. 2009). Although TARGET provides manuals with a session-by-session guide to conducting individual, group, and family therapy, it does not require therapists to follow a fixed formulaic "one-size-fits-all" protocol but instead offers a vocabulary and structured designed to be adapted to each unique client. The psychoeducation and skills components of TARGET are woven into an open-ended dialogue between the client and therapist that is based on the client's current concerns, circumstances, and goals, rather than top-down instruction of the client by the therapist. TARGET provides the therapist with a framework for listening and joining with the client to make sense of her past, current, and future experiences and goals with an understanding of both the impact of traumatic stressors and the adaptations she has made to survive and sustain herself. Several specific features of TARGET are particularly relevant for traumatized mothers.

10.2.1 Shifting from Hypervigilance to Reflective Functioning

Reflective functioning is the capacity to be aware of, find meaning in, and flexibly adapt in response to both internal and external life experiences while maintaining a coherent continuous perspective (a sense of self) (Ordway et al. 2015). Although reflective functioning may seem to be primarily a cognitive activity, it is grounded

in emotion regulation and together with emotion regulation is a prerequisite for the development of secure attachment bonds in parent-child relationships (Morel and Papouchis 2015). Traumatic stress reactions are characterized by survival-based hypervigilance—a preconscious scanning for even the smallest sign of impending danger that is fundamentally incompatible with reflective functioning (Ford 2009). TARGET assists traumatized mothers in recognizing the adaptive purpose of hypervigilance in order to enable them to become consciously aware of when and how they are becoming hypervigilant. Rather than encouraging clients to attempt to cease or reduce hypervigilance, TARGET enables the therapist to guide the client in making a conscious choice about when and how to be alert to potential threats and how to also be aware of the choice to focus her attention on feelings, thoughts, goals, and actions that reflect her core values and sense of purpose in life. This is done by teaching clients to intentionally deploy a mental focusing skill that is described with a mnemonic, "SOS": *s*low down/*s*weep your mind clear; *o*rient yourself by concentrating your attention on one thought that is a reminder of who you are as a person and what you most value in life; and *s*elf-check how much stress and how much personal control you feel at this moment.

TARGET makes it clear that focusing with the SOS is not intended to erase fear or anxiety nor to compromise alertness to potential danger. It also is not a rote exercise. Instead, focusing with the SOS provides an alternative to hypervigilance that makes it possible to be alert and to think clearly without being preoccupied with threats or feeling overwhelmed with distress or shut down mentally and emotionally. Focusing opens up the possibility of conscious choice about when and how to be alert to danger. Focusing thus gives a person greater control over their own feelings, thoughts, and destiny (and ultimately safety) than habitual hypervigilance. The goal of focusing is to increase the client's confidence in her ability to choose options for deploying her perceptual and mental capacities purposefully rather than automatically. This allows her to choose when and how to allocate her attention to her core values and goals, to responsibly anticipate and be prepared to recognize (rather than being blindsided by) danger and distress, and to effectively respond (rather than avoid or react) to opportunities as well as to adversities.

Focusing thus provides a practical approach for trauma survivors to responsibly protect themselves and their loved ones based on what they have learned from traumatic experiences while also remaining aware of and honoring their core values and goals (i.e., reflective functioning). This is of particular importance for traumatized parents because it enables them to protect and guide their child[ren] with due regard for the reality of the traumatic dangers and harm that they have had to survive and overcome while also serving as a role model of emotion regulation (i.e., balancing distress and excitement with calm confidence) and drawing on reflective functioning to responsively provide their child[ren] with consistent empathic understanding, encouragement, and love (i.e., good enough caregiving to establish and sustain a secure attachment bond). Thus, when TARGET helps traumatized mothers to recognize and choose to utilize their capacity to focus, this provides them with a foundation and scaffolding for emotion regulation and reflective functioning while they cope with traumatic stress reactions.

Reflective functioning does not come easily or naturally for everyone, especially when posttraumatic hypervigilance dominates a person's mental and emotional life. Those who are inclined by temperament or social learning toward anxiety or dysphoria tend to be more limited in this capacity—not necessarily due to any inherent deficit, but as a result of automatically allocating finite psychological resources that are needed for reflective functioning instead to hypervigilance. Rather than simply instructing and encouraging mothers who struggle to achieve reflective functioning to attempt to apply the SOS as a rote coping tactic, TARGET emphasizes recognizing and building on positive exceptions. Those exceptions are the times when a mother is able to maintain (or regain) a focus on her core values and goals and to be with her child[ren] in a calm, confident, empathic, and reflective manner despite feeling stressed, distressed, or shut down. By highlighting exceptions, TARGET builds a scaffold to support gains in focusing.

TARGET also promotes reflective functioning as a counterbalance to hypervigilance by helping clients to identify triggers that elicit "alarm reactions" (i.e., feeling distressed or shut down emotionally, reacting without forethought). Triggers in parenting often are obvious (e.g., time or money pressures; fussy, defiant, or "noncompliant" children) but equally often are subtle and unique to each mother. For example, a family holiday or child's birthday celebration may seem on the surface to be entirely positive. Such "highlight" events also involve many obvious but often overlooked stressors for the parent (e.g., responsibility to orchestrate a successful event for a large number of participants who are in conflict with one another or have competing agendas). In addition, there may be nonobvious triggers related to the parent's past traumas (e.g., reminders of similar past events that involved or were followed by abusive interactions or that involved key people who were subsequently killed or died prematurely). Paying attention to such triggers and their legitimate emotional significance not only provides a preparation for future occurrences but also is in itself a form of autobiographical reflective functioning that can lead incrementally to a sense of resolution. In both respects, the identification and validation of triggers represent a shift from hypervigilance to proactive preparation for future stress reactions.

TARGET helps clients to identify both internal (e.g., body and emotion states) and external (e.g., physical circumstances, the presence and behavior of other persons) triggers. This can be important in enabling a traumatized mother to shift from an exclusive externalized perspective (e.g., worrying about or blaming her child[ren] or herself) to paying attention and becoming better attuned to her own internal states. Attunement to one's own inner states and, with this as a scaffold, to those of others such as one's child[ren] is an essential feature of both emotion regulation and secure attachment bonding. Trauma experiences often teach survivors unfortunate lessons: that inner states are a distraction that can interfere with rapid emergency responding, that being aware of internal states is an act of selfishness that causes harm, and that inner states send a signal of vulnerability to perpetrators which leads to escalating violence or maltreatment. For these reasons, instead of having clients simply make superficial lists of "things that make you feel distressed," TARGET engages clients in a discussion of how their life experiences have led them to

adaptively and protectively develop alarm reactivity to key internal states or external cues or events. With this awareness and reflection, triggers can be seen as an opportunity for mothers to develop attunement and empathy as a counterbalance to hypervigilance while preserving their ability to be alert and prepared for signs of potential threat.

TARGET also enables mothers to distinguish between trauma-related hypervigilance and extreme stress reactions to triggers related to ordinary stressors. In the absence of a traumatic threat, these intense alarm reactions seem (and often to the client herself) to be "irrational overreactions." Such posttraumatic stress reactions are viewed in TARGET as having meaning in that they signal to the client that it is necessary to take two steps to reset her brain's inner alarm. The first step is verifying that there is no severe threat for which the client is unprepared, which requires a careful examination of life circumstances. If she is not sure that she is prepared to handle major threats, then planning ways to handle such circumstances is important to maintain a genuine sense of self-trust and self-efficacy. Secondly, the alarm reaction is a call to refocus on core values and goals that may have slipped off the radar screen in the ongoing press of daily life and parenting. Rather than signaling a problem, a preoccupation with potential danger is reframed in TARGET as a combination of fear based on past traumas and legitimate caution. Mothers are helped to transform hypervigilance into confident protectiveness by reflecting on how doing so can change what was a "symptom" into an adaptive way to honor core values and life goals in relation to key people (especially, but not limited to, child[ren]).

10.2.2 Shifting from Emotional Dysregulation to Emotion-Informed Focusing

Parenting involves a wide range of emotions that can either enhance or interfere with mothers' emotional availability. Emotion regulation involves awareness and use of emotions as a guide to decisions and actions and the ability to feel emotions in an optimal window of intensity (i.e., neither overwhelmingly strong nor numbed and dissociated). In TARGET, posttraumatic alarm reactions triggered by the nontraumatic stressors involved in parenting and life are viewed as expectable destabilizers of the capacity for emotion regulation. This destigmatizing trauma-informed perspective enables traumatized mothers to become aware of posttraumatic emotion dysregulation without shame.

In TARGET, emotional dysregulation in parenting, including meltdowns or feeling shut down, is viewed as the consequence an inner alarm system that has become stuck in emergency mode in order to survive traumatic events. Clients therefore are guided in distinguishing between reactive emotions that are signals of a stressor or trigger versus "main" or effective emotions based upon the person's core values and life goals. Rather than encouraging attempts to change, banish, or overcome reactive emotions, TARGET takes an experiential (Fosha et al. 2009) and information processing (Ford 2015b) approach, reframing *emotions as useful information from the inner alarm* that require reflection to fully unpack. Emotions may be a signal

from the body's alarm system that there is an opportunity, challenge, problem, or threat that needs attention. So reflecting on the meaning and options for responding to reactive emotions, and the triggers that elicit them, can provide the pathway to anticipate and prevent, or mitigate, problems or to capitalize on opportunities. On the other hand, main emotions are a signal from the brain's executive center that there is an opportunity to focus on and reaffirm core values and life goals. This provides the vehicle for strengthening or sustaining primary life commitments and achieving key life goals, as well as responding vigilantly or tactically to life's exigencies when they trigger alarm reactions.

For mothers, this perspective may have special relevance, because they know that inevitably parenting a child elicits both reactive (e.g., frustration, worry, sadness, guilt, shame, fear) and main (e.g., love, joy, contentment, pride, enthusiasm, curiosity) emotions. Posttraumatic stress can lead to a predominance of reactive emotions and a sense of losing or being unable to hold on to main emotions. When this occurs in parenting, reactive emotions can literally seem to destroy the main emotions that are the basis for caring for a child—not only undermining the child's sense of security (i.e., attachment bonding) and ability to regulate her/his own emotions but also leaving the parent with a burden of shame, guilt, and loss. TARGET helps traumatized mothers to recognize that their precious main emotions have not been permanently lost or eliminated but have become overshadowed by intense posttraumatic alarm-driven reactive emotions. They are helped to recognize the adaptive role that distancing oneself from awareness of emotions plays in trauma experiences, preventing emotions from compromising survival by inadvertently leading to vulnerability or distraction. Then they are guided in unpacking both specific alarm emotions and diffuse states of emotional numbing or dissociation in order to *find the main emotions* that are embedded and still accessible despite having been set aside or hidden behind alarm emotions.

Reflecting on an alarm state triggered by current stressors (including parenting), and labeling specific feelings, is a helpful intervention in itself, but not an easy one for a traumatized mother. Intense emotions such as anger and the strong expression of emotions can bring on a cascade of other feelings such as guilt, shame, and a profound sense of not being able to trust oneself. This flood of feelings and the accompanying physiological responses can quickly lead the survivor to feel that she is *losing control* or *going crazy* and therefore in danger or capable of harming others (e.g., child[ren]). The act of acknowledging disturbing emotions may seem to reinforce these fears of loss of control and becoming someone who hurts others. Trauma survivors thus are more likely, in the face of intense or numbed/dissociated emotion, to believe that they "failed" to regain control even if their actions indicate that this was not the case. *Being* in control often is not experienced by trauma survivors as a real possibility because they don't *feel* in control of their reactive emotions. Therefore, TARGET shows mothers how awareness of reactive emotions can actually increase or restore their ability to modulate the intensity of those emotions *so long as the awareness leads to recognition of main emotions that are present but have become hidden*.

For women who have had the experience of having to tolerate intense fear while feeling helpless, it can be a novel idea to learn that they can *safely choose* to access

feeling states that had become overwhelmingly aversive or that seem to have been obliterated or lost. Being stuck in a posttraumatic state of alternately uncontrollable emotional reactivity and profound numbing/dissociation may be the norm and seem inevitable. A survivor, who feels trapped and powerless in an inner world in which there seem to be only intolerable reactive emotions or no emotions at all, also is likely to want (or feels social pressure) to avoid or deny those feelings and to admit to only "acceptable" feelings. Choosing to recognize rather than to avoid reactive emotions therefore is not as simple as merely trying to think positively or see the silver linings. Instead, it is a dynamic reflective process that requires a goal worthy of the risk and effort. When reactive emotions are seen to be a pathway to the main emotions that mothers really *want* to feel—an empowering feeling, not simply an attempt to escape feeling bad—then even painful emotions serve a purpose that makes them allies rather than enemies. The purpose is not to feel excruciating pain but to find meaning in painful emotions as a doorway to main emotions.

10.3 Composite Case Vignette: Using TARGET with a Traumatized Young Mother

M is a married stay-at-home mother with two daughters, aged 3 and 4, and a 1-year-old son. Her husband works full time and often travels out of state on business. M values being the primary caregiver and takes great pride in their children's development. She decided to homeschool the children with the intention of providing the kind of enriching learning environment at home that they would get in a high-quality school or daycare setting. M hoped that the additional stimulation of games, creative activities, and art projects would help the children develop skills and interests, keep them engaged, and reduce the frequent flare-ups of irritability and conflict between her two daughters. M is dedicated to being a "good" mother, and because she is capable of setting and achieving goals, she is able much of the time to live up to her very high standards.

However, as a trauma survivor herself, M struggles with low self-esteem and feels that she is often on an emotional roller coaster. As a child, she grew up in a middle-class family with her mother and father and two sisters. Her father sexually abused her from the age of 4 till she was 7, and when this was discovered, M felt responsible for the breakdown of the family, guilty about her father's removal from the home, and ashamed of what she thought was her role in the abuse. She was defiant, had temper tantrums that she couldn't control, and shut down emotionally when faced with challenges. Still, she succeeded in school, made friends, and was considered a peer leader until high school. By age 16, she was using drugs and running away to friends' homes to "escape" from her mother and sisters. After many attempts at family and individual therapy, she asked her mother to send her to an outward bound-type residential school out of state, saying, "I can't live like this any longer." M used the therapeutic resources at school to begin to put the abuse in perspective and learn more about herself, and she managed to finish high school. After graduation she made several attempts to take college classes but found that she wasn't able to mobilize the sustained attention necessary to follow through on assignments and

study for tests. She had several close friends but chose boyfriends who were charismatic but abusive. She had periodic bouts of binge drinking that culminated in imploded relationships and intense feelings of hopelessness and depression. However, she was resourceful in finding work and supporting herself. During a period of sobriety, she got married, and they had three children in quick succession.

As a parent, M was vigilant about reading parenting articles and books on child development, because she was afraid she might become an abusive parent. She joined a TARGET therapy group for women in her community. In the TARGET group, she started to understand for the first time that the alarm in her brain was driving her fears and her other volatile emotions, and she was excited about learning that there were concrete steps she could take on her own to reset her alarm and regain some personal control when her emotions seemed overwhelming. It all made sense to her intellectually and when she was feeling calm—her doubts were about whether she could actually use TARGET's emotion regulation skills when she was having an extreme stress reaction and caught up in anger, self-medicating with alcohol, or feeling hopeless.

Toward the end of one particularly stressful day with the children, following her husband's 3-day absence from home, M lost her patience with what seemed to be the constant demands of the children, the fighting over toys, the spills and cleanups, and the whining and complaining. The last straw and key alarm trigger was her 4-year-old's adamant refusal to pick up her toys. Later, she recounted feeling angry and depleted and said she suddenly found herself screaming at her daughter. She described being enraged at her daughter for "not appreciating anything I'm doing and ruining everything." At the same time, she felt "completely out of control" and was soon flooded with guilt and feelings of failure as a mother over her angry outburst at her daughter and the terrified and confused look on her daughter's and the other children's faces. She felt she had made an unpardonable mistake and created "chaos" from which her children would never recover. She was convinced that "My anger has permanently scarred them."

The next day she met one-on-one with her TARGET therapist to talk about the incident. The therapist recalled that M's initial goal for treatment had been "to stop losing my temper," which the therapist helped her reformulate as "to be able to stop and think when I get angry so that I can treat my children and husband with respect and love—even when I'm stressed." They talked about how the abuse M had experienced starting at age 4, and her fears that she was to blame would naturally have made her inner alarm vigilant about bad things happening as a result of her same-age daughter expressing emotions and acting in ways that she might have felt or wanted to do—which she instead had to suppress in order to keep the abuse secret. M realized that she saw a lot of herself in her daughter but that, while those characteristics sometimes triggered reactive emotions, her main emotions toward her daughter were love, pride, and happiness. She realized that it was a testimony to her success—not her failure—as a mother that her daughter was safe enough to not have to suppress her own reactive emotions. The therapist pointed out that M could help her daughter learn how to handle upsetting situations by modeling how to refocus on main emotions rather than simply trying to tolerate or correct her daughter's

mood or behavior. M found this compatible with a goal she had set for herself—"to get out of this trap of believing that my children can't be safe with anyone but me"—in order to honor her determination to keep her children safe and secure while not feeling burdened by trying to do so all on her own.

In discussing the incident, the therapist reviewed these goals with M and asked how the stressful situation had ended and how she had been able to reset her alarm. At first M viewed herself as having failed to reset her alarm and repeated how guilty she felt because she had failed to do anything to turn the situation around. She remembered reacting to her daughter's refusal to pick up the toys as if this was a survival threat: "When my daughter won't obey me, I feel like I've lost control of her. And when I can't control other people or situations, I know something really bad is going to happen and I'll be trapped and helpless like I was as a child." She said she tried to do an SOS by focusing on a core value and main goal, but it didn't help her at all. When the therapist persisted and asked what happened right after M's alarm took control and she yelled, M recalled that hearing her own voice and seeing her children's looks of fear were a real wake-up call. "I tried to do an SOS right then, with my orienting thought, 'I love my children and I'll keep them safe, no matter what.' But that didn't help because I could see I *wasn't* keeping them safe when I was screaming at them! But then I actually *did* do something to make things better—I stopped yelling, told my children that we all needed to do something different instead of fighting. Then I put the children in the car (securely in their car seats), turned on some favorite music for them, and went out for a drive. The kids didn't seem devastated, and they actually seemed to relax—they always love the motion of the car, sometimes it just puts them to sleep. Then I remembered I'm not all alone, and I called my sister and asked for her support."

As M reflected back with her therapist, she was able to thoughtfully look at the chain of reactive emotions and thoughts she was feeling and thinking, as well as her main emotions, thoughts, goals, and options, and began to recognize the signposts that she had, in fact, been able to focus and reset her alarm and to help her children calm their alarms too. Most importantly, this enabled her to begin questioning her fear that she would go completely out of control and become an abusive parent herself. She recognized that in that entire episode, she did not have a panic attack, did not self-medicate, and did nothing that left her children with anything like the kind of lasting emotional scars that she has had to survive. By identifying the specific ways, she was able to use the FREEDOM steps—not perfectly, but well enough—and she started to understand how those skills were abilities she already had and that she could use intentionally in the future.

Conclusion

Mothers who have experienced traumatic events in their own childhoods, and at other times in their lives, are faced with multiple challenges that require great resilience and perseverance. They know the importance of protecting their children but also how difficult it is to do this while also being nurturing, responsive, and empathic. Their willingness and ability to take on those challenges are inspiring, but they need knowledge and tools that trauma-informed education

and therapy can provide. Such therapy must be designed to enable them to move beyond the stigma of viewing their trauma-related reactivity as psychopathology and to recognize that symptoms are not deficits but actually are adaptive strengths that have been lifesaving for them in trauma experiences. Enabling them to learn how to harness these remarkable strengths in the process of healing, and (re)gaining confidence in their capacity for emotion regulation and their integrity as a parent, is the ultimate goal of psychotherapy—and the raison d'etre of the TARGET approach to psychotherapy.

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Mom Power: A Parenting Group Intervention for Mothers with Trauma Histories

11

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Abstract

Unresolved trauma and mental health problems have significant effects on parenting quality and child outcomes, thus, there is a critical need for targeted, preventive interventions for mothers with experiences of trauma and psychopathology. This chapter describes the Mom Power program, a time-limited, attachment-based, parenting and self-care group intervention for mothers with histories of trauma. In this chapter, we discuss the theoretical underpinnings and conceptual framework for this intervention, describe the intervention itself and evidence for effectiveness, and conclude with a case vignette.

The experience of trauma is, unfortunately, quite common among women. In the United States, 69% of women are exposed to some form of traumatic event in their lifetimes (Resnick et al. 1993). Interpersonal violence and abuse account for many of the traumatic experiences faced by women, and the peripartum period is not a protected time for this type of occurrence. Such experiences have detrimental effects for the health of both the mother and her child (Parker et al. 1994). Traumatic events can have significant impact on women's mental health, including increased rates of depression, anxiety, and post-traumatic stress disorder (PTSD; e.g., Pico-Alfonso et al. 2006). As discussed in this volume and elsewhere, unresolved trauma and mental health problems have significant effects on parenting quality and child outcomes

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(Goodman and Gotlib 1999). Thus, there is a critical need for targeted, preventive interventions for mothers with experiences of trauma and psychopathology. This chapter describes the Mom Power program (Muzik et al. 2015, 2016; Rosenblum et al. 2017a, b), a time-limited (13-session), attachment-based, parenting and self-care group intervention for mothers with histories of trauma. In the following sections, we first briefly discuss the theoretical underpinnings and conceptual framework for this intervention. Next, we describe the intervention itself and give a brief overview of the research supporting its effectiveness. Finally, we conclude with a case vignette.

11.1 Theoretical Underpinnings

Mom Power has its conceptual roots in trauma theory (Cloitre et al. 2009; Herman 1992), trauma-informed care (Substance Abuse and Mental Health Services Administration n.d.), and attachment theory (Bowlby 1969) and strives to enhance treatment engagement in psychiatrically high-risk mothers. Trauma is defined as an event that is experienced (or witnessed) that threatens the life or safety of a person. It can include an interpersonal trauma like physical, emotional, or sexual abuse, neglect, the death of a loved one, or environmental traumas like accidents and natural disasters. Trauma is a subjective experience; of two people who experience a potentially traumatizing event, one may experience it as traumatizing and the other may not. Trauma, by definition, overwhelms an individual's ability to cope. Thus, it is not surprising that traumatic events have a profound impact on an individual's ability to take care of themselves and others.

The persistent effects of trauma impact an individual's functioning, including emotional well-being, caregiving, and the relationships with others (Muzik et al. 2013; Muzik et al. 2017). Trauma impacts parenting perceptions and representations as well as observed parenting behaviors (Bailey et al. 2012; Muzik et al. 2013; Morelen et al. 2016). In addition, a mother who has been exposed to interpersonal trauma, be it during childhood or as an adult, is more likely to suffer from depression and PTSD (Heim et al. 2010; Kendall-Tackett 2007), which, in turn, may interfere with her ability to be an effective parent. Women are more than twice as likely as men to experience symptoms of PTSD in their lifetime (10.4% vs. 5.0%; Kessler et al. 1995). A mother's symptoms of psychopathology, such as dissociation, social withdrawal, anxiety, emotional lability, anhedonia, and fatigue, have been found to disrupt the interactions, synchrony, and development of the relationship between mother and infant (Conroy et al. 2010; Feldman et al. 2009). Such symptoms interfere with sensitive parenting (Lovejoy et al. 2000; Schechter et al. 2004) as mothers may be less able to interpret the infants' distress cues (Schuetze and Zeskind 2001), less consistently and affectively attuned to their child (Hipwell et al. 2000), and more intrusive or disengaged (Field et al. 1990; Lovejoy et al. 2000). Mothers with histories of trauma are more likely to have difficulties in bonding with their young infants (Muzik et al. 2013) and are more likely to be intrusive or show frightened or frightening parenting behaviors (Lyons-Ruth and Block 1996).

Less sensitive parenting may lead to less optimal infant emotion regulation capacity (Brand et al. 2006) and to the development of less secure and more disorganized attachments and problem behaviors (Levendosky and Graham-Bermann

2001; Lyons-Ruth et al. 2003). Attachment refers to a deep and enduring bond that connects two people across time and space (Bowlby 1969). Virtually all infants develop an attachment bond to their primary caregiver, but the quality of those attachments differs (Ainsworth et al. 1978). These bonds facilitate the development and maintenance of mental representations of the self and others, or "internal working models," that help individuals predict and understand their environment and future relationships. Mental representations formed in the context of the early child-caregiver relationship carry forward and influence expectations and behavior in adult relationships, including their own parent-child relationship (Raby et al. 2015). In the context of parenting their own children, the interplay between a parent's own early experiences, her parenting behavior, and the nature of the relationship between herself and her child is captured in her representations of her child. The experience of trauma can lead to negative attributions about the world and the self, and for mothers this can manifest as more negative internal working models of self as parent and of the child (Muzik et al. 2013).

Attachment theory posits that in addition to the behavioral interactions between a parent and child, such as sensitivity and responsiveness, the parent's subjective experience of her child is also essential in shaping the attachment security of the child. Maternal representations contribute to the attachment relationship, both in their effect on maternal sensitivity/responsiveness and independent of this mediational pathway (Raval et al. 2001; van IJzendoorn et al. 1995). The quality of the attachment between a caregiver and her child in the first years of life is central to a child's later functioning (e.g., Sroufe et al. 2005).

Children of mothers who have experiences of trauma and psychopathology tend to be more withdrawn and fussy (Cummings and Davies 1994; Field et al. 1988), have poorer affect regulation (NICHD Early Child Care Research Network 2004), show more behavior problems (Goodman et al. 2011; Murray et al. 2003), and have more insecure and disorganized attachments (Lyons-Ruth and Block 1996; Martins and Gaffan 2000). These factors as well as infant temperament can lead to a bidirectional, transactional effect between maternal psychopathology and child outcomes (Beck 1996; Elgar et al. 2004).

Research on perinatal women with psychopathology has shown that treatment of the mother only (e.g., medication, individual psychotherapy) is not sufficient to address the negative impact of psychopathology on the child's development and attachment relationship (Forman et al. 2007; Nylen et al. 2006). Conversely, interventions that target parenting skills alone, without addressing the complex mental health and social needs of mothers, are unlikely to be successful in a population with histories of trauma (Reyno and McGrath 2006). Thus, to exert the greatest effect, Mom Power focuses on both mental health/self-care and parenting from a trauma-informed attachment framework. The program is not intended to be psychotherapy for the mothers nor is it designed to process individual past traumas. Rather, Mom Power addresses trauma by (1) creating a sense of safety, (2) promoting belonging and social support, (3) teaching skills to help mothers manage their emotions, (4) providing opportunities to build competence and self-efficacy, (5) creating an atmosphere of predictability and routine, and (6) providing an opportunity to experience joy. Additionally, Mom Power strives to improve attachment relationships by (1) increasing maternal reflective functioning allowing her to be able to

make sense of her own and her child's mental states, (2) offering mothers the experience of having her own thoughts and feelings held in mind by the facilitators, (3) building mothers' skills through didactic material and video modeling, and (4) providing an opportunity for mothers to practice in vivo the ideas and behaviors they are learning through supported separations and reunions.

Further, high rates of dropout and disengagement among early intervention programs for high-risk families lead to decreased validity and utility of many programs (Perrino et al. 2001). Women who have experienced trauma are at particular risk for low treatment engagement (Liang et al. 2005). Thus, a critical aim of the Mom Power model is to create a safe entry into care, decreasing barriers and increasing engagement and "buy-in" for additional treatment as indicated.

11.2 Mom Power Intervention

Mom Power is an attachment-based, evidence-supported, multimodal intervention that aims to enhance caregivers' mental health and sensitivity and nurturing parenting in mothers who have experienced trauma. Mom Power provides a conceptual framework for empathic and sensitive parenting and healthy self-care without being prescriptive. While manualized, there is flexibility. It accomplishes these goals through an integrated focus on self-care/mental health and parenting competence while at the same time enhancing social support and access to care. Mom Power aims to promote positive outcomes for children by enhancing parent-child relationships. Other attachment-based interventions share this aim (e.g., Erickson and Egeland 1999; Lieberman and Van Horn 2004; Lowell et al. 2011; Olds 2006; Powell et al. 2013); however, these interventions tend to take place over long periods of time in one-on-one interactions with a clinician. Such interventions often face barriers to uptake and engagement, particularly home-based programs (Muzik et al. 2014). Mom Power, instead, utilizes a time-limited, multifamily group format to encourage participant engagement and retention, provide social support, and connect parents to further services as needed. The curriculum presents theory-driven and evidence-based parenting and self-care concepts in a friendly, interactive, nonjudgmental, and accessible format.

Mom Power blends elements from several evidenced-based modalities including child-parent psychotherapy (Lieberman et al. 2005), solution-focused therapy (Lipchik 2002), motivational interviewing (Miller and Rollnick 2003), as well as elements from cognitive-behavioral (Dobson 2009) and dialectical behavior therapy (Robins et al. 2001), integrated into a curriculum that aims to engage participants in a dynamic, interactive, and helpful experience.

Intervention Structure The intervention is led by two trained co-facilitators, at least one of whom is a master's level clinician and serves as the lead facilitator. Although the model is successful with both facilitators holding master's level credentials, there is also the opportunity for the co-facilitator to be a trainee in a related discipline (i.e., psychiatry, social work, psychology, early education) and be able to learn and practice the model with support from the lead facilitator. The model includes ten weekly group intervention sessions and three individual

sessions (before, midway, and after the ten weekly groups). The individual sessions are designed to engage, motivate, and build trust and rapport with participants. Additionally, individual sessions allow an opportunity to assess the safety and tangible needs of each family, including determining the need for further treatment. Group facilitators discuss personal goals, barriers, and achievement with each participant and provide individualized referrals for further services as desired and indicated. Facilitators provide a "warm handoff" to such services whenever possible.

Group Session Structure Mothers are invited to bring all children under the age of 6 to the Mom Power group. Group size is typically six to eight mothers (but can be up to ten) and their children. Each group session begins with a shared meal, providing a chance for informal connection among participating families and facilitators and an opportunity for families to feel nurtured and cared for. During mealtime, children either join the mothers' table or play with each other and childcare providers ("Child Team") in a nearby space. Facilitators lead a discussion of "highs and lows" of the week and ask mothers to reflect on the previous session. After mealtime, mothers attend an approximately 90–105-min Mom Group. Mom and Child Groups are held in adjacent, yet separate spaces, leading to a natural mother-child separation. This separation and subsequent reunion are used as valuable assessment and therapeutic opportunities (described in more detail below). Each Mom Group session follows a structured format and has a specific theme related to education regarding child development, attachment needs, and effective parenting; coping with past or ongoing trauma and emotional distress; and improved self-care using mind-body techniques (more details on content below).

Child Group The Mom Power Child Team is led by a master's level clinician and staffed by trained community volunteers, psychology undergraduates, and/or social work graduate students. The Child Team aims to provide a safe, predictable, and welcoming environment for children with one-on-one attention. With the support of the Child Team leader and the Mom Power supervisor, the Child Team members work closely and thoughtfully with each child, engage the child in developmentally appropriate activities, and support the mother-child dyad while mothers are present. For Child Group sessions, a play-based written manual is provided to Child Team leaders that offers a menu of options for weekly activities. The amount of structure is flexible with Child Team leaders gauging what each group of children needs in order to feel the environment is predictable and comfortable. The therapeutic goals of the Child Team are to create a safe, nurturing, and play-based environment for the infants, toddlers, and preschoolers while their mothers are in their group. In addition, we strive to learn about the children's behavioral and emotional coping with separation and peer play, carefully observe and assess the children's developmental functioning, and actively assist children in practicing safe and predictable separation and reunion routines with their mothers. "Sessions end with a facilitated 10–15-minute mother-child activity ("Circle Time") that includes activities such as singing, finger-play, or physical activity (e.g., mother-child yoga) meant to promote fun family time and end the session on a positive note" or something similar.

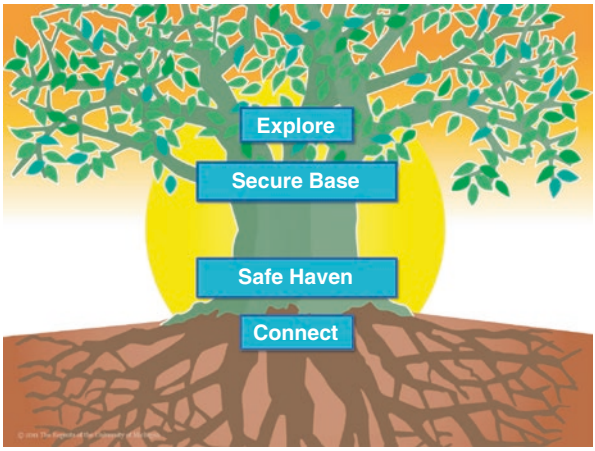

Fig. 11.1 The Mom Power "tree" metaphor

Intervention Content The curriculum presents the theory-driven and evidence-based parenting and self-care skill concepts in a friendly, interactive, nonjudgmental, and accessible format. The focus of the didactic parenting material is on promoting secure attachment between parent and child. Mothers learn how to function as a secure base from which children can explore and a safe haven for the child to return to. Mom Power uses a powerful and elegant metaphor of a tree to illustrate the role of a parent in creating a secure base and safe haven (both terms coined by John Bowlby the founder of attachment theory; Bowlby 1969), for her child (see Fig. 11.1). Parents are represented by the outer rings of the trunk that hold and provide support for the developing child. The branches of the tree represent a child's need to explore and "branch out" from the mother who acts as a secure base for exploration, while the roots of the tree represent a child's need to return to the mother as a safe haven to connect and "build roots." While branching out, a child is playing, learning, and trying new things. During these times, the child needs the mother to help her, enjoy with her, and to attend to her to keep her safe. When children feel unsure, vulnerable, hurt, or distressed, she needs connection with the mother to build, nurture, and strengthen her roots. The mother meets this need by offering nurturance, restoring her emotional balance, and repairing disruptions in the relationship.

With the use of the tree metaphor, mothers discover how to meet a child's needs while exploring and connecting with a caregiver, how to repair a disruption in the relationship, how to co-regulate a child's emotions, and how to create an atmosphere of warmth, joy, and delight in which their child can learn and grow. They learn how a child's sense of self develops through this balancing of exploration and connecting and through daily experiences of having their needs met. In addition, parents explore what experiences from the past might impact their parenting and what current experiences may be affecting their children.

In addition to learning about attachment during group sessions, parents have the opportunity to practice separations and reunions in a supportive environment that allows them to experiment with new ways of relating to their children and to put into

practice the skills they are learning in class. The intervention encourages mothers to gain insight and increase reflective capacity through supportive exposure to attachment-based parenting principles.

Each session also includes a focus on self-care. The self-care skills utilize strategies derived from DBT and mindfulness and guided imagery to improve affect regulation and decrease symptoms associated with depression, anxiety, and PTSD. There is a growing body of evidence that mind-body skills such as these are effective for preventing and treating stress, depression and anxiety, PTSD, traumatic brain injury, and pain syndromes (e.g., Hofmann et al. 2010). When mental health symptoms are under control and mothers are not distracted by these symptoms, they have increased capacity to attend to their children's feeling and needs and are more capable of self-reflection. The focus on parenting and self-care is interwoven throughout the manual and each session.

While manualized, the curriculum is also highly personalized and interactive and meant to create a welcoming, trust-building atmosphere, in order to plant the seed that relationships, both with peers and professionals, can be "safe and satisfying" for the mothers. As outlined above, the Mom Power intervention curriculum blends therapeutic elements consistent with several evidence-based practices. The group delivery also adds practices informed by social learning theory (Grusec 1992). As the group process evolves over time, the psychoeducational component decreases and gives way for more "therapeutic reflection" and insight generating processes, using strategies such as the "Wondering and Response Wheel" (Fig. 11.2). This wheel helps parents walk through a process that begins with observation of child behavior, then generating inferences about the child's underlying feelings and needs, and, finally, formulating a response. The "wheel" implies

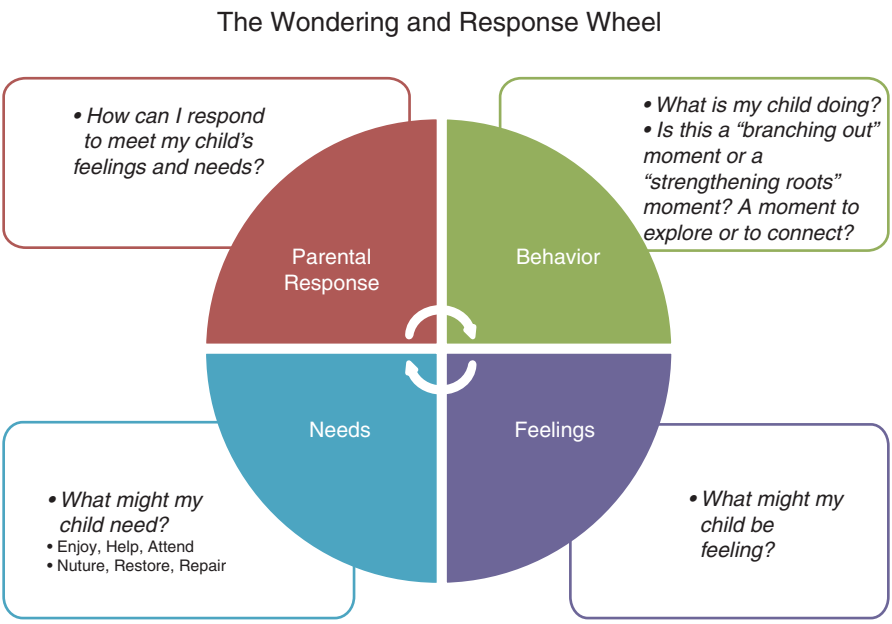

Fig. 11.2 Wondering and Response Wheel

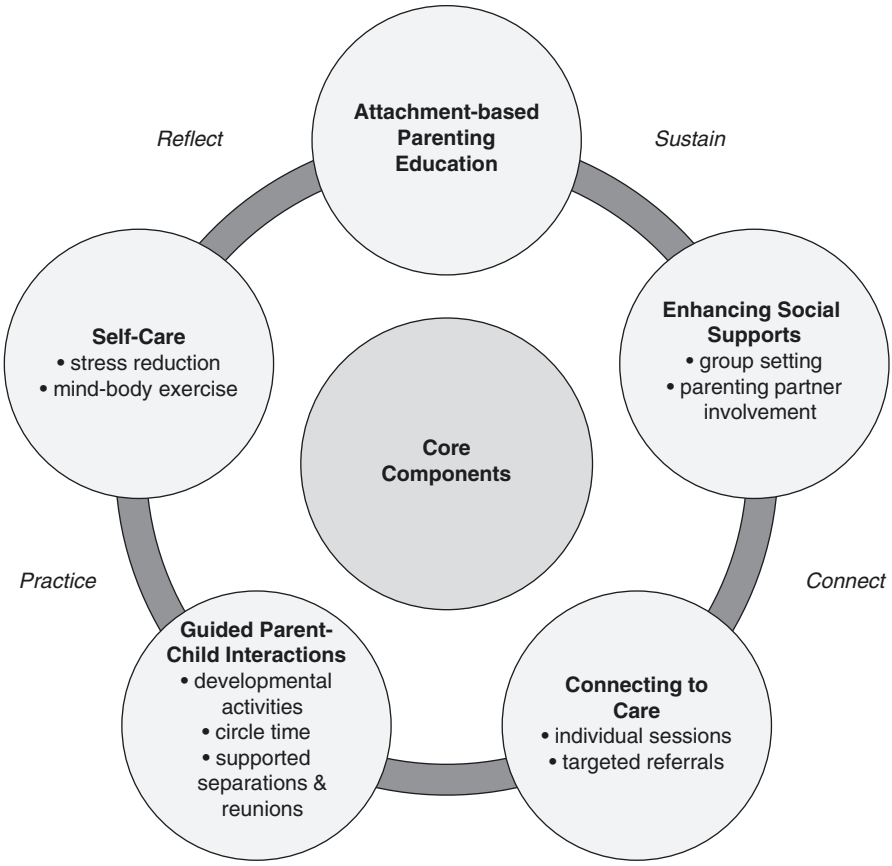

Fig. 11.3 Mom Power core components

that this process is often iterative and that after responding parents can then again observe their child's behavior to determine if the response was effective in addressing the child's feelings and needs. Mom Power intervention goals are to create "buy-in" for treatment, provide mental health and parenting psychoeducation, enhance self-care and stress coping skills (thereby reducing depression and anxiety), and, finally, enhance mothers' reflective capacity so that they can utilize these reflections to enhance sensitive parenting.

The key treatment principles of Mom Power are safety, trust building, enhancing self-efficacy through empowerment and skill-building around self-care, problem-solving, emotion regulation, and parenting. Mom Power accomplishes this by delivering five core components (see Fig. 11.3):

1. *Enhancing social support*. Many of our participants feel isolated in their lives often due to teen parenting, family dysfunction, poverty and lack of transportation, or separation due to military service or incarceration. Mom Power enhances

social support through two key facets. First, the group sessions create a shared experience with opportunities for informal relationship building among participants; give mothers a sense of comradery, knowing that they are not the only ones facing these challenges; and can act to decrease stigma of seeking services. Sharing a meal together is a powerful way to build connections in a relaxed atmosphere. Additionally, the curriculum includes a session where mothers are invited to bring a "parenting partner" guest (e.g., the child's father or mothers' spouse, friend, relative, or other key support person) to the sessions, thus also enhancing "buy-in" from critical "others" in the mother's world. Additionally, facilitators provide resources and encourage ongoing activities that offer the opportunity for building social support such as community programs, library story time, or parenting support groups.

2. *The attachment-based parenting education curriculum* emphasizes responsiveness and sensitivity to young children's separation and reunion experiences. The curriculum introduces key topics in parenting and child development. Engagement in activities is designed to practice skills and reflect on interactions while also emphasizing attachment concepts in an effort to help mothers identify and address children's emotional needs. The program explicitly avoids directives about specific parenting behaviors (e.g., spanking) and instead shares research-based knowledge while encouraging thoughtful reflection on the part of the parents to decide what behaviors are in keeping with their values and goals. Parents learn how to function as a secure base and a safe haven for their child; how children need to explore and to connect with a caregiver; how to meet a child's needs for attention, help, and enjoyment when exploring; how to meet a child's need for parents to nurture, restore, and repair when connecting; co-regulation, balanced parenting, and how to repair a disruption in the relationship with their child; and when to lead and when to allow their child to lead, when to support, and when to set limits.
3. *Mental health and self-care practice* teaches mothers how to reduce their own distress during emotionally evocative parenting moments and how to recognize their own emotional dysregulation such as depression and trauma-related anxieties. To help mothers build a "self-care toolkit," each group session ends with hands-on practice of one evidence-based stress reduction "skill" including guided breathing, visualization, relaxation, or mindfulness. These concrete skills increase mothers' sense of efficacy in addressing their own symptoms. They also serve to normalize the need for mothers to take care of themselves in addition to taking care of their children. Mom Power teaches parents how to manage their stress and symptoms so that they can be more grounded and present for their children. These mind-body skills help increase distress tolerance and affect regulation. By helping parents regulate their own feelings, we help them to increase their capacity for co-regulating with their children.
4. *Guided parent-child interactions* emphasize creating safe and predictable routines for both mother and child. When mothers leave for their group sessions, "goodbyes" are acknowledged and reunions are anticipated using songs or games. Children learn that it is "safe" to be left briefly because their mothers will come back if they need comfort. At reunion, the group facilitators are able to

observe and support reunions in "real time" and help mothers recognize and respond to their children's emotional needs in that moment. Mothers are encouraged to anticipate, observe, and reflect upon these separations and reunions, as well as identify ways they might want to "try something new" to address their children's feelings during separation/reunion.

5. *Connecting to care* involves identifying and connecting women to ongoing care beyond the Mom Power program (if this is indicated). This is a critical component of the model, as we know that in 10 weeks we can't give participants everything they need to know to parent successfully until their children reach adulthood. During the individual sessions (midway and at the end of the group), the facilitators have the opportunity to discuss unresolved areas of challenge and to provide individualized, tailored information for connecting mothers to services in their communities. The facilitators are very hands-on; for example, they make phone calls with the mothers to community agencies and problem-solve potential barriers to engagement.

In addition to adhering to the core components outlined here, the Mom Power program also combats structural barriers to engagement identified in prior research (e.g., Dumas et al. 2007), by providing weekly transportation to and from group sessions, a shared meal during group sessions, and no-cost childcare, as an integral part of the Mom Power model.

Parallel Process Through a relationship with the facilitators in which the facilitators play the role of secure base/safe haven, a participant has the experience of having her thoughts and feelings held in mind by the facilitators. Facilitators do this by creating a welcoming environment where all thoughts and feelings are respected and welcomed, where the facilitators reflect and validate feelings, and where the facilitators respect the participant's pace. Facilitators not only present educational material but also meet the participants' needs while they are exploring and when they need connection. Facilitators provide support and encouragement when participants are trying new skills and ways of interacting with their children.

Moreover, when we focus on self-care, we are signaling to the mothers that we care about them as individuals and that their well-being is important. We not only want them to focus on the feelings and needs of their children, but we want them to know that focusing on their own feelings and needs is important as well. We believe that women can be better mothers when they make taking care of themselves a priority.

Reflective Consultation Mom Group facilitators and the Child Team leader meet weekly for face-to-face consultation with a Mom Power supervisor to process aspects of the group sessions. This opportunity to reflect on observations and plan for tailored interventions is a critical part of the model, providing therapists with an opportunity to reflect on their own experiences, plan for the session, and think together strategically regarding how to best support each mother and child. In addition, following each group session, the entire Mom Power staff participate in a 20–30-min debrief session, sharing observations of that day. The Child Team's observations of child play and peer interactions are shared with Mom Group facilitators. Child Team members are updated about relevant challenges faced by the family that may have surfaced during the Mom's Group and may impact the child's

behavior. This debrief session was introduced to facilitate information flow across both the Mom and Child Teams and to empower the whole team to share one common therapeutic stance toward each family.

11.3 Summary of Research Findings

Our research studies have confirmed that Mom Power participants are high-need families with significant risk factors, including trauma exposure, psychopathology, poverty, and single parenthood (LePlatte et al. 2012; Muzik et al. 2015). Despite this, the program has proved to be acceptable and engaging to parents with >65% retention. Participants reported that they received helpful parenting information from the intervention, that they felt welcomed by the friendly facilitators, and that they felt more supported and made connections with other women in the group as a result of the intervention (Muzik et al. 2016). The effects of the Mom Power program in improving parenting and mental health have been evaluated in two empirical studies. First, in an "open" trial (i.e., no control group) with 99 mothers completing Mom Power, we found that the program decreased mothers' depression, PTSD, and caregiving helplessness and improved parenting confidence, social support, and connection to care (Muzik et al. 2015, 2016). In a randomized, controlled trial we found that mothers who participated in Mom Power showed improvements in mental health symptoms and parenting stress and an increase in "balanced" maternal representations and in maternal reflective capacity, that is, insights regarding their parenting qualities and their children's thoughts, feelings and needs (Rosenblum et al. 2017a, b). There were no significant changes in the control group. The differential results of the Mom Power versus control condition on maternal mental health and parenting were even more accentuated for mothers with a history of interpersonal trauma (Rosenblum et al. 2017a, b). Furthermore, more recently, a neuroimaging study showed first pilot results supporting that mothers undergoing the Mom Power intervention display changes to their "parental social brain" indicative of greater reflective capacity and empathic attunement towards their children compared to those mothers in the control group (Swain et al. 2017; Muzik et al. under review).

11.4 Case Vignette

The family described here represents a common clinical presentation to the Mom Power group. It illustrates many of the risk factors present in many Mom Power participants and exemplifies the type of change we frequently see in mothers over the short time frame of the intervention.

Keisha[1] was a 22-year-old, African American woman, who was referred by her primary care physician to the Mom Power group. During her childhood, Keisha experienced abuse and neglect and was in and out of foster care. Keisha was a single parent to two young children: 3-year-old DeShawn and 8-month-old Latrice. She

[1] Names have been changed.

had experienced intimate partner violence in her relationship with DeShawn's father. At her initial individual session, she described DeShawn as being "mean" and "rotten" and explained how he would "act out," "try to hurt [her]," and "never listen." Keisha reported high levels of depressive symptoms and moderate PTSD symptomatology prior to the intervention. She later shared with us that she was initially resistant to coming to group, but liked the idea that she would "get some time away from the kids" and a free meal and decided to give it a try.

In the first few sessions, we observed that Keisha was very focused on Latrice during separations and reunions and that during these times DeShawn would get more dysregulated and act out, even becoming aggressive at times. When we first introduced the tree metaphor and discussed meeting children's needs for connection in addition to exploration, Keisha had a hard time acknowledging that DeShawn had a need for connection, describing him as "very independent" and commenting that he "doesn't care if I'm even here, unless he wants to bother me." Staff introduced the group to the concept of "confusing signals"—the idea that children may signal their need for connection with confusing and counterintuitive behavior.

Over time, as group progressed, Keisha began to realize that she was seeing Latrice as having needs, but had not considered that DeShawn had needs as well. Following one particularly hard reunion during which Keisha had entered the Child Team room midway through a session to feed Latrice and upon her arrival DeShawn had run around the room knocking other children's toys out of their hands and ripping a picture off the wall, staff suggested that Keisha use the Wondering and Response Wheel to decode DeShawn's confusing behavior. Keisha first described the behavior she saw (running around, being destructive). Next, drawing on the tree metaphor, staff wondered together with Keisha about whether DeShawn's acting out behavior might indicate his need for connection and therefore a "building roots" moment. Keisha was at first unsure what DeShawn was feeling, but noted that he seemed to be feeling a combination of overly excited and angry, and maybe even some jealousy. As they thought this through together, Keisha was able to see that DeShawn needed help in restoring his emotional balance. Staff worked with Keisha to develop a plan to try something new on her next reunion with DeShawn. Together they decided that staff would call ahead to the Child Team prior to reunion so that they could bring DeShawn to greet Keisha in the hallway, thereby giving Keisha the chance to reunite with him one-on-one without having to worry about Latrice at the same time. In addition, Keisha also identified several "restoring emotional balance" strategies to try, including "calming feelings first" and "identify and label feelings." Staff were supportive and reinforced her goal, noting that these strategies might help calm the situation down in the moment and would help her to recognize and acknowledge both the children's and her own feelings in these challenging situations. When, with the support of staff, Keisha put the plan in to action, DeShawn was much more regulated and well behaved. At the following session, as Keisha processed how it had gone with the group, she acknowledged feeling surprised by how much these strategies had helped her children and had also helped her to feel more emotionally regulated and in control of the situation.

Later in the intervention, as the group explored how past experiences may influence their parenting and how they see their children, it occurred to Keisha that in certain ways DeShawn was reminding her of his father and that she was treating him accordingly. She realized that her own history of abuse was coloring how she interpreted his behavior as "mean." Keisha made a goal of reminding herself that he was only a little boy and that his challenging behavior was often his way of showing that he needed connection.

At the end of the ten weekly multifamily groups, Keisha and her children had made a great deal of progress, and Keisha in particular appeared to feel more confident and calm in her responses and was better able to balance attention and accept the needs of both children. During the final home visit following the multifamily sessions, she acknowledged that the group had been helpful. Yet in conversation, she also acknowledged a wish for more support. The clinician acknowledged that for many parents the Mom Power group was a way of starting a process and introduced the concept of additional services to "continue the growth" she and her children had experienced over the past several months. The clinician facilitated her contact with a local community mental health provider to initiate infant mental health home visiting services. Of note, in her final interview, Keisha described DeShawn as "adventurous, sensitive, and funny." She told us, "taking this group made me realize I never had any roots of my own, so I'll have to grow them with my kids."

11.5 Future Directions

In addition to the traditional Mom Power curriculum, it has also been adapted to support military families, fathers, and early education providers. Further development is underway to try to "reach families where they are," such as in primary care settings and through existing service models. A federally funded randomized controlled trial of Mom Power in Early Head Start is underway, as are other studies examining the effectiveness of the adaptations and exploring other important outcomes.

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Project BRIGHT: An Attachment-Based Intervention for Mothers with Substance Use Disorders and Their Young Children

12

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Abstract

In the context of increasing rates of opioid misuse, particularly by women of childbearing age with histories of trauma, this chapter describes the background, evidence base, conceptual framework, and practice parameters for an attachment-based evidence-informed dyadic intervention utilizing the principles of child-parent psychotherapy with mothers and infants impacted by substance use disorders (SUDs). A strong focus of this chapter is to elaborate on the emotional needs of mothers in early recovery as they enter into the parenting role and on the needs of substance-exposed newborns and their role in fragile infant-parent dyads. A case is presented at the end of the chapter so that readers are better able to conceptualize this novel application of dyadic psychotherapy.

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12.1 Introduction

Since 2002 rates of heroin and other opioid use among US women have doubled, and the increase is particularly apparent among non-Hispanic whites and those living in the Northeast (Jones et al. 2015). The Substance Abuse and Mental Health Services Administration (SAMHSA) reports that 5.4% of US pregnant women aged 15–44 in 2012–2013 used illicit substances during pregnancy (SAMHSA 2014). Publicly funded addiction treatment programs do not capture pregnancy status at intake, but data from 2014 estimate that 2% of enrollees in these programs were pregnant women. Although pregnancy is often thought of as a time when women are highly motivated for treatment, many do not report their substance use due to shame, stigma, lack of confidence, and fear of losing their infant to child welfare (Spielman et al. 2015). It is equally important to note that these women often have extensive histories of childhood and adult trauma and present with co-occurring mental health disorders (Kaltenbach 2013). Their infants are at risk for cognitive, social, and emotional difficulties due to in utero exposure and the quality of relationships with caregivers and caregiving practices (Nair et al. 2003; Salo and Flykt 2013). Even when women do seek treatment and commit to sobriety during pregnancy and early parenting, few interventions exist to address the complexities of their histories, current lives, and the parenting process they are about to embark on. In the following paragraphs, we first briefly review what is known about pregnant and parenting women with SUDs in terms of trauma history, mental health, child development, and mothering. Second, we describe the status of existing programs. Third, we provide a conceptual framework for our intervention. Finally, we offer details about Project BRIGHT (Building Resilience through Intervention: Growing Healthier Together), an attachment-based evidence-informed dyadic intervention for mothers in treatment for opioid addiction and their young children, including a composite case example.

12.2 Pregnant and Parenting Substance-Dependent Women: Trauma and Mental Health

Research suggests that pregnant and parenting women with SUDs are more likely to have family histories of substance misuse, high rates of complex trauma, and co-occurring mental health disorders. These factors alone, regardless of substance misuse, are correlated with suboptimal parenting (Kaltenbach 2013). Additionally, posttraumatic stress disorder (PTSD) and SUDs are often correlated. A review of 72 studies on parental PTSD symptoms and parent-child interactions found some support for the notion that these parents are less likely to be emotionally available and more likely to have negative perceptions of their children (however, some of the reviewed studies did not show these associations). In the affected dyads, children tended to be more easily dysregulated or distressed than children of parents without PTSD (van Ee et al. 2015).

12.3 Impact of Neonatal Exposure to Substances on Child Development

Approximately 60–80% of infants born exposed to opioids develop neonatal abstinence syndrome (NAS). NAS contributes to problematic infant neurobehavior and long term may impact hyperactivity, short attention span, and memory problems. Studies of neonatal opioid exposure also indicate increased risk of low birth weight, respiratory complications, and infant mortality (Behnke et al. 2013). Children who are substance-exposed are at increased risk for an insecure or disorganized attachment, likely due to parents' co-occurring mental health disorders and transactional effects between the parent and child (Salo and Flykt 2013). These findings suggest that interventions must focus on the parent-child relationship, as well as aspects of parental well-being, in order to augment protective factors in place for the child and the dyad (Salo and Flykt 2013). Although the full impact of prenatal opioid exposure on children's long-term development is not yet fully understood, given the risks associated with maternal opioid use and this fragile beginning, support for the mother during and after pregnancy is recommended in order to promote healthier dyadic outcomes (Logan et al. 2013).

12.4 Impact of Substance Use Disorders on Parenting: Importance of Attachment

Cause I used to think that being a parent… being a mother was just being the mother, just feed 'em, change 'em, and that's it. You know? I did not do any bonding with none of my other kids. I don't think I even read 'em a book once, BRIGHT participant reflecting on parenting relationships while using heroin.

The attachment relationship is essential to the infant's overall development, including trust, promoting what is referred to as the secure base. It is health promoting in parents as well, as the formation of an attachment relationship provides a sense of pleasure, connection, and competence for the primary caregiver (Slade 2005). From this trusting relationship, a child feels safe navigating potentially stressful situations. The pleasure and reward parents often feel during attachment are compromised when SUDs interrupt the healthy functioning of motivation and reward systems in the brain. As the substance-exposed newborn may have particular difficulties regulating his or her various states of sleep and hunger, the mother's responsive care is particularly essential, yet she is less able to read and respond to her baby's cues (Pajulo et al. 2012). Studies have also found greater levels of maternal intrusiveness, where a parent overrides the child's ongoing behavior and redirects to a parent-led activity (Hans et al. 1999). Given the centrality of the attachment relationship in young children's development, the mother's decreased responsiveness to her infant, intrusiveness, and the dysregulation of the mother-infant dyad are particularly detrimental.

12.5 Existing Interventions

Pregnancy and preparing for motherhood often motivate women with SUDs (particularly involving opioids) to consider treatment, given the fear and guilt regarding the impact of their substance misuse on their unborn child and the increasing rate of infants' removal by child welfare (Rutherford et al. 2013). This motivation provides an optimal treatment opportunity. Hence, treatment programs that simultaneously address women's recovery and parenting are well suited for this time. Historically, many programs intended to support mothers in recovery have been centered on didactic parental education that reduces problematic parenting with the goal of improving child behavior. Outcome intervention efficacy has been mixed, perhaps in part because they do not take into account the extensive parental trauma histories and neurobiological changes (Suchman et al. 2004). A shift in researchers' understanding of the centrality of parent-infant relationships in improving outcomes is slowly beginning to favor relational interventions grounded in attachment theory (Bromberg et al. 2010; Pajulo et al. 2006; Suchman et al. 2008). A 2015 review of 21 studies of treatments for SUDs and parenting recommended concurrent enrollment in treatment programs to address substance misuse and parenting, which represents a shift in the historic trend of focusing solely on the individual in early recovery. One important caveat is that the parenting intervention begins with a focus on psychological processes such as development of emotion regulation mechanisms, before fully addressing effective parenting strategies (Neger and Prinz 2015). Difficulties with emotion regulation are common in people who misuse opioids. Furthermore, emotion regulation skills are crucial as parents help shape their child's emotional experiences and they have a regulatory function within the parent-child relationship (Rutherford et al. 2013).

12.6 Conceptual Framework for Intervention

Given the challenges facing mothers with SUDs and subsequent risks to the parent-child relationship, interventions that foster trust and attachment provide a necessary support. Studies have validated attachment-based interventions which focus on addressing parental internal representations, those beliefs and expectations held about one's self and important others developed through transactions with primary caregivers and the environment (Fonagy et al. 2002). An additional specific focus of these interventions is reflective functioning (RF), or the capacity of the parent to understand her own and her child's feelings, needs, and motivations and link these inner states with external behavior (Slade 2005). "A mother's capacity to hold in her own mind a representation of her child as having feelings, desires, and intentions allows the child to discover his own internal experience via his mother's representation of it" (Slade 2005, p. 271). If a parent can hold in mind her child's mental states, she is more likely to behave in an optimal way toward that child, decreasing the likelihood of neglect or maltreatment. Even with histories of trauma, parents with high RF are more likely to have securely attached children; conversely, low RF

is associated with hostile and withdrawn parenting leading to decreased social competence in children (Grienenberger et al. 2005). An explicit focus on working at the representational level and building RF for mothers with SUDs and their children is supported by evidence from the work of Suchman (Pajulo et al. 2012; Suchman et al. 2010). An intervention approach that addresses attachment and RF is essential as many of these mothers yearn to parent their children but may have limited skill sets given their own histories of trauma and being poorly parented. Increasingly, their children are removed from their care at birth, leaving the mothers bereft and in need of an effective intervention that will support their recovery from opioid misuse, enhance the possibility of reunification with their child, and encourage optimal parenting practices.

12.7 Project BRIGHT: Overview

Project BRIGHT is an evidence-informed dyadic parenting intervention initially developed for the use in residential treatment programs for mothers with SUDs and their young children birth through five (2009–2012) and subsequently delivered in outpatient opioid treatment settings (2012–2016). BRIGHT is offered as an enhancement to substance use treatment and not as an addiction treatment on its own. Sessions can start in pregnancy, as the mother is beginning to anticipate the birth of her baby, soon after the infant is born or during the toddler or preschool years. Number of sessions can vary, but, optimally, the parent and child meet with the clinician for approximately 9–12 months, although progress has been noted with as few as 10–12 sessions. Early findings demonstrate that BRIGHT is associated with improvements in maternal mental health and parenting capacities (Paris et al. 2015).

BRIGHT is informed by principles and techniques of the evidence-based child-parent psychotherapy (CPP; Lieberman and Van Horn 2005; Toth et al. 2006) and strategies derived from infant mental health interventions for vulnerable parent-infant dyads (e.g., Slade et al. 2005) including parents with SUDs (Suchman et al. 2010). CPP is a dyadic intervention for parents and young children affected by trauma and mental health difficulties, firmly based in attachment theory. Like CPP, BRIGHT is a dyadic therapeutic model, using play and relationship-focused activities to improve parent-child interactions and overall development. Clinicians promote developmental progress through play, physical contact, and language; offer unstructured developmental guidance; help parents provide protective behavior; translate the meaning of children's feelings and actions for parents; provide emotional support and empathic communication; and provide concrete assistance with problems of daily living. Relying on current best practices for mothers and infants affected by parental addiction, BRIGHT clinicians work to build emotion regulation skills and reflective functioning as mechanisms for a parent to become attuned to her child's emotional and behavioral needs. Additionally, the clinician helps the dyad to regulate strong emotions that emerge in the parenting process and link past relationships to present parenting, promoting attunement and sensitivity to the child.

12.8 Balancing Dyadic Trauma Treatment with Early Recovery

Given that BRIGHT integrates the principles of CPP and infant mental health with research on the impact of addiction on parenting, one main tenet of the intervention is the importance of shifting among therapeutic stances emphasizing recovery, processing and integrating trauma, and attending to parenting and the mother-child relationship. We initially work to engage the dyad in treatment through listening to the parent and child's needs and narratives and demonstrating that we can tolerate difficult emotions. While we are not providing addiction treatment, we explore a parent's recovery from active addiction, question what has promoted and prevented healthy recovery in the past, and acknowledge that difficult affect can be a trigger to relapse. As we build initial rapport with mothers in early sessions, we explicitly state that we want to hear when their recovery is threatened or when they have had a relapse. Our main goals in BRIGHT treatment include (1) integrating of past and present parental internal representations, (2) supporting self-narratives of competence and confidence, (3) encouraging parental reflective functioning, (4) developing playful moments of pleasure and connection, and (5) promoting optimal protective behavior in parents. The following sections will provide details of the BRIGHT intervention including a composite case example.

12.9 Engagement and Assessment

Attending to Parent and Child Central to dyadic treatment is a balance of attention between the parent and young child. Simultaneously, trauma-informed care emphasizes the importance of asking clients early in treatment what they want and need in order to feel safe and supported. When meeting with dyads for the first time, we make extensive efforts to elicit from parents their desired gains from speaking with us and work to match our approach to their needs. We also attend to the child in the room, remaining mindful of implications of nonverbal communication for safety and caring. It is challenging to balance many messages at once, so we use different "channels" to communicate to each member of the dyad. For example, we might use words that encourage a mother's need to talk about distressing events while using a tone of voice and body language that convey calm containment, hoping to offer both mother and young child some regulatory support. When possible, at the beginning we meet with mothers alone at least once to gather important historical and developmental information and convey that sharing traumatic content in front of a child can be difficult for the child. An additional goal is to explain and discuss that we intend to focus on the mother's needs while also attending to the developmentally different partner (the child), who sometimes has competing ones.

Because we deliver a trauma-informed intervention, we are explicit with parents about collecting information about traumatic events in their lives and the lives of their children, as well as about their symptoms of distress and PTSD. We gather this information using standardized instruments and clinical interviews.

12.10 Beginning Treatment: Understanding the Individuals and the Dyad

Listening to Differing Narratives Often, in order to create a treatment frame that will address both parent's and child's needs, we begin with understanding the experience of the parent, her recovery, and the process of becoming a parent while working toward sobriety. Parents in recovery come to treatment with strong self-narratives influenced by their own and society's understanding of their substance misuse. We think of narratives as the stories we tell ourselves about ourselves and the systems with which we interact. They can affect our capacities for healthy future-oriented responses to current or future events. Reid and colleagues suggest that parents may identify as "bad," feel "thwarted" in their efforts to move fully into the parenting role, or experience themselves as "addicted" before experiencing themselves as parents (Reid et al. 2008). Overall, we aim to help mothers and young children experience a sense of forward movement and healing. Yet, we begin by tolerating complex and fraught narratives from the parents' past. Mothers in BRIGHT typically have experience with 12-step, self-help models of addiction treatment. It is essential for us to be familiar with the ideas that these groups emphasize. Being comfortable with the language and the stance used by recovery resources in our communities demonstrates our ability to view the parent as someone working toward recovery.

Tolerating Feelings An essential part of treatment is demonstrating a capacity to tolerate strong feelings as mothers address what it is like to immerse themselves simultaneously in parenthood and early recovery. For some parents, spending an hour in a therapy room with a child who may test limits is extremely evocative. We name the challenge and aim to support the different developmental needs of parent and child. Additionally, we describe the connection between exploring difficult emotions in therapy and the need to build affect regulation and self-soothing skills so that parents do not find themselves overwhelmed. Our research with women reflecting on their experiences of parenting in early recovery suggests that themes of guilt, shame, and fear permeate their narratives (Spielman et al. 2015). Each of these distressing feelings may shape the way parents present to us and interact with their children. We use reflection and supervision to tolerate these feelings and navigate among the strong pulls of guilt, often masquerading as rage, shame, camouflaged as loathing and doubt, and fear, coloring thoughts about the future and a parent's ability to trust.

Seeing the Baby We also take time in early sessions to understand the infant or young child. Most of the children have been exposed in utero to substances and also experienced very early traumatic events. Understanding children's regulatory capacities and their ability to explore and seek safety and find pleasure or connection is essential to formulating treatment goals. For example, a child who struggles to integrate environmental stimulation needs a very different physical treatment space than a child who seeks stimulation through objects.

12.11 Ongoing Treatment: Themes and Goals

Integrating Internal Representations We work toward the *first goal* of helping mothers tolerate and eventually integrate internal representations of their past and present selves. Often, parents' past representations are conflated with negative behaviors and traumatic experiences intertwined with distressing childhoods and active addiction. These painful self-representations affect parents' motivation, emotions, interactions, and representations of others, including their children. Parents work actively to shape new "clean" versions of themselves. We think that parents are best served by integrating these versions of themselves, not denying painful past moments. Optimal self-representations contain hopes for the future without risking the repetition of old mistakes and misjudgments. We strive to support parents as skillful and self-aware while recognizing that they are often newly exploring agency, self-determination, and trust in the world.

Parenting Confidence Evidence suggests that a sense of parenting confidence and competence can improve child outcomes (Sanders et al. 2002). Therefore, a *second related goal* is supporting a mother's confident self-narratives, outside of and within the parenting realm. In each session, we highlight and explore moments of both kinds of success—successes in arriving on time, getting a job, or completing a goal and successes in setting a limit with a child, offering comfort, or predicting a child's need. We support the mother's expertise in knowing her child, and when we think parents may benefit from developmental guidance, we offer it with a parent's permission. Because we recognize that our enthusiasm about a mother's success could just as easily activate her own self-doubt as it could buoy her, we are delicate with moments of praise. Typically we check in often regarding a parent's reaction and ask questions like "how does it feel to hear me say that?" in order to ensure that there is room for a parent to respond regarding how ready she is to see herself as competent.

A *third goal* of BRIGHT is enhancing a parent's reflective functioning by wondering about feelings and behaviors in the parent-child relationship. Interpreting and translating meaning is often a part of sessions, and clinicians see themselves as bidirectional translators, not only helping parents understand their children but also helping children to understand the sometimes strong affect of their parents. Additionally, the clinical approach includes making the clinician's relationship with the client explicit, talking about hurt and repair, mistakes, and wishes. This method is then used to promote a parallel understanding for the parent of what her relationship might be like with her child. If the mother is able, the clinician engages her in conversations about upset feelings that might occur in their interactions. She uses these moments to wonder with the parent what it might be like for her child to experience similar feelings. If the mother is unable, the clinician will note this difficulty in experiencing and discussing upset feelings and remain mindful that this might be similar in the mother's interactions with her child. This careful attention to all levels of relationship between clinician, parent, and child and the ability to discuss them openly are essential features of BRIGHT.

Pleasure and Play There are some aspects of CPP that we find particularly helpful in our work with mothers with SUDs and their children. The developers of CPP rightly emphasize the importance of parent-child representational play as a portal into understanding the child's experience and facilitating new pleasurable interactions. However, the BRIGHT dyads more often involve infants, as mothers are frequently motivated to enter treatment during pregnancy. BRIGHT attends to the needs of parent-infant dyads before representational play emerges. Therefore, for the *fourth goal*, we focus on "playful moments" of pleasure and connection, highlighting the times where infants imitate parents in gaze, gesture, or vocalization. This goal requires that clinicians recognize infant behavior such as protolanguage and mirroring gestures as relational attempts and point them out to parents. Also, many mothers lack their own experiences of pleasure and play in childhood and are challenged to relax and engage with the available toys and materials. Rather than focusing on "play" explicitly, we focus on "pleasure." When appropriate, we use sensory and physical modalities to promote touch, connection, and shared motor patterns to highlight somatic connections between mother and child. We talk explicitly about the role of pleasure in mothers' lives, in recovery, and in the ways that substances of misuse affect the pleasure centers in the brain. Clinicians point out when a parent's interaction with her infant promotes pleasure for both parties in the dyad.

Promoting Protective Behavior The *fifth goal* of promoting optimal protective behavior is also an important aspect of CPP. Mothers participating in BRIGHT have typically experienced about a dozen traumatic events in their lives and can have difficulties in assessing and ensuring their own safety, let alone that of their child. The parent may discuss past experiences of feeling unsafe and then wonder when the same might have been true for the child. Some mothers are able to tolerate this exploration and show us this by allowing appropriate affect to emerge, becoming tearful when they remember something scary or drawing their child close when they speak of moments they wish they had been able to protect their child. Others are less ready to tolerate this kind of exploration. For example, some mothers become defensive, insisting that their child has not been in harm's way or does not remember; others are overwhelmed by their own guilt and shame at failing to protect their child; and still others become hypervigilant and anxious. We understand from these reactions that in order to maintain the parent's psychological safety and sobriety, we need to support them in gaining some grounding skills and self-soothing strategies. In time, we work toward parents feeling that their own needs for safety and security in treatment are met, and we attempt anew to explore safety in the parent-child relationship. The clinician continues to empathize with how difficult it is be to parent in early recovery, when so much is expected.

Assistance with Problems of Daily Living Providing concrete assistance with problems of daily living and responding to crises are a part of CPP and typical throughout our work with mothers who are not being offered other case management services. Providing this type of assistance is experienced as supportive, helps to build trust, and makes space for a mother to consider other more reflective or affective needs.

Reflective Supervision We use reflective supervision as an essential part of BRIGHT. Working with strong feelings of guilt, shame, and fear, as well as balancing the needs of parents for support and possible mistakes, with the needs of infants for protection and safety, requires close examination of each case with a trusted infant mental health practitioner. Supervisors use parallel process to both model and create an environment of safety, trust, and self-exploration which match what we strive to create with parents. They model the same availability, consistency, and flexibility that we asked of clinicians and are transparent about the supervision process in order to promote exploration of relationships and feelings. Reflective supervision is a core piece of CPP that we find essential in our work with high-risk vulnerable families.

12.12 Termination

As with many clinicians who work with vulnerable populations, we find that our terminations are evenly split between those that are predictable and those that are not. When we are able to plan for a predicted termination, we see a tremendous opportunity to revisit treatment goals. We talk with mothers about the work they have done through treatment to build coherence between past and present and between a mother and child dyad with different developmental needs. We mark shared learning about children's unique developmental experiences as we reflect on the child's need for a supported "goodbye" session with the clinician. Moreover, we acknowledge what a mother has done to heal from her own difficult experiences as we talk about her wishes in a transition time. Often, BRIGHT termination coincides with terminations from other services as parents are moving, being given housing, switching level of care, or reuniting with family. We explicitly view termination as an opportunity to consider mother's and child's needs in other "goodbye" moments.

When terminations are unannounced, clinicians seek support to explore possible ways to enact a healthy "goodbye" with a family while tolerating their own sense of loss, anxiety, or confusion. Supervision is particularly detailed in this type of termination. When possible, we use mail, phone messages, texts, or notes to offer some pieces of what we might have wanted to offer in termination sessions to families who left unexpectedly. When appropriate, we acknowledge that this might be an upsetting or frightening time for the family, as when families are evicted or parents are incarcerated. We aim to send a message that people are held in mind whether they are present or not and, again, when appropriate draw parallels between holding our clients in mind and the ways the mothers, often separated from their infants for periods of time, hold their child in mind. We bring our own grief and anger to supervision to make psychological space for a new dyad without the weight of the missing family on our shoulders.

12.13 Case Example: Sarah and Olivia

Sarah was referred to Project BRIGHT when she was 5 months pregnant. At that time she indicated that everything was going well in her pregnancy and that she and her partner were very excited about the upcoming birth of their baby. She accepted

the referral from her counselor at the methadone clinic because she had questions about her developing baby, and she wanted to prepare herself for the birth and parenting.

At the time of referral, Sarah, a 30-year-old single Portuguese-American mother of two children, had recently been prescribed methadone for her opioid addiction. Her older son, age 13, was removed from her care at age 2 and adopted by his paternal grandmother. Sarah visited with him approximately every 6 months. Her middle daughter, age 6, was living with Sarah's mother and she saw her weekly.

Sarah herself was the oldest of three children. She grew up with hardworking parents who had high expectations and who she experienced as very critical. Sarah had strongly formed representations of herself in the context of her family relationships; she recalled her younger sister being the "favorite one," while Sarah could not do anything right. When the clinician explored Sarah's substance misuse, she noted that drugs helped her feel less anxious, more productive, and better able to meet her parent's high expectations, despite living a secret "double life." She knew that if or when her parents learned about her substance use, it would confirm their disappointment in her.

Yet, Sarah's parents had their own struggles. They were active alcohol users, and Sarah's father was physically and emotionally abusive toward her mother and occasionally struck Sarah as well. She recalled protecting her younger sisters from being hit and trying to shield her mother when her father became abusive. Sarah recounted her experience of sexual abuse by a paternal uncle from ages 8 to 12, and although she told her mother about the abuse, her mother did not believe her and did not take any protective action. When Sarah was 13 years old, she began to drink and smoke marijuana, progressively experimenting with various drugs to age 18 when she began using cocaine and heroin.

During the initial assessment phase of treatment, the clinician focused on the following areas: getting acquainted with Sarah and building a rapport; exploring whether Sarah was able to be reflective about her baby in utero; assessing her knowledge of newborn abstinence syndrome (NAS) and the withdrawal process, including how to recognize cues of distress and overstimulation; and holding in mind with Sarah her understandable anxiety that child welfare might place her baby into foster care. Additionally, standardized assessment measures confirmed the extent of Sarah's prior trauma, delineated symptoms of posttraumatic stress disorder including avoidance and irritability, and suggested difficulty with emotion regulation, mild depression, and anxiety.

The clinician's initial assessment of Sarah led her to decide that the following areas would be the foci of early treatment: expected development of the baby, assistance with Sarah's affect regulation, encouraging external supports, and discussion of trauma history.

(1) Expected infant development: Sarah indicated that she did not know what to expect in terms of her baby's experience of being born substance exposed and possibly going through withdrawal. She particularly wanted to understand more about how the baby might be overstimulated (common for newborns who are substance exposed) and how to soothe her baby if this occurred.

(2) Affect regulation: Given Sarah's extensive substance use history, likely indicating difficulties managing strong negative emotions, and the paucity of supportive and secure relationships in her life, the clinician wondered how Sarah coped with her own strong feelings and how she would manage her baby's negative affect.
(3) External supports: Sarah indicated limited familial support and that her baby's father was at times abusive. She was open to receiving services that could help strengthen her parenting, so the clinician referred her to a domestic violence support group and a home visitor through the Healthy Families program.
(4) Trauma history: Sarah shared her concerns regarding the physical and emotional abuse in her extended family and with her partner. She wanted to stop the cycle of abuse, but did not know how. The clinician also wondered how Sarah's early abusive experiences would impact her understanding of her child's inner world and how her own low self-esteem and ambivalence regarding relationships might affect her sense of competence and her support for her developing child. She planned to address these concerns in the clinical work with Sarah.

The clinician met with Sarah regularly during the latter part of her pregnancy. As the treatment continued and the baby's due date came closer, Sarah became increasingly anxious about what would happen when her baby was born and whether the baby would be taken into foster care. Sarah also reported sporadic experiences of interpersonal violence inflicted by her partner.

When the baby, Olivia, was born she began to show symptoms of withdrawal from opioids, so she was placed in an intensive care nursery for extra care. Sarah was allowed to visit and feed her every 3 h. During Olivia's stay in the hospital, the clinician visited her and Sarah during feeding time. She offered supportive comments such as how comfortable Sarah seemed caring for her baby. Sarah confidently swaddled Olivia and shared with the clinician a technique she had learned from the nurses of how to help Olivia suck better. While feeding Olivia she gently stroked and massaged her cheek. The clinician saw her role during this period of treatment as having three foci. First, she wanted to support Sarah in feeling confident as a mother to Olivia, which included thinking with Sarah about how the two communicated and responded to one another. Second, she wanted to recognize and bring to mind that this was a complicated yet precious time for the two of them. The mother and baby needed space to get to know one another, yet Sarah had strong feelings of shame and guilt about Olivia's withdrawal from opioids that the clinician thought might affect her emotions and interactions with the baby. Third, the clinician strove to hold in mind with and for Sarah the uncertainty of Olivia's custody and that she might not be allowed to go home with Sarah when she left the hospital.

During Olivia's 3-week stay in the nursery, Sarah visited her as often as she could while juggling various other appointments and getting back and forth to the methadone clinic and hospital on public transportation. Nevertheless, at the end of the 3 weeks in the hospital, due to Sarah's heroin use at three points during her pregnancy and the ongoing concerns about domestic violence and its impact on

Sarah, child welfare services sought custody so that Olivia would be placed in foster care when she was released from the hospital.

Sarah was devastated by the decision to place Olivia in someone else's care. In addition, she and the baby's father were arguing more frequently, and her housing situation was increasingly unstable. Sarah was considering moving into a homeless shelter. During the first few sessions after Olivia was placed in foster care, the clinician focused on Sarah's understandable sadness and anger while also supporting her with concrete needs such as food and housing. At times, therapy sessions took place in the car, when the clinician drove Sarah to the food pantry. The clinician understood that focusing on affect regulation and concrete assistance were essential to Sarah's ability to remain sober and to make space in her own mind for the needs of her daughter.

In the weeks after Olivia's placement, the clinician added to the treatment plan and concentrated on helping Sarah to hold Olivia in mind and through that process stay connected to her daughter. Together, the clinician and Sarah reflected on the weekly visits at the child welfare office between Sarah and Olivia and wondered about the baby's behavior, affect, and development. The clinician promoted Sarah's capacities for reflective function, asking Sarah questions such as what she had noticed about Olivia, what Olivia seemed to like and dislike, how Olivia responded when calmed by Sarah when she was upset, and how Sarah felt when she was with Olivia.

On a few occasions, the clinician accompanied Sarah on her visits with Olivia. During these visits, the clinician pointed out moments of pleasure between mother and baby, holding in mind the importance of shared instances of positive affect for the relationships between both mom and baby and mom and clinician. She commented on how Olivia adoringly looked at her mother, especially when Sarah was feeding her or the two of them were interacting in some pleasurable way. The clinician often asked Sarah how she thought about or understood Olivia's behavior or wondered with Sarah why Olivia responded in a certain way. This practice of observing Sarah with Olivia encouraged Sarah to ask additional questions about the changes she was noticing in Olivia's development. The technique helped to build a parental reflective stance in the mother, another goal of the treatment. Overall, the clinician hoped to foster the mother-baby relationship, support Sarah in knowing her daughter and trust in her developing knowledge, and assist her to regain custody of Olivia.

While the clinician was pointing out the strengths in Sarah and Olivia's relationship, she was also aware of building her own relationship with Sarah. Increasingly, Sarah discussed intimate details about herself and her childhood as she seemed to feel more connected and safe. In addition, she discussed everyday concerns and frustrations, such as dealing with Olivia's father, who at this point was incarcerated, or exploring deeper issues from her own childhood. Sarah wondered how her past was affecting her present, particularly with regard to how she parented Olivia and her other two children. For example, she recognized how sometimes she struggled to comfort her child when she was needy and cried. Upon reflection, she realized how her own mother had responded negatively to her when she needed reassurance and comfort.

As the time came closer for Sarah to reunify with Olivia after 1 year in foster care, the treatment shifted toward thinking about how Sarah would manage living with her daughter full-time. She discussed feeling both excited and terrified. These

mixed feelings regarding having full custody of Olivia made her feel guilty, especially given how hard she had worked to regain custody. Sarah wished she had a more supportive and happy extended family for Olivia. The clinician recognized how this deep yearning for family made Sarah susceptible to being back in contact with her partner when he was released from prison.

Following Sarah and Olivia's reunification, the clinician shifted more of the focus of the clinical work to the dyad. This included listening and wondering about each of them individually and together. Sarah often remarked on how she felt Olivia saved her life, believing that if it weren't for her daughter, she may not have made her recent life changes, particularly maintaining a sober lifestyle.

As the clinician concluded her work with Sarah and Olivia (now 14 months old), she reflected on how far Sarah had come personally and as a mother. Personally, Sarah was now separated from her partner with an active restraining order in place. She was prepared to contact the police if he attempted to violate the restraining order. From the clinician's perspective, this spoke to Sarah's growth in her ability to assess her own safety, to maintain clear boundaries, and to feel worthy of them. In terms of mothering, the clinician knew that Sarah would struggle with the normal stresses of parenthood and the realities of being a single mother in early recovery with limited income and supports. However, she also recognized how Sarah had worked to understand her early patterns of physical and sexual abuse within her family and how they had affected her self-esteem and view of relationships. Due to her history, she often viewed abusive behavior as loving, had difficulty tolerating and managing her emotions, and often did not know how to set appropriate boundaries. The clinician hoped Sarah would continue to work with an individual therapist on acknowledging her difficult emotions and acquiring a broader range of coping strategies to manage them, identifying and meeting her individual needs, and developing safe and reliable relationships.

At termination, the clinician saw many strengths between Sarah and Olivia. Despite being separated for the first year of Olivia's life, the two of them had a strong bond. Sarah was attentive and attuned to Olivia's needs. In the clinician's visits with the two of them, she witnessed much mutual joy and pleasure. Additionally, the clinician saw how Sarah made excellent use of external assistance (e.g., pediatrician, early intervention worker, and "mommy and me" play group) to better understand and support Olivia's emotional and physical needs.

Simultaneously, the clinician recognized that Olivia was on the cusp of becoming more independent; she was crawling and almost ready to walk, increasingly testing limits and fervently expressing her opinions and preferences. The clinician anticipated that Olivia's independence would present challenges for Sarah especially with regard to limit setting and the need to be an authority as a parent rather than just a nurturer. As Olivia grew and changed, developmental issues would emerge potentially triggering difficult memories for Sarah. The clinician believed that the therapeutic work done through BRIGHT along with Sarah's continued sobriety and involvement with recovery services offered a strong foundation for a loving healthy relationship that could break the cycles of trauma and substance misuse.

Conclusion

In this chapter, we briefly reviewed the research and theoretical literature on substance dependence, trauma, and parenting that provide the underpinnings for the BRIGHT attachment-based intervention. There are compelling arguments for the need to simultaneously provide an intervention focused on parenting and the parent-child relationship while a mother is involved in treatment for a SUD. We answered this need through the development of BRIGHT, relying strongly on the CPP approach to dyadic work along with best evidence-based infant mental health practices that address trauma and addiction. Our description of BRIGHT highlighted the importance of flexibility in the work given the need to shift among various domains such as supporting for the mothers' recovery, addressing trauma sequelae, encouraging optimal parenting practices, and scaffolding the parent-child dyad. The composite case example offered a close look at the flow and nuances of the intervention, demonstrating how a clinician addressed various developmental needs within one dyad. The intervention began with a pregnant woman in early recovery anticipating the birth of her child. Soon the clinician was working with a postpartum mother whose child was placed in foster care and needed to continue to maintain the hope of reunification and the reality of the relationship. Ultimately, the clinician was addressing the needs of a mother-child dyad newly reunified after being separated for 1 year. Given the increase in opioid use and SUDs and concomitant needs, along with growing research and clinical evidence regarding relational approaches to parenting interventions, we anticipate continuing to disseminate our specific work with these parents and their young children.

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13 Survivor Mom's Companion: A Population-Level Program for Pregnant Women Who Are Survivors of Childhood Maltreatment: The Need for a Public Health Approach to Addressing Unresolved Maternal Trauma

Michelle Sperlich and Julia Seng

Abstract

Childhood maltreatment trauma is a key determinant in intergenerational patterns of maltreatment and psychiatric vulnerability in the U.S. and globally. These cycles of maltreatment and vulnerability intersect during the childbearing year, when unresolved maternal trauma from maltreatment adversely affects a woman's perinatal mental health and offspring development. We can recognize unresolved maternal trauma in the form of posttraumatic stress disorder (PTSD) and symptomatology, and its complex forms or comorbidities. The childbearing year presents unique clinical realities in addressing the traumatic-stress related mental health needs of women, principally among them is the lack of available trauma-informed and PTSD-specific interventions. Consequently, we must develop and implement approaches that circumvent barriers to access and address these clinical realities. Ideal characteristics of such approaches for expanding mental health service delivery have been defined and include reach, scalability, and affordability. Approaches that have the promise of addressing the needs of survivors of childhood maltreatment and sexual trauma will also need to be positioned in trauma-informed environments, and be trauma-specific in nature. One targeted approach that is trauma-specific and which has the characteristics of being a promising novel approach to delivering perinatal mental health care is

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the Survivor Moms' Companion (SMC). The SMC is a fully manualized, self-study, and structured-listening psychoeducational program for women who are survivors of childhood maltreatment and who are pregnant ("survivor moms"). The goal of the SMC program is to improve women's obstetric, postpartum, and early parenting experiences, and enhance psychological functioning.

One in five women has a maltreatment history (Pereda et al. 2009; Stoltenborgh et al. 2011; World Health Organization 2014). The effects on the lives of women and their families, communities, and society have now been well characterized and have been portrayed in studies of mother-infant attachment, traumatic stress, neurobiology, and epigenetics. Together these provide evidence that childhood maltreatment trauma is a key determinant in intergenerational patterns of maltreatment and psychiatric vulnerability in the USA and globally. The Adverse Childhood Experiences (ACE) study demonstrated a profound "toxic stress" effect of abuse, neglect, and parental mental illness on life course health (Felitti et al. 1998). This level of population health adverse impact calls for augmenting clinical responses with frontline public health interventions that do not require diagnosis and individualized treatment.

Adversity brings significant costs. The WHO estimates that child maltreatment is responsible for almost a quarter of mental health disorders. Costs are on a par for all noncommunicable diseases (including cancer, obesity, diabetes, heart and respiratory diseases) (Sethi et al. 2013). In the USA, annual cost in relation to chronic illness is estimated at $80–$100 billion (Wang and Holton 2007; Gelles and Perlman 2012). In addition, US studies show that abused or neglected individuals have more neurodevelopmental deficits (Skowron et al. 2011), psychological and behavioral problems (Lansford et al. 2002), and involvement with child welfare services and the juvenile justice system; and, when adults, higher rates of sexual assault and domestic violence victimization (Hetzel and McCanne 2005), homelessness (Stein et al. 2002), and criminality (Widom 1989), as well as increased odds of perpetrating maltreatment or failing to protect (Thornberry and Henry 2013). Preventing maltreatment and breaking these intersecting cycles is thus a public health priority.

These cycles of maltreatment and vulnerability intersect during the childbearing year, when unresolved maternal trauma from maltreatment adversely affects both her perinatal mental health (Seng et al. 2009) and her process of becoming a mother (Mercer 2004). We can recognize unresolved maternal trauma in the form of posttraumatic stress disorder (PTSD) symptomatology and through its complex forms or comorbidities. Having a maltreatment history carries a 12-fold risk for PTSD during pregnancy (Seng et al. 2009). PTSD overall is nearly twice as high during pregnancy (7.9%) (Seng et al. 2009) as for women generally (4.6%) (Resnick et al. 1993), with sociodemographic factors including younger maternal age, being African-American, living in poverty, lower levels of educational attainment, and higher levels of exposure to crime (Seng et al. 2009) potentiating risk. Sexual trauma, including childhood sexual maltreatment, appears to be a particularly salient trigger for active PTSD during pregnancy (Wosu et al. 2015). The process of becoming a mother can also be more difficult for women from families of origin

where abuse, neglect, or impairment of the parents results in poor models to follow (Fraiberg et al. 1975). Although childhood maltreatment and sexual trauma occur at similar rates across the social gradient, women in low-resource perinatal settings experience PTSD in pregnancy at nearly fourfold higher rates (13.9 vs 2.9%) compared to more advantaged settings (Seng et al. 2008, 2009). This constitutes a health disparity that is addressable.

Attention to trauma and PTSD during pregnancy is clinically important for several reasons. First, PTSD is associated with behaviors that increase risk to mothers and babies such as substance misuse, inadequacy of engagement in prenatal care, and excessive weight gain (Morland et al. 2007). It is associated with low birth weight and shorter gestation (Seng et al. 2011a; Shaw et al. 2014; Yonkers et al. 2014), postnatal PTSD and depression, and impaired maternal-infant bonding (Seng et al. 2013; Muzik et al. 2013). Maltreatment history may also be associated with less sensitive parenting (Muzik et al. 2013, 2017), having a dysregulated infant (Feldman et al. 2009; Schore 2003), and greater risk of protective service involvement (Kim et al. 2014). Last, but certainly not least, past and current trauma are implicated in the risk for pregnancy-associated suicide and homicide, each of which accounts for more deaths than many of the obstetric complications commonly screened for in the course of routine prenatal care (Palladino et al. 2011; Romero and Pearlman 2012; Mokdad et al. 2004; Muzik et al. 2016).

Given such pervasive effects, it could be argued that trauma/toxic stress is akin to a contagion, one that we are ill-equipped to treat. To date, much of our efforts at containment are reactive rather than proactive, particularly when it comes to childhood maltreatment (Zimmerman and Mercy 2010). We have developed no immunization for this epidemic. Authors of a 2014 report for the US Substance Abuse and Mental Health Services Administration (SAMHSA) argue that "…behavioral health is the linchpin for the next era of public health" and that the science on toxic stress and trauma "…is as convincing as the germ theory was when the public hygiene movement began" (Shern et al. 2016). Our current reliance on individual psychotherapy to reactively address the effects of childhood maltreatment is one which is being called into question for a couple of important reasons. First, rates of mental health needs in general in the USA are high and cannot possibly be met using the current paradigm (Kazdin and Blase 2011). Unmet need for mental health services is widespread in the USA, representing over 7 million people and disproportionately affecting women and children and persons with low income (Roll et al. 2013). Second, there are many reasons people do not receive mental health treatment, due to issues of access and resource constraint, stigma, and cultural obstacles (Kazdin and Blase 2011). Both structural barriers (e.g., the inability to afford the cost of treatment and not knowing where to go for treatment) and attitudinal barriers (e.g., thinking one can handle the problem without treatment or that treatment would not help) have been identified among adults with mental illness and perceived unmet needs for treatment (Roll et al. 2013).

Specific to the childbearing year, there are several clinical realities that affect our ability to address the traumatic stress-related mental health needs of women. First, there are low rates of identification of depression, anxiety, and stress during the childbearing year and concurrently low rates of treatment uptake (Goodman and

Tyer-Viola 2010; Kelly et al. 2001). Second, although exposure-based cognitive-behavioral therapies have an extensive evidence base for working with post-traumatic stress disorder sequelae, there are remaining questions about their use during pregnancy, due to a dearth of data regarding use in pregnancy (Arch et al. 2012), and inconclusive findings for effectiveness for trials to date (Madigan et al. 2015). Third, due to concerns about the advisability of psychiatric medication usage in pregnancy given the possibility of teratogenic and infant withdrawal effects, many women prefer non-pharmaceutical treatments (Battle et al. 2013).

In response to these clinical realities stated above, we, as clinicians, are tasked to develop approaches that have promise to circumvent barriers to access, feasibility, and acceptance. Kazdin and Blase suggest that we need "a portfolio of models" with "overlapping reach that can cover the swath of individuals in need of services," which might include web- and phone-based interventions, providing treatment in everyday settings, using nontraditional providers, promoting self-help approaches, and use of media to communicate prevention and intervention messages (Kazdin and Blase 2011).

13.1 Ideal Characteristics of Novel Approaches to Meet This Large-Scale Need

A subset of characteristics has been suggested by Kazdin and Rabbitt as essential components for novel approaches that have promise for expanding models of service delivery and addressing the mismatches and gaps between need and provision of mental health care (Kazdin and Rabbitt 2013). These include *reach*, *scalability*, *affordability*, *expansion of nonprofessional workforce*, *expansion of settings where services are provided*, and *flexibility and feasibility of intervention delivery* (Kazdin and Rabbitt 2013). *Reach* refers to the capacity to reach people who have not been typically reached by traditional service delivery methods; *scalability* refers to the capacity for a model to be applied on a large scale; and *affordability* means that the cost of the model is comparatively low to usual models of care. Other essential components for novel approaches *include expansion of the nonprofessional workforce* to increase the number of providers who can offer interventions and *expansion of settings where services are provided* to bring interventions to locales and everyday settings where people are likely to participate or attend already. Lastly, *feasibility* and *flexibility* are necessary components for ensuring that interventions can be implemented and adapted to a variety of conditions and for diverse groups.

Kazdin and Rabbitt's list of characteristics (Kazdin and Rabbitt 2013) is well aligned with the focus in population health interventions, where the emphasis is on "the health outcomes of a group of individuals, including the distribution of such outcomes within the group," also stated as aiming to improve health and health equity at the population level (Kindig and Stoddart 2003). Directing population-level health initiatives toward childbearing women is practical due to the frequency of antenatal and postnatal visits, which provide multiple opportunities for clinical contacts. Midwives and other perinatal team members have capacity to provide integrated frontline interventions. Pregnancy is an ideal time to focus on addressing trauma and toxic stress because there is the potential for primary prevention as well

as improving lifespan maternal and infant outcomes. Public health resources already are strongly geared toward redressing inequity in perinatal outcomes for vulnerable populations, and the idea of universal and targeted services being balanced to optimize outcomes is already well established. Examples of public health initiatives in obstetrical care, for instance, include recommendation of folic acid supplementation to prevent neural tube defects (Williams et al. 2015) and the *Back to Sleep* campaign to prevent sudden infant death syndrome (Trachtenberg et al. 2012). A meta-analysis of 36 separate systematic reviews of public health interventions suggests that there is a wide variety of such interventions that could be readily conducted by midwives (McNeill et al. 2012).

Many interventions that align with a public health approach and also the Kazdin and Rabbitt recommendations (Kazdin and Rabbitt 2013) for optimal characteristics for novel psychotherapeutic approaches are psychoeducational in nature. Psychoeducation has been defined as the provision of information, together with skill building, and emotional support, and is a fairly widespread mental health-care strategy (Lukens and McFarlane 2004; Mechanic 2002). Psychoeducation is one of the most effective of evidence-based practices for both clinical trials and community settings (Lukens and McFarlane 2004). Psychoeducation is an excellent way to promote *mental health literacy* (knowledge and beliefs about mental health) (Jorm 2012) and has been identified as a key facilitator to formal help seeking among young adults (Taylor-Rodgers and Batterham 2014).

13.2 Need for a Targeted Trauma- and PTSD-Specific Intervention for Maternity Care

Approaches that have the promise of addressing the needs of survivors of childhood maltreatment and sexual trauma will also need to be positioned in *trauma-informed* environments and be *trauma-specific* in nature. The SAMHSA's National Center for Trauma-Informed Care (NCTIC) defines a trauma-informed environment as one that *realizes* the widespread impact of trauma, *recognizes* the signs and symptoms of trauma, *responds* by fully integrating knowledge about trauma at all levels, and seeks to actively resist *re-traumatization* (National Center for Trauma-Informed Care an Alternatives to Seclusion and Restraint (NCTIC) 2015a). Being trauma informed is not a "treatment" per se, but rather a set of guiding principles that can be used across multiple settings. Trauma-specific interventions differ in that they are "interventions or treatments designed specifically to address the consequences of trauma and to facilitate healing;" many such interventions are described on the NCTIC website (NCTIC 2015b).

The process of translating trauma-informed care into perinatal settings is beginning (Seng and Taylor 2015), and having a trauma-specific intervention widely available would be a useful catalyst for moving forward. Lack of broad availability of manualized interventions with published efficacy or effectiveness studies represents an important barrier to assessing for trauma in perinatal settings. Health-care workers who are providing pregnancy care are reluctant to ask

about trauma exposure if there are not readily available corresponding resources to offer women. Furthermore, women are understandably reluctant to disclose their history of traumatic exposure if they perceive that the environment does not stand ready to provide such resources (Seng et al. 2008). Unfortunately, this means that the needs of women with abuse-related traumatic sequelae frequently are not coming to the attention of maternity care providers (Seng et al. 2008). In the absence of trauma-informed care, the predominant collective focus has been on depression, which overlaps with PTSD but does not capture all the manifestations of trauma-related disorders, and which is often addressed as an endogenous rather than a trauma-related disorder. Furthermore, due to the absence of attention to trauma and PTSD in pregnancy, we as clinicians are only just beginning to measure and understand the impact of pregnancy PTSD on perinatal outcomes and population health.

At this time perinatal professions are beginning to renew their focus on psychosocial needs among pregnant women (Renfrew et al. 2014; National Institute for Health and Care Excellence 2014), and pediatric professionals are strongly focusing on preventing and redressing traumatic and toxic stress among young children. The rest of this chapter focuses on one trauma-specific psychoeducational intervention for women during pregnancy.

13.3 Description of the *Survivor Moms' Companion* and Its Beginning Evidence Base

One targeted intervention that is trauma specific and which has the characteristics of being a novel and promising approach to delivering perinatal mental health care is the *Survivor Moms' Companion* (*SMC*). The SMC is a pregnancy intervention that fills a frontline services gap in perinatal health by addressing maltreatment-related traumatic stress sequelae and maternal role development needs in tandem. The SMC is a fully manualized, self-study and structured-listening psychoeducational program for women who are survivors of childhood maltreatment and who are pregnant (survivor moms). The SMC possesses the ideal characteristics outlined by Kazdin and Rabbitt (2013) as being recommended for novel approaches to provision of mental health care. It was designed to be offered via primary healthcare settings by nurses, social workers, or potentially outreach workers as a means for addressing the needs of pregnant women who have experienced sexual trauma and who may be experiencing symptoms of post-traumatic stress disorder; in this way, there is potential to *reach* the target population and *expand the nonprofessional workforce*. The intervention can be delivered via in-person or telephone sessions and could articulate well with home-visiting programs; in this way it has the potential to *expand the types of settings where services are provided*. The SMC's frontline approach is congruent with the concept of an integrated primary mental health-care (IPMHC) model (Cheng 2000); embedding the intervention in the context of integrated care carries with it the possibility of *scalability*. It is

affordable in comparison with usual specialty care for mental health treatment. The intervention is designed to broadly meet the needs of women with abuse history, whether or not they meet any formal diagnostic criteria for a mental disorder, yet, consistent with the IPMHC model, also provides case finding and treatment engagement for the estimated 10–15% of women who might also benefit from referral for treatment with one-on-one psychotherapy and/or psychiatric medication. In this way, the SMC is *flexible*, and pilot testing shows that it is *feasible* to deliver in low-resource settings (Sperlich et al. 2011).

The SMC's psychoeducation content is informed by the developers' clinical experiences as midwives working with women who have survived sexual abuse and is responsive to several issues raised by women through extensive qualitative research on the part of the developers (Seng et al. 2002; Sperlich and Seng 2008). Women shared that they struggled with being "triggered" into intrusive re-experiencing of trauma during pregnancy, including during medical procedures and labor. They shared that they often used dissociative coping or experienced emotion dysregulation, often in the form of anger and hopelessness. Many women shared their interpersonal struggles in the context of their maternity care relationships—they reported being slow to trust, fast to anger, and easily re-traumatized by aspects of the maternity care experience. These themes from the early studies underpinning the SMC were affirmed in a recent meta-synthesis (Montgomery 2013). The format was also based on this intervention development research (Seng et al. 2002; Sperlich and Seng 2008). Women desired a safe relationship with a consistent person but generally were not willing to use psychotherapy. They wanted help to develop social support outside their family, flexibility in addressing past trauma versus staying present focused, and choices about disclosing details of their history versus speaking in generalities. Many expressed a desire for their trauma-related concerns to be addressed in the context of their maternity care. Importantly, many women *had no words* for what they were experiencing. Taken together, this suggested that a present-focused, psychoeducational intervention would be acceptable, especially if there was an option to practice skills in vitro with avatars in lieu of personalizing the skills practice to their in vivo situation. The role women seemed to prefer was that of a "tutor" who helped with learning and skills practice rather than a therapist whose focus would be to help with treating clinical distress and impairment. The SMC is a ten-module self-study program designed to be completed during pregnancy. Rather than being diagnosis based, it is population based, meaning that women with a history of childhood maltreatment or sexual trauma who do not meet criteria for PTSD diagnosis may self-refer to the program. Women can also be referred to the program through their maternity care provider. The SMC has the standard features of other psychoeducation in that it focuses on information giving, skills training, and addressing emotional support needs. The woman reads the weekly self-study modules, which begin with an orienting set of questions, learning objectives, and written information on various topics related to trauma, PTSD, and childbearing. Skills building takes the form of problem-solving in relation to vignettes of other women's experiences who have survived abuse, based on

characters created for the program who typify various issues related to traumatic sequelae, including PTSD symptomatology. There are questions that allow the woman to personalize the skills practice to her own situation if she so chooses. Each module ends with questions designed to help the woman structure the focus of her subsequent interactions with her assigned SMC "tutor."

After she has completed each self-study module, the woman engages in a 30-min session with a SMC-trained tutor, either in-person or by phone. In the pilot phase of the SMC, tutors were licensed social workers; in future implementation the tutoring role might also be filled by perinatal nurses, doulas, or health educators who have undergone manualized training. The interactions during these sessions are patterned on teacher-student rather than therapist-client roles. In sessions, the tutor's role is to reinforce the woman's learning and help facilitate her skills practice while, at the same time, monitoring the woman's sense of well-being, for her overall pregnancy health and level of post-traumatic stress disorder symptomatology. Through this safety monitoring, tutors identify women who may be more severely impaired or dysregulated and in such cases provide a referral pathway to specialty care when requested or when indicated.

The goal of the SMC program is to improve women's obstetric, postpartum, and early parenting experiences and enhance psychological functioning. There are three targeted mechanisms of change. The first mechanism is *affect dysregulation*, which can be characterized by either emotional numbing (having a diminished intensity of sensations and emotions, low emotion awareness and mood) or by irritability (having the low anger threshold associated with autonomic hyperarousal). The second mechanism is *interpersonal reactivity*, which may involve having difficulties interpreting other people's intentions and which may lead to heightened offense from negative attribution, low trust, low self-esteem, problems with boundary setting, and fears of intimacy. The third mechanism is *management of PTSD symptoms* despite the provocation of physical and psychological triggers and heightened dependency on others during pregnancy.

The content of the modules provides situation-specific skills practice to support women's maternity care experiences and presage and promote positive mother-infant interactions. The first four modules constitute the core information of the program, including providing an overview of how trauma and PTSD symptoms can affect childbearing and early parenting (module 1), teaching *reaction skills* to manage PTSD symptoms after being triggered (module 2), teaching *soothing skills* to improve affect dysregulation (module 3), and teaching *interpreting skills* to reduce interpersonal reactivity (module 4). Modules 5–10 reinforce these core skills and provide additional vignette-based practice on a variety of relevant perinatal topics.

An example of the vignette-based practice is the story of "Serena" in Module 2, which is the module specifically focusing on teaching *soothing skills* to improve affect dysregulation. After preparatory provision of information regarding posttraumatic reactions and how these relate to affect dysregulation, the SMC participant is invited to problem-solve and react to Serena's situation:

At 34 weeks of pregnancy, Serena went to a maternity care visit. As part of her care, Serena needed a vaginal swab taken to screen for bacteria that can harm her baby when it is coming through the birth canal.

Serena was worried about this. When she was instructed to undress from the waist down and put on a gown, she started to feel frightened, even though she knew this was a normal routine health care situation and nothing to be afraid of. When she was waiting for the doctor to come in, the feelings got more and more intense.

When Dr. Mark and the clinical assistant entered the room and said hello, she practically jumped, she felt so on edge. As Dr. Mark put on his gloves, he made small talk with Serena. Serena was unable to really hear what Dr. Mark was saying; Serena started to mentally "go away" and didn't really know what she was saying with her small talk. Dr. Mark began to explain that he was going to take a swab from her vagina and that he needed Serena to relax and open her legs. Serena could not relax and found it very difficult to do this. Dr. Mark began the procedure, and Serena began to back away and could not relax at all. The assistant tried to calm her, but Serena's panic just got worse. Dr. Mark realized Serena's distress and stopped.

Serena heard herself saying over and over, "I'm sorry. I'm really sorry." But she felt "out of it" and stressed. Dr. Mark said, "Never mind, we will just treat you with antibiotics in labor." He then left the room after saying he would see her again in 2 weeks at her next visit. The assistant was kind, but Serena felt that she just had to get out of there.

Serena left the clinic without making the follow-up appointment with Dr. Mark. Even though she had gone the last few days without smoking a cigarette, she smoked two of them on the way home. Serena could not stop feeling shame. For the rest of the day, she felt she wished the earth would swallow her. Serena felt as though she *never* wanted to see that doctor again. Because she could not get through an exam, she did not know how she could get through labor. When Ray fell asleep, she went into the garden and smoked a couple more cigarettes.

The participant reads Serena's story and is invited to try to make sense of Serena's traumatic reaction in light of what they have read about PTSD and to brainstorm options for Serena for calming herself in more adaptive ways than those evident in the vignette. Participants are then invited to consider whether they have also personally experienced similar reactions and to identify any needs they might have for improving their own "soothing" skills. The story of the character of Serena (and other characters) is progressed throughout the intervention, providing opportunity for future scenarios to explore other relevant topics, and for the characters to evolve in terms of positive growth and change. Participants and tutors then discuss the module, the vignette(s), and the personal reactions the participant might have had at the weekly tutoring session.

Pilot testing of the SMC with 32 women enrolled prior to 28 weeks of gestation showed that the program was feasible to implement in low-resource settings, was safely administered in light of repeated PTSD symptom score measurement, and was acceptable to the women who used the program (National Center for Trauma-Informed Care an Alternatives to Seclusion and Restraint (NCTIC) 2015b). Parallel process measures indicated a high level of fidelity to the manual and showed that the learning objectives were able to be achieved within the framework of the 30-min tutoring sessions. Intention-to-treat analyses showed improvements on anger expression, interpersonal reactivity, and PTSD symptom management despite the presence of triggers (Seng et al. 2011b). Further testing of the intervention to date includes a quasi-experimental study comparing 17 women from the open pilot with 43 women matched from a large prospective observational study of PTSD in pregnancy known as the STACY project (NIH/NINR008767; Seng PI) (Seng et al. 2009). Women who enrolled in the SMC had a worse baseline profile than women in the STACY (observation-only) comparison group, suggesting that the SMC's reach is on target because it appeals to the most clinically affected women. These SMC participants had a higher number of trauma exposures and worse baseline dissociation and interpersonal sensitivity scores. Despite their more severely affected status at baseline, participants in the SMC intervention showed better scores on outcome measurements of dissociation in labor, rating of labor experience, perception of care during labor, postpartum PTSD symptoms, postpartum depression symptoms, and mother-infant bonding (Rowe et al. 2014). Estimated effect sizes were larger for the outcomes related to pregnancy and birth, and smaller for the more distal postpartum outcomes, suggesting the need for continued psychoeducation into the postpartum period. As a result, a parallel version of the SMC for the postpartum period has been developed and is currently in pilot testing.

Evaluation of the SMC suggested that it filled an important need and was strongly valued. In the qualitative component of the evaluation, women shared comments such as:

> It helped me out knowing I wasn't the only one out there, that I wasn't alone. You just don't want to talk about it (…).

> It's been very helpful to me because now I know what posttraumatic stress is and why I worry about stuff that has happened to me (…).

> It allowed me to talk to different people about it. It allowed me to feel safe giving birth.

> This could go BIG.

The urgent need for trauma-specific perinatal offerings is driving multiple developments. An audio-play MP3 version, Spanish translation, and a systematic process for cultural tailoring are in development. The SMC has been licensed to the Sidran Traumatic Stress Institute, a nonprofit organization that will disseminate the SMC

to a range of types of perinatal service organizations and facilitate hybrid effectiveness implementation science projects (Curran et al. 2012).

13.4 The "Portfolio of Models"

No one type of intervention will suit the needs of the one out of five women with maltreatment histories and traumatic sequelae as they enter the childbearing year. Having an array of articulating options in a trauma-informed and tiered system of care would be ideal (Cuthbert 2015). In the near future, we hope and expect that existing trauma-specific interventions will "take off" further and that additional trauma-specific interventions will emerge in formats that will address a broader range of survivors needs, including interventions created by doulas, lactation consultants, and peers who have become experienced "survivor moms." We likely also will see continued evolution of perinatal intervention in terms of more technological adaptations, cultural and language adaptations, and more attention to the needs of fathers who are also survivors of childhood maltreatment, together with more trauma-specific support for other populations with additional types of trauma exposures, including refugees and veteran women.

Conclusion

There is a need for a continuum of care to support trauma survivors during their childbearing year. The SMC has promise for occupying a frontline space in this continuum. While it is early in the effort to develop an evidence base for the SMC, it appears to align favorably with the characteristics of *reach*, *scalability*, *affordability*, *expansion of nonprofessional workforce*, *expansion of intervention delivery settings*, and *flexibility and feasibility of delivery*. It shows promise for meeting the goals of improving health and health equity at the population level by targeting the needs of underserved women. It articulates well with standard prenatal care and with universal services like home-visiting programs designed to support pregnant women who are young or vulnerable due to having low-income or low social support. Importantly, the SMC seeks to address childhood maltreatment post-traumatic stress disorder sequelae and maternal role development in tandem, which could benefit population health via improvements in maternal mental health, reductions in mothers' stress load during pregnancy, prevention of poor fetal and infant outcomes, and ultimately, prevention of passing negative outcomes across generations. The SMC adds to the suite of treatment and support options that aim to address the needs of women who have experienced childhood maltreatment and sexual trauma during their childbearing year. Having readily available interventions like the SMC as part of usual care could overcome significant barriers to facilitation of disclosures of past trauma and treatment engagement and expand the portfolio of models to meet the needs of mother-baby dyads during their critical window of development.

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Military Moms: Deployment and Reintegration Challenges to Motherhood

14

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Abstract

With women representing an increasing proportion of the U.S. military, and approximately 40% of women who serve in the U.S. military being parents, "military mothers" are a steadily growing population. Military mothers face prolonged separations from their children due to deployment, and experience significant stress before, during, and after deployment. This chapter explores mothers' experiences of parenting across the deployment cycle. While many military mothers demonstrate remarkable resilience and coping abilities, all mothers returning home from deployment confront normative challenges including the reestablishment of relationships, roles, and routines, and for some, these challenges are compounded by PTSD symptoms and other psychological impacts. Much is yet unknown regarding the distinct experiences and support needs of military mothers and their families as they negotiate separations and reunions, and better understanding is necessary to inform services that are responsive to their specific needs.

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14.1 Introduction

Women represent an increasing proportion of the US military population (15.1% of active duty personnel and 18.8% of Reserve and Guard personnel; Department of Defense 2014) and have served on the front lines throughout the wars in Afghanistan and Iraq. Over half of more than two million American troops that have been deployed to Iraq and Afghanistan since 2001 have been deployed more than once (Institute of Medicine 2013). Approximately 40% of servicewomen have children, and thus as servicewomen have cycled through deployments, many have endured the stress of long separations from their children (Gewirtz et al. 2014; Mulhall 2009). Deployment-related separation is difficult for any deployed parent but may pose distinct challenges for military moms, who tend to be younger and from a lower economic status than their male counterparts and more likely to be primary caregivers and single parents (Boyd et al. 2013; DeVoe and Ross 2012; Mulhall 2009).

Beginning in 1948 with the Armed Services Integration Act in which women were limited to peacetime service, to the present day in which all combat roles are open to women in the military, the presence of women service members has greatly expanded. While women service members have generally tended to serve in administrative and medical positions (Boyd et al. 2013), an increasing number of women soldiers are serving in combat positions (Berz et al. 2008; Street et al. 2009). In 2012, the Secretary of Defense Leon Panetta and Chairman of the Joint Chiefs of Staff General Martin Dempsey amended the Direct Ground Combat Definition and Assignment Rule, allowing women to serve in military roles previously closed to them. Until 1976, servicewomen were automatically discharged from the military upon becoming pregnant (Vuic 2010). In 2016, Secretary of Defense Ash Carter announced a plan to make the US military more family friendly, including doubling paid maternity leave to 12 weeks, extending daycare hours on military installations, and increasing support for breastfeeding. The increasing number of women service members and veterans has led researchers to consider how occupational stressors, job demands, financial strain, and the length and timing of deployment cycles influence women's health outcomes (Pierce et al. 2011). On the whole, however, women service members and veterans remain an understudied population (National Center for Veterans Analysis and Statistics 2014).

Academic scholarship is paying increasing attention to military families, but most research addressing family impacts of deployment has focused on paternal, rather than maternal, deployment. Little is known regarding the short-term and long-term impact of service in the wars in Iraq and Afghanistan on mothers who deploy and their families (Agazio et al. 2013; Pierce et al. 2011). This chapter will examine mothering across the "deployment cycle," considering what is known about mothering in the pre-deployment period (from receiving orders to deploy through departure), during deployment, and post-deployment as mothers and their families are reunited and readjusted.

14.2 Mothering in the Pre-deployment Period

During the pre-deployment period, service members and their families prepare for the changes ahead. It is typical to have several months' notice prior to departure, but this is not always the case, and shorter notice may cause increased stress, as time for preparation is limited. This is a stressful time, as service members and their families anticipate and grieve their impending separation. This period is especially stressful for military moms, who must work to ensure the needs of their families will be met while they are gone, even as they grieve for all they will miss while separated. Reporting results of focus groups with mothers of young children who had deployed to Iraq or Afghanistan, Walsh (2017) described mothers' awareness that the burden on family and household functioning is greater when the parent who is more typically the primary caregiver leaves for deployment.

> Most [fathers] aren't in that situation [of being primary caregiver], so when they leave they're leaving the home and the family in the extra care of the person that's already doing it… Whereas I was a mom, right. …I work full-time so I'm used to being out of the house a lot, but that sort of doesn't seem to matter, I'm still the mom. So for me to be just gone, like how do you manage.

Mothers described using the period of time available between receiving orders to deploy and deploying to put as many plans as possible in place for their families and the stress of recognizing that they could not possibly plan for every contingency and that, during deployment, they would not be able to support their children day to day in the ways that they were accustomed to (Walsh 2017). They described the pain of preparing their children as well as themselves for physical separation, trying to figure out how to sustain emotional connections across distance, and confronting their own and their children's fear that they might not return. Deploying mothers and their family members may feel "on edge" during this time and may begin to withdraw physically or emotionally in anticipation of separation (Agazio et al. 2013).

The challenge of planning and preparing for deployment is particularly acute for single mothers and mothers of very young children. Upward of 30,000 single mothers have deployed to Iraq and Afghanistan (Mulhall 2009), while the largest percentage of the nearly two million children in US military families is between birth and 5 years of age (37.4%; Department of Defense 2014). Little is yet known about the impact of deployment on parenting and parent-child relationships in military families with very young children (Lieberman and Van Horn 2013) or in single-mother families. During the pre-deployment period, single mothers make care plans for their child(ren) in their absence. Deploying mothers of very young children often have to work out extensive childcare arrangements, may need to abruptly terminate breastfeeding, and may grieve for the developmental milestones they will miss while they are away and struggle with how to support a child who, by virtue of age, cannot directly communicate their needs surrounding deployment.

Based on their review of the literature, Segal et al. (2016) report that childcare and family welfare pose the greatest challenges for families across the deployment cycle, especially dual-military and single-parent families. Single mothers tend to experience higher levels of anxiety and stress about childcare arrangements and family welfare than married women who rely on their husbands during deployment (Segal et al. 2016). While there are military programs to aid military women with behavioral health, unit support, and operational deployment deferment policies, the stigma and lack of confidentiality associated with seeking such services tend to deter military women from seeking such services (Segal et al. 2016).

Many mothers turn to informal sources of support, including family and friends. A strong support network facilitates individual and family well-being across the transitions demanded by deployment, while the absence of support incurs difficulty and distress. The need for support begins immediately, as mothers must simultaneously make preparations on the home front and take part in deployment preparations with their unit. Pre-deployment training itself may require extended time away from home.

Beginning in the pre-deployment period and extending across the deployment cycle, military moms report experiencing stigma, manifest in the form of comments and questions from acquaintances, friends, colleagues, and even helping professionals, such as "I could never leave my child like that" or "how can you bear to be away for so long?" (Agazio et al. 2013; Walsh 2017). These types of statements communicate judgment and disapproval and exacerbate distress at a time when mothers are in need of support. Military moms recognize a double standard in how they are treated, as compared to their male counterparts, and this injustice, particularly when imparted by those to whom mothers have turned for support, may be experienced as aggravating as well as hurtful.

Asking for and accepting offers of help are essential elements of the pre-deployment period, as military moms come to terms with the reality that they will not be able to fill the role they previously filled in the life of their family. For some, relinquishing control is difficult (Agazio et al. 2013; Walsh 2017). Identifying caring and reliable people to fill in where needed and ensure children's needs are met is a primary concern prior to deployment, and moms describe feeling more ready for deployment when they are assured that there are those who will "step up and help out" while they are away (Agazio et al. 2013, p. 256).

14.3 Mothering During Deployment

During the wars in Afghanistan and Iraq, combat tours have been longer and more frequent than in previous wars. Typical length of deployment and post-birth deferment policy range across branches of service, with the army having the longest tours of duty (12 months) and granting 4 months' stay to new mothers (Mulhall 2009). When deployment occurs as early as 4 months post birth, women have little time to bond with and breastfeed their babies before being separated. Reflective of the challenges of balancing work and motherhood in a military context, Department of

Defense surveys have found that servicewomen frequently identify "the amount of time separated from family" as the primary reason for leaving the military prior to retirement (Mulhall 2009). The "Forces of the Future" plan introduced by Secretary of Defense Carter in 2016 to enhance work-life balance in the military was motivated at least in part by difficulty recruiting and retaining military women who are or hope to become mothers.

Immediately after deploying, mothers may grapple with feelings of sadness and guilt regarding separation from their family. At the same time, they may experience relief that the difficult and tense period of preparing to deploy has passed, or relief that in the context of deployment, their usual need to continuously juggle the competing demands of work and home is replaced by an opportunity for mission-driven focus (Agazio et al. 2013; Walsh 2017). Typically, after the first month of deployment is complete, the emotional disorganization experienced initially is replaced by a sense of stability as the deployed mother (and her family at home) adjusts to separation.

Regular communication with children at home is central to mothers' own feelings of stability, and efforts create stability for their children (Agazio et al. 2013; Walsh 2017). Strategies to maintain as much contact as possible include calling home via Skype or FaceTime, recording videos for their children, and exchanging messages, photos, and videos by email. Efforts to stay connected can be disappointing, frustrating, or even upsetting when children are not able or willing to engage, when eagerly anticipated calls or emails are disrupted or fail to occur, or when a mother learns of difficulties at home and is unable to intervene from a distance (Walsh 2017). These are particular challenges for mothers of very young children, who must rely on other adults to facilitate contact with their children. Despite these risks, deployed mothers generally seek and deeply value opportunities to maintain contact as continuously as possible with their children and recognize this contact as smoothing their own and their children's experiences of both deployment and reintegration. As one military mom described to Walsh (2017):

> I had Wi-Fi in my room and I could Skype my son almost every day. To just be able to see him every day and to know that he still knew who I was; and when the phone rang even before the connection, you know would work and he could see my face he'd say, mommy, every time the phone rang. So just knowing that your child hasn't forgotten who you are and having the technology to do the FaceTime and the, you know the constant contact, that was huge for me.

Both family- and deployment-related experiences, including family adjustment and combat exposure, vary widely among military moms, as do responses to those experiences. Consistent with the manifold challenges experienced across the deployment cycle, service members (and other family members) are at risk for increased distress and emotional symptoms, both during and after deployment. Deployed mothers face some heightened risks as compared to their male counterparts. "…family separations are stressful and a perceived loss or decrease in intimate relationships is associated with an increased risk of PTSD in women, but not in men" (Boyd et al. 2013, p. 16). Deployed women are three times more likely than male service members to get divorced (Boyd et al. 2013). Under 1% of male

and almost 15% of female veterans of the wars in Iraq and Afghanistan seeking care at the VA screen positive for military sexual trauma (MST), a term the VA uses to encompass sexual harassment and assault (Mulhall 2009). Stressors such as these compound the normative challenges of combat deployment and family separation.

During deployment, mothers may experience a wide range of emotions, from closeness to their unit, excitement about and pride in their work, to worry about the well-being of their families at home, sadness and guilt stemming from keen awareness of the time and milestones with their children and partners that they are missing. Children too may experience a wide range of emotions and experience psychological and physiological stress across the deployment cycle (Creech et al. 2014; DeVoe and Ross 2012). Deployed mothers may feel powerless to help their children to adjust to their absence and in general receive less social support than their male peers (Gewirtz et al. 2014; Tsai et al. 2014; Wang et al. 2015). The availability of social support, and assurance that children are being well cared for, allows mothers to feel secure. Mothers receive such support and assurance to varying degrees during deployment, yet many military moms exhibit exceptional resilience and coping skills in the face of multiple and diverse challenges associated with deployment.

14.4 Mothering Post-deployment

Reunification is often eagerly anticipated and joyful yet also places significant stress on families. Mothers in a study conducted by Agazio et al. (2013) reported that reunification triggered fears that young children would not recognize them or that relationships would be altered. Further, upon returning home, mothers in the study reported nightmares, feeling disassociated from family and work, sadness, and quick to anger. In another study, returning moms described experiencing the gamut of emotions (Walsh 2017). Mothers described a complicated and dynamic mix of overwhelming love and deep joy, guilt for having been gone so long, frustration at the pace or difficulty of reestablishing roles and relationships, surprise and anxiety about changes that have occurred, and guilt over personal needs for time and space so soon after getting home (Walsh 2017). At the same time that mothers are making their own adjustment, their children and families require support for their individual and collective processes of adjustment.

Normative challenges upon reunification include the reestablishment of relationships, roles, and routines, and these challenges may be compounded in the context of a service-related physical injury or psychological distress for the service member or mental health problems experienced by family members. It is estimated that 25–40% of service members returning from Afghanistan and Iraq experience symptoms that suggest a need for mental health treatment (Milliken et al. 2007; Seal et al. 2007, 2009). Conditions such as depression, pain, and post-traumatic stress disorder (PTSD) are common among women veterans (Haskell et al. 2012; Seal et al. 2009), and these and other conditions that commonly affect returning troops (substance

misuse, mild traumatic brain injury) can interfere with effective and sensitive parenting. Studies have found increased internalizing (Flake et al. 2009) and externalizing (Chartrand et al. 2008) behaviors among children of deployed parents, while rates of mental health problems among military spouses are nearly as high as those among service members themselves (Eaton et al. 2008; Renshaw et al. 2005). Given the centrality of the caregiving environment for early child development, the impact of deployment on young children is heavily influenced by parental stress and corresponding sensitivity to child needs (Alink et al. 2009; De Wolff and van IJzendoorn 1997; Hirsh-Pasek and Burchinal 2006; Hoffman et al. 2006; Lincoln et al. 2008). However, very little is yet known about the influence of military deployment and PTSD symptoms associated with combat exposure on parenting and relationship processes in infants, toddlers, and young children (Lieberman and Van Horn 2013).

Because military moms may experience less social support and are less likely than military dads to have a spouse to rely upon during and after deployment, the transition home may be particularly stressful. When deployment supports evaporate immediately upon returning home, the process of reintegrating, including reconnecting with children, is especially challenging. As one military mom related in a focus group with Walsh (2017):

> There was not a lot of overlap with the transition. It was very much, "Here's your son back. Bye."

Mothers who experienced less or no transitional support during the immediate reintegration period from those who had stepped in as primary caregivers in their absence reported the most difficulty in rebuilding relationships and adjusting their expectations to children's growth in their absence.

The challenge of adapting expectations and behavior in response to a child's maturation is particularly acute for mothers of very young children because child development during the first years of life is marked by a rapid progression of physical and cognitive changes. Reunification requires reestablishing connections with a child who has undergone significant developmental transitions and who, by nature of age, may not communicate directly, may exhibit challenging behaviors, and yet is dependent on parents for meeting emotional needs. In the words of one military mom returned from deployment (Walsh 2017):

> After knowing my infant, it was frustrating trying to deal with a toddler without knowing their signs. … That was probably the biggest struggle, was just trying to get to know this little person and understand him and what he needed.

The "post-deployment" period encompasses stages that characterize the short term and the longer term. Immediately upon returning home, couples and families may experience a honeymoon period. During and beyond this period of delight in reunion, many aspects of the service member's reintegration into the family require adjustment and renegotiation. The experience of deployment has changed individual family members, relationships, and routines, and families must figure out how to restore relationships and establish a "new normal" that is responsive to changes

that have occurred. A spouse may have gotten used to assuming certain roles and responsibilities during deployment and "who does what" needs to be figured out anew. Even when this process goes smoothly, it can be stressful. Eventually, a deeper level of reintegration and stabilization is achieved, but difficulty related to enduring impacts of deployment may be maintained over an extended period. Some mothers describe sustained awareness and a need to live with "the disconnect" between the child and parent-child relationship as they were before and after deployment and continue to grieve the time with their children that they will not get back (Walsh 2017). In some instances, difficulties emerge months or even years later, when mothers realize that their children continue to worry that they could leave again at any time or when a mother experiences milestones with one child that she missed with another due to deployment and grieves the loss anew.

Extended family and community support is often more available during the deployment, and too often families struggle alone with the transitions associated with reunification. Military moms may face particular challenges in identifying and accessing individual and family support. Across the deployment cycle, military moms observe a lack of resources appropriate to their needs, noting that many programs for families tend to presume a family structure wherein men deploy and women, wives of service members, are at-home parents (Walsh 2017). When it comes to individual physical and mental health, the VA has made strides in recent years but is still perceived by many women veterans as unable to provide care that is responsive to their particular needs. Pregnancy following deployment has been noted as a particularly challenging time for female veterans receiving care at the VA. While women veterans may remain in the VA system for concomitant physical and mental health problems, they frequently receive prenatal care from non-VA providers thus the potential for difficulty in coordinating care between non-VA and VA providers (Mattocks et al. 2012).

Military moms who serve as National Guard and Reserve Component troops face added challenges in locating support for themselves and their families. Due to geographic dispersion, they may experience greater isolation and reduced access to services. They and their families have reduced access to military family supports, may be isolated from the families of other members in the unit, and may be at heightened risk for mental health and adjustment issues (Chandra et al. 2008, 2010; US Mental Health Advisory Team 6 2009).

14.5 Discussion

Deployment places great stress on military moms and their families, with distinct stresses characterizing the pre-deployment, deployment, and post-deployment periods. A strong support system can ease the strain, while additional stressors compound it. Among US troops returning from service in Iraq and Afghanistan, reports of trauma and clinically significant levels of traumatic stress are high. Trying to manage trauma symptoms poses a particularly complex challenge for a service member simultaneously seeking to reengage in day-to-day parenting.

Little research has been done on the experiences of military moms returning from deployment and the impact of trauma on their reintegration. Research with military dads suggests that while a child's unhappiness or misbehavior is universally difficult for parents, the trauma symptoms of soldiers may compound the difficulty of tolerating a child's distress, upset, or demandingness (Walsh et al. 2014). In one study, fathers frequently described a reliance on their parenting partner (wife, girlfriend) to help them manage their trauma symptoms and parent more effectively (Dayton et al. 2014). Like deployed dads, deployed moms return home profoundly aware of having missed a period of their child's development and recognize that, while they and their families are readjusting to being together, they are at a disadvantage with respect to how to understand and respond effectively to their child's emotions and behaviors. The military advises returning parents to allow time for adjustment and reintegrate gradually, but in the absence of a spouse or other adult who will continue to be present in the home, military moms may lack the necessary support to do so.

Even when a spouse or other person who has been serving as primary caregiver remains present after mom has returned home, mothers describe pressure and expectation that they will quickly reassume responsibilities, which for some encompasses "doing it all" (Walsh 2017). For some, deployment offers a reprieve from continuous juggling of multiple competing demands in their roles as service member and mother, and this reprieve may end abruptly upon return. It adds to the stress of this experience when the experience is not recognized or understood. Mothers experience frustration when they encounter assumptions that deployment must be hard and reintegration must be easy (Walsh 2017).

Military moms recognize that their dual roles cannot always be readily integrated nor their responsibilities easily balanced. They develop and employ a variety of strategies to uphold their dual commitment to the best of their ability, and they can be most effective in this endeavor when they are well supported and feel strongly connected, rather than isolated. Meaningful supports include policies and programs, families, and communities that are sensitive and responsive to the needs of military mothers and families.

Recent policy changes seek to demonstrate to women that military service can be compatible with family responsibilities. While these changes represent substantial improvements, there remain aspects of military life that pose challenges to family life, including the regular relocations of active duty service members (and their families) and extended separations due to deployment. Military policy and military culture both shape the experiences of military moms (and all military-connected individuals and families). Military moms report divergent experiences in different locations and under different leadership, ranging from consistent support for their efforts to maintain work-life balance, to implicit and explicit messages that they cannot be excellent in both spheres. In the context of the US military, where history and tradition are deeply valued, leadership has an essential role to play in facilitating the health and well-being of military moms and their families by promoting a culture and setting an example of self-care as well as sustainable work-family balance.

Goodman et al. (2013) analyzed the personal stories of deployed mothers to understand how they maintained their relationships with their children across the deployment cycle. Military programs, processes, and procedures identified as helpful by military moms included "Numerous programs such as family readiness groups and behavioral health care options, processes such as unit support, and policies referencing length of deployments" (p. 732). However, respondents also pointed out challenges with military programs, process, and procedures, including family readiness groups that were not relevant or accessible, stigma and lack of confidentiality when seeking behavioral health care, inadequate or nonexistent support networks for caregivers, problems with establishing family care plans, lack of support for single mothers who needed to relocate children to caregiver's home, flexibility in leave time to address caregiver issues, and need for more time for reintegration after deployment.

A variety of important family supports are available to families on military installations (e.g., full family health care, family housing, accredited and affordable day care with extended hours, programs and activity centers for children, new parent support programs). However, these supports are not available to mothers and their families, including some active duty as well as National Guard and Reserve families, who live off base, in communities throughout the country. A small but increasing number of programs exist to support military families in the community, with varied emphasis on specific periods in the deployment cycle or spanning the full cycle from pre-deployment through reintegration. One such program, Strong Military Families, is a 10-week, group-based program for military families that focuses on five domains: social support, parenting education, self-care and stress reduction, child routines and parent-child interaction, and care connections for families (Rosenblum and Muzik 2014; Rosenblum et al. 2015). Developed and tested with a general population of military families, predominantly families that include a father service member, the Strong Military Families model holds promise for promoting the well-being of military mothers. The emphasis on self-care and expanding social support, alongside a focus on parenting and parent-child relationships, reflects the self-identified needs of military moms (Walsh 2017).

Indeed, military moms are open to and eager for connection with others who have had similar experiences and understand the realities that they and their families face.

Typically the work of maintaining and restoring strong parent-child and partner relationships, in addition to the other tasks of the deployment cycle, is undertaken privately. Connecting with a larger community of support is heartening, for both service member and family.

A small but growing body of research has aimed to both understand and improve the health and family conditions of women service members and veterans. Additional research is needed to better understand the short- and long-term impacts of deployment on the health and well-being of women service members/veterans and their families and to inform and enhance interventions to meet their needs. Pierce et al. (2011) call for a better understanding of the factors that contribute to both successful and problematic responses to war exposure; Bean-Mayberry et al. (2011) call for

research that is more descriptive, observational, and interventionist; and Gewirtz et al. (2014) and DeVoe and Ross (2012) suggest more research on the family adjustment of mothers deployed. Gewirtz et al. (2014) also suggest studies that focus on maternal identity and combat exposure, and Street et al. (2009) have emphasized the need to understand how men and women are affected by combat exposure and, in turn, how such combat exposures affect their reintegration experiences differently. Future research to deepen understanding of how the deployment cycle affects military mothers and their families, including investigation of the impact of post-deployment maternal depression and PTSD on family functioning, is critical in order to effectively care for the military mothers and families who sacrifice much in service to their country.

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Maternal Experience of Neonatal Intensive Care Unit Hospitalization: Trauma Exposure and Psychosocial Responses

15

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Abstract

For mothers in the postpartum period, admission of their newborn to a neonatal intensive care unit (NICU) is often an unanticipated experience that can be shocking and traumatic, and can elevate maternal risk for psychiatric symptoms, including posttraumatic stress. In this chapter, the NICU experience, psychosocial implications, mental health consequences, and screening tools that have been used to identify maternal psychiatric symptoms in this setting will be reviewed. Psychosocial interventions and programs addressing the stress and psychological reactions of mothers with an infant in a NICU will be introduced, as will recently developed interdisciplinary recommendations for the support of NICU families and a nurse training program to promote optimal communication between NICU nurses and parents. The chapter concludes with future clinical and research directions to continue improving maternal adjustment and mental health during a child's NICU hospitalization.

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15.1 Introduction

Women can experience a variety of adverse reproductive-related events surrounding the perinatal period. In some cases, the experience of achieving and maintaining pregnancy is largely uneventful, while others may confront significant challenges such as infertility, preterm delivery, and perinatal loss. For infants who are born preterm, along with those born with other serious medical conditions, admission to a neonatal intensive care unit (NICU) may be necessary. For mothers in the postpartum period, hospitalization of their newborn infant is extremely stressful and often unanticipated. It can be a shocking and traumatic experience that includes exposure to a highly medicalized environment, laden with uncertainty, challenges to parenting, and intense emotions. For these reasons, the NICU admission and subsequent hospitalization elevate the risk for mothers to develop and/or exhibit psychiatric symptoms—including posttraumatic stress disorder. Furthermore, symptomatology does not necessarily subside following discharge, as parents must take on additional caregiving responsibilities during the transition home. While both parents are undeniably affected by the NICU experience, research has shown that mothers and fathers respond in different ways to their child's hospitalization (Fegran et al. 2008). Postpartum mothers, in particular, may be more likely to experience acute psychological distress and higher levels of stress compared to fathers (Matricardi et al. 2013; Carter et al. 2007). This chapter will focus specifically on maternal experiences but will note findings relevant to both parents as applicable.

The NICU experience, psychosocial implications, mental health consequences, screening, and interventions will be reviewed in this chapter. Specifically, rates and reasons for NICU admission will be introduced, and the maternal experience will be described. This will include rates of psychiatric conditions and risk factors for maternal distress, such as the physical environment of the NICU and the limited opportunity for bonding and attachment. Screening tools that have been used in the NICU setting to identify psychiatric symptoms will be reviewed. Psychosocial interventions and programs that have been developed to address the stress and psychological reactions of mothers with an infant in the NICU will be discussed. Some recent innovations such as the newly developed interdisciplinary recommendations for the psychosocial support of NICU families (Hall and Hynan 2015), an educational program for NICU parents, and a nurse training to promote optimal communication between NICU nursing staff and mothers in the face of NICU hospitalization will also be introduced. The chapter concludes with future clinical and research directions to continue improving maternal adjustment and mental health during a child's NICU hospitalization.

15.2 NICU Admission

It is estimated that 10–15% of infants born annually in the United States (USA) are admitted to a NICU shortly after birth (March of Dimes Perinatal Data Center 2011; Osterman et al. 2011), with NICU admission rates on the rise since 2007 (Harrison

and Goodman 2015). Globally, it is estimated that 9.6% of all births are preterm, suggesting similar rates of NICU admission in international settings as compared to the USA (Beck et al. 2010). NICUs are specialized intensive care units staffed and equipped to provide advanced medical care for congenitally ill, low birth weight, or premature newborn infants. The most common neonatal condition resulting in NICU admission is preterm birth, which is defined as delivery occurring at less than 37 weeks completed gestation. Preterm birth is problematic in that it confers risk for other medical conditions stemming from inadequate organ system development. Other conditions requiring NICU admission include respiratory distress syndrome, newborn septicemia, neonatal hypoglycemia, transient tachypnea, or other medical or surgical conditions (Committee on Fetus and Newborn 2012; March of Dimes Perinatal Data Center 2011).

In 2012, the most recent year for which epidemiological data are available, there were 77.9 NICU admissions per 1000 live births in the USA. This is a 23% increase from 2007. Maternal and newborn characteristics likely to increase chance for NICU admission are gestational age at delivery, plurality, parity, maternal age, and racial/ethnic background (Harrison and Goodman 2015).

NICU admission is more frequent among infants whose mothers are Black or African-American or who are of advanced maternal age (i.e., age 40 and over; Osterman et al. 2011). Based on reports from 27 states in the USA, Black infants are approximately 40% more likely than White infants and 60% more likely than Hispanic infants to be admitted to a NICU (Osterman et al. 2011). It is estimated that 85% of NICU admissions are singleton births, while 15% are multiples (March of Dimes Perinatal Data Center 2011).

15.3 Description of NICUs

NICUs vary in terms of their provision of neonatal specialty care services, from basic neonatal resuscitation to more intensive treatment capabilities, such as cardiopulmonary bypass and extracorporeal membrane oxygenation. The average length of stay in a NICU admission is approximately 2 weeks. In one study, the length of stay ranged from as little as 5 days to as many as 6 weeks (March of Dimes Perinatal Data Center 2011), while other studies with lower birth weight infants have reported NICU admissions lasting upward of 141 days (Stoll et al. 2010). The length of stay corresponds to the health status of the infant and completed weeks of gestation at delivery, with infants born at less than 32 weeks experiencing the most serious complications and requiring more long-term care.

While advances in medical care and technology have aided in the survival of many infants admitted to the NICU, a proportion of infants do not survive. In the USA, it is estimated that the neonatal mortality rate in 2015, defined as death occurring after birth but before 28 days of age, was 4 deaths per 1000 births (United Nations Interagency Group for Child Mortality Estimation 2016). Globally, neonatal mortality rates vary considerably among different countries, ranging from 0.2% to 29% (Chow et al. 2015). Neonatal death rates among infants in the NICU remain difficult to

estimate, as they vary widely across institutions and depend upon a number of factors including gestational age at birth, clinical comorbidities, and prior obstetric issues. Many research studies focus on neonatal death in general, not confined specifically to those infants in the NICU; however, it is likely that these groups share significant overlap. Among the research that has been conducted, several studies assessing neonatal death have found a range of survival rates (Lee et al. 2010; Schuit et al. 2012; Stoll et al. 2010). In one study of very low birth weight infants (VLBW, defined as a birth weight of 401–1500 g), the average survival rate was 72% among infants born at 22–28 weeks completed gestation, with the rate of survival to discharge increasing proportionally to the gestational age at delivery (Stoll et al. 2010). Other studies, one with a US sample and another with a sample from the Netherlands, found survival rates ranging from 66 to 83% (Lee et al. 2010; Schuit et al. 2012).

15.4 Maternal Trauma Exposure and Other Psychosocial Stressors in the NICU

With approximately one in ten infants born each year treated in a NICU, parenting in this setting has become a relatively common experience, but one that is laden with tremendous challenges and exposure to environmental circumstances that can be perceived as traumatic. First, the physical and psychosocial aspects of the NICU environment itself can serve as a traumatic stressor for mothers. As Miles et al. (1993) have highlighted, the "sights and sounds" associated with the NICU can be distressing, as mothers are confronted with sophisticated medical equipment and various monitoring machines that periodically emit alarms to alert nursing staff to a medical situation requiring their attention. Mothers may not understand what the machines do or what the various alarms might mean, which can serve as a traumatic stressor as mothers fear what the medical equipment, digital readings, and sounds may signify. Mothers may also witness infants in nearby bed spaces or rooms in distress, needing resuscitation or emergency care. This can be traumatic and frightening as they fear for their own infants' life and worry about the medical condition of others on the unit. In these ways, the NICU environment may be perceived as highly stressful by mothers and could contribute to their perception of the NICU experience as traumatic.

Next, mothers encounter numerous parenting-related challenges in the NICU, further complicating their adjustment and potentially contributing to the traumatic nature of their NICU experience. Mothers with a child in the NICU must navigate multiple medical systems while simultaneously managing their existing familial and occupational responsibilities and confronting the emotional challenges germane to the experience of having an acutely ill child. Mothers must also contend with the postpartum hormonal adjustment and physical recovery of the postnatal phase. The experience of mothering in the NICU deviates from traditional expectations of motherhood, leaving mothers to question their role and their ability to navigate this complicated and emotionally taxing arena. In addition to traumatic childbirth, which confers its own set of risks for

posttraumatic stress reactions and impaired maternal functioning (see Beck et al. 2013), mothers in the NICU may have difficulty coping with the loss of anticipated experiences, such as extensive physical contact and intimately sharing their newborn's first months of life at home (Davis et al. 2003). Mothers may also exhibit feelings of helplessness and lack of knowledge regarding how to interact with their fragile infants in the NICU setting (Melnyk et al. 2000). This leaves many struggling with the transition to motherhood, a process that is not currently well understood (Shin and White-Traut 2007). Alkozei et al. (2014) found that stress related to alterations in the parental role was the most significant source of stress among NICU mothers. This is further compounded by the limited role mothers may play in day-to-day care for their infant, as nursing staff serves as primary caregivers due to the infant's medical status.

As such, the NICU environment can interfere with bonding and attachment between mother and child. Maternal-infant attachment occurs through a process of physical and emotional interactions between the mother and her child. Having an infant admitted to a NICU after birth can interrupt or alter this relationship due to the early and sometimes lengthy separation and the feelings of powerlessness and exclusion that mothers may perceive. The physical separation (e.g., isolettes), intrusive medical equipment, limitations on holding and feeding, and mother's lack of regular participation in the child's care can interfere with attachment and bonding (e.g., Wigert et al. 2006). Furthermore, there may be limitations on breastfeeding because of the infant's health status and medical condition, which can induce feelings of inadequacy and disappointment for NICU mothers who wish to breastfeed but are not allowed (Niela-Vilen et al. 2016). The commitment and physical demands of maintaining a rigorous breast pumping schedule can interfere with sleep, along with pumping being a constant reminder of her infant's condition and hospitalization. Together, these can take a significant toll on a mother's well-being and her perceptions of the NICU experience as traumatic.

Finally, there are specific events that can occur as part of the NICU experience that can turn into traumatic stressors. A small percentage of NICU journeys will end tragically as the babies will die. In cases where withdrawal of life support and/or initiation of palliative care are indicated, parents, with support from staff, must grapple with devastating decisions. Choices regarding whether to limit extraordinary care or withdraw intensive care from their infant are not within the typical realm of parenting. Such a shift in focus to a palliative care plan may require parents to probe their deep religious and ethical beliefs, which can present ethical challenges that contribute to moral distress (Kenner et al. 2015). When an infant dies, sometimes abruptly, parental grief and loss become emotionally overwhelming as parents must now cope with this heartbreaking situation and the various decisions and activities that accompany this event (e.g., creating mementos; informing the infant's siblings, as well as family and friends; funeral planning; returning home without an infant).

The NICU hospitalization and associated events can also serve as triggers for trauma symptoms that persist long after the NICU experience has ended. In fact, events surrounding prior pregnancies and childbirth that have been perceived as

traumatic may constitute pre-existing traumas for subsequent pregnancies and contribute to the development of PTSD (Forray et al. 2009).

Moreover, the parenting stress associated with a NICU hospitalization does not end at discharge. Holditch-Davis et al. (2015) evaluated NICU mothers longitudinally from the infant's NICU hospitalization to 12 months of age and found that mothers exhibiting extreme distress and high anxiety and depressive symptoms during NICU admission remained at significant risk for psychiatric symptoms 1 year later. Moreover, these mothers also had less positive perceptions of their child (e.g., greater worry, higher perceptions of child vulnerability), which may have an impact on child-rearing practices, child development, and attachment. The potential for increased psychiatric risk post-discharge is compounded by the fact that mothers continue to experience psychosocial stress at home, as they transition from the NICU to a new environment with less support and fewer resources. NICU infants may be discharged home with a complex medical regime, visits with multiple medical specialists, and increased caregiving demands, which can prove stressful for mothers as they adjust. A recent review of studies from various NICUs found that parents, in general, do not feel prepared for discharge (Sneath 2009). The costly medical bills, risk of rehospitalization, worry about developmental delays or long-term effects of medical problems, and impact on the social aspects of family life also contribute to parental stress (e.g., Schappin et al. 2013). For parents of very low birth weight (VLBW) infants, parenting stress remains elevated for the first 18 months and does not become similar to stress reported by parents of full-term infants until the child is 2–3 years of age (Treyvaud et al. 2014).

15.5 Maternal Mental Health Consequences

The experience of parenting an infant in the NICU has been described as an "emotional roller coaster" due to the emotional highs and lows stemming from frequent changes in an infant's health status. This has been described as "vacillation between hope and hopelessness" (Hummel 2003; Obeidat et al. 2009). Parents of infants in the NICU can experience a broad range of emotions, including sadness, anger, fear, anxiety, guilt, helplessness, and grief (e.g., Davis and Stein 2004). Given the exposure to stressors, the physical environment and psychosocial demands present in the NICU, and the complex factors associated with mothering in the NICU, more significant mental health consequences can occur in the context of a NICU hospitalization. In addition, mothers are more likely to be affected given the already increased risk for postpartum depression and anxiety (O'Hara 2009), including posttraumatic stress (Grekin and O'Hara 2014). Research has documented that this elevated risk in the postpartum period is often exacerbated by the stress of a NICU admission (Beck 2003). Specific maternal sociodemographic factors, such as history of mental health problems, prior experience of trauma (e.g., childhood sexual abuse, history of reproductive trauma), poor social support, and lower socioeconomic status, also contribute to the development of mental health symptoms in the postpartum period (Grekin and O'Hara 2014; O'Hara and Swain 1996). Psychological symptoms

common among mothers who have an infant in the NICU include depression, anxiety, acute stress, and posttraumatic stress (e.g., Davis and Stein 2004).

Maternal Depression Given a woman's significant risk for mood and anxiety disturbance in the postpartum period and the undeniable link between stressful life events and depressed mood, it follows that the stress associated with a NICU admission may serve as a unique risk factor for depression among postpartum mothers. Rates of postpartum depression have been found to be significantly higher among NICU mothers as compared to the general population, with estimates ranging from 28 to 70% (Beck 2003; Meyer et al. 1995; Miles et al. 2007). In several studies of mothers of infants treated in a NICU, significant depressive symptoms were reported in 30–40% of their respective samples using validated screening measures (Davis et al. 2003; Poehlmann et al. 2009; Yurdakul et al. 2009; Alkozei et al. 2014; Cherry et al. 2016). Shelton et al. (2014) found that 62% of NICU mothers in their sample reported elevated depressive symptoms (i.e., a score of ≥13 on the Edinburgh Postnatal Depression Scale (EPDS)) and that high depressive symptoms were associated with greater stress and less overall well-being. A recent study of postpartum depression in NICU mothers demonstrated elevated rates of depressive symptoms during NICU hospitalization, with 41% of mothers screening above threshold on the EPDS (Bonacquisti and Geller 2016). Taken together, these studies suggest that maternal depression in the postpartum period is of substantial concern for NICU mothers, with depression rates exceeding those documented outside of the NICU context.

Maternal Anxiety In contrast to the abundance of literature on postpartum depression, relatively little work has been conducted on maternal anxiety in the postpartum period (Ross and McLean 2006; Wenzel et al. 2005; Paul et al. 2013). That the prevalence of anxiety disorders has been reported to exceed that of depression during pregnancy and the early postpartum (Fairbrother et al. 2016) highlights the need for greater attention in this area. Research that exists has demonstrated that rates of postpartum anxiety symptoms are notably elevated in mothers with comorbid depressed mood, medical and negative social life events, perceived stress, and increased duration of hospital stay following delivery (Paul et al. 2013). These factors may be particularly relevant for NICU mothers as a recent study demonstrated that postpartum anxiety symptoms were found to be higher in mothers of VLBW infants when compared to infants born at term, with significant risk factors emerging as low social support and increased stress during birth (Helle et al. 2016). In addition, for some women, postpartum anxiety is heightened when separated from their child (van Bussel et al. 2009). This may manifest as increased concerns for the infant and decreased confidence in coping and parenting capabilities (Reck et al. 2012). These factors point to postpartum anxiety as a specific concern for NICU mothers due to the uncontrollable nature of their situation and the fears and worries they have for their infant's health, as outlined above. Moreover, a recent study found that mothers who experienced preterm birth or other perinatal complications had the highest levels of postpartum anxiety (Zelkowitz and Papageorgiou 2005). In a

sample of NICU mothers, Bonacquisti and Geller (2016) found higher rates of anxiety during NICU hospitalization compared to 2–3 months later, with anxiety positively associated with both depression and stress. Mothers of infants in the NICU have demonstrated high levels of anxiety, with lower social support and lower perceived control being associated with increased anxiety symptoms (Doering et al. 2000; Zelkowitz and Papageorgiou 2005).

Posttraumatic Responses In addition to depression and anxiety stemming from NICU admission, trauma symptoms and posttraumatic responses are prevalent among NICU mothers. This burgeoning area of research is currently small relative to the body of the literature on postpartum depression; however, recent studies have demonstrated a strong relationship between NICU admission and trauma responses in mothers. In a recent study, 18% of mothers in the NICU were found to have acute stress disorder during their NICU admission, with 30% meeting the criteria for posttraumatic stress disorder 1 month later, a rate that exceeds what is found among mothers of full-term infants (Shaw et al. 2013). In a direct comparison of NICU mothers and mothers of infants in a well-baby nursery, 23% of NICU mothers were found to have acute stress 1 week postpartum compared to 3% of non-NICU mothers (Vanderbilt et al. 2009). Vanderbilt and colleagues also demonstrated that NICU admission increased the risk for maternal posttraumatic stress, even when controlling for depression and history of other traumatic events. Lefkowitz et al. (2010) reported similar rates, with 35% of mothers meeting the criteria for acute stress disorder 3–5 days after NICU hospitalization and 15% meeting PTSD criteria 1 month later.

There is a notable portion of postpartum women who do not meet full diagnostic criteria for PTSD, although exhibiting many of the required symptoms (Alcorn et al. 2010). Current research suggests that this subclinical presentation may confer significant psychosocial morbidity for mothers as symptoms are likely to impact parenting skills, interpersonal relationships, and other aspects of daily functioning. Posttraumatic stress symptoms that do not reach full diagnostic criteria are likely to be conflated with depression and anxiety and thus overlooked or misdiagnosed or treated. It is essential that healthcare providers screen and attend to such symptoms in NICU mothers.

Regarding the type of trauma symptoms experienced by NICU mothers, a small study of 30 mothers showed increased arousal as the most commonly reported symptom, followed by reexperiencing and avoidance (Holditch-Davis et al. 2003). These studies emphasize traumatic stress as a component of the NICU experience, which may persist long after NICU discharge. In particular, posttraumatic responses may emerge or worsen after discharge (Holditch-Davis et al. 2003; Feeley et al. 2011). Trauma symptoms have been shown to be associated with the severity of the infant's illness, with mothers of more critical infants experiencing elevated traumatic responses (Feeley et al. 2011). PTSD also negatively impacts a NICU mother's ability to interact appropriately with her infant, suggesting longer-term consequences stemming from traumatic experiences in the NICU environment (Feeley et al. 2011).

Impaired Maternal-Infant Attachment As noted above, factors associated with NICU hospitalization often result in delayed or disrupted maternal-infant attachment frequently seen in mother-infant dyads in the NICU (Shin and White-Traut 2007). In one study, Feldman et al. (1999) compared maternal-infant attachment in mothers of full-term infants, mothers of healthy preterm infants, and mothers of VLBW infants. Their results suggest that attachment was negatively affected by the duration of mother-infant separation, which was prolonged for mothers of VLBW infants. Feldman and colleagues also found that maternal anxiety and depressive symptoms further disturbed the maternal-infant relationship in their sample. This has been replicated in additional studies such as a recent examination by Tietz et al. (2014), which found that mothers with postpartum anxiety and depressive symptoms reported less bonding than mothers without these symptoms. Further emphasizing the importance of healthy mother-infant relationships, impaired maternal-infant interaction stemming from postpartum mental health conditions has been associated with significant negative neurodevelopmental, socioemotional, and behavioral outcomes for the offspring (e.g., Field 2010; Feldman 2009; Raposa et al. 2014; Shen et al. 2016).

15.6 Screening for Trauma Symptoms in the NICU

In light of the significant stressors associated with infant NICU hospitalization, screening for current PTSD as well as traumatic history and symptomology may be indicated, underscoring the importance of identifying an appropriate screening tool. Appropriate screening could then allow for better targeting of evidence-based treatments aimed at those with the highest risk of developing PTSD. Recent research has evaluated several screening measures with demonstrated clinical utility in the NICU, such as the PC-PTSD (Wenz-Gross et al. 2016), the Perinatal Posttraumatic Stress Disorder Questionnaire (PPQ; Callahan et al. 2006), and the Davidson Trauma Scale (Davidson et al. 1997). Additional research in this area is warranted to improve trauma screening measures in the NICU and determine optimal methods to connect mothers to care for appropriate treatment of posttraumatic responses.

Currently, there is work underway to validate a new risk assessment screener that can improve the way healthcare providers identify and provide for the psychosocial needs of parents who have a child in the NICU or CICU, allow for the proactive administration of appropriate services to parents, and ultimately directly benefit the infant's long-term growth and development. The Psychosocial Assessment Tool-Neonatal Intensive Care Unit/Cardiac Intensive Care Unit (PAT-NICU/CICU) was recently developed by psychologists from Drexel University (Geller), the Children's Hospital of Philadelphia (Patterson), University of Kansas Medical Center (Steve Lassen), Nationwide Children's Hospital (Amy Baughcum), and Children's Hospital of California (Marni Nagel). Adapted from Kazak's Psychosocial Assessment Tool (PAT 2.0; Pai et al. 2008) based on the Pediatric Psychosocial Preventative Health Model (Kazak 2006), the PAT-NICU/CICU is a brief parent-report screener of psychosocial risk in families, including items that assess history of fertility issues and

prenatal/perinatal loss. This tool matches level of care with level of risk. Once the level of risk is established, staff can guide parents to the appropriate resources either within the hospital or within the community.

Specifically, scores will be used to classify the person into one of three categories: *universal*, *targeted*, *or clinical* range. Those scoring in the lowest-risk *universal* range are considered to be functioning relatively well under the circumstances and would be expected to progress through the NICU/CICU without incident. For example, in this case at the Children's Hospital of Philadelphia, *universal* support typically would include general social work support, language services, occupational therapy, physical therapy, child life therapy, chaplaincy, developmental care rounds, speech and language pathology, and a variety of support groups (e.g., lactation, parent education, crafts, and developmental education) as indicated by the needs of the family. In addition to the services available to the *universal* group, individuals scoring in the *targeted* range would receive second-tier screening and triage involving a more targeted diagnostic interview and assessment by social work or psychology, focused supportive counseling by social work, and potentially music therapy. Finally, a person receiving a score in the highest-risk *clinical* range would be offered those programs in the *universal* and *targeted* level in addition to psychological and psychiatric interventions and psychotherapeutic support with a potential focus on individual coping, brief family therapy, parent-infant dyadic therapy, grief and bereavement, psychopharmacologic support, and community inpatient or outpatient resources. After validation studies, the PAT-NICU/CICU will be widely available to large and small NICUs.

15.7 Psychosocial Services for Mothers and Families

Over the past several decades, neonatal critical care has witnessed significant gains in both the availability of services and the sophistication of medical techniques, demonstrating a substantial improvement in the outcomes of infants (Committee on Fetus and Newborn 2012). With medical technological advances reaching their limit, the scope of care has now widened to include the emotional and psychosocial well-being of the mother and family (Meyer et al. 2011). While many NICUs have included some level of psychosocial services for decades, overall there remains an absence of dedicated staff and limited programming to address maternal emotional responses and mental health (see Hall and Hynan 2015).

An online survey inquiring about mental health personnel and services in the NICU was developed by members of Geller's Drexel University Women's Health Psychology Lab and Patterson's Children's Hospital of Philadelphia (CHOP) newborn/infant intensive care unit (N/IICU) psychosocial program and distributed within the NICU community using Listservs (see Perelman 2014). Respondents included 318 individuals in 165 hospitals across 15 countries (with 9% of respondents from outside the USA, including such countries as Spain, France, and Tunisia). Providers included medical directors, neonatologists, nurse practitioners, bedside nurses, social workers, psychologists, and chaplains. Respondents reported that nearly 48.7% of

their institutions have a structure in place to triage mothers for mental health concerns and 53.3% have a structure in place that offers these types of services. Of the 318 institutions, only 14.5% have these services located within the NICU. Forty-four percent indicated that they have mental health personnel available for parents, 23% having licensed clinical social workers, 21% having licensed social workers, 16% having a psychologist, 7% having a psychiatrist, and 1% having a mental health counselor. Other disciplines that were available to offer support included chaplains, developmental specialists, family therapists, clinical nurse specialists, and family support specialists. None of the NICUs who completed the survey reported having a psychiatric nurse. Results also indicated that more than 50% of the NICUs represented in the survey did not meet the National Association of Perinatal Social Workers recommendations for social worker to patient ratio of at least 1:20. Of the hospitals surveyed, 60% described support groups—most often, scrapbooking (37%) and psychoeducational (35%) groups. Fewer NICUs (10%) reported having more traditional psychotherapeutic support (i.e., individual psychotherapy, bereavement support). Some reported groups led by NICU graduate parents, current NICU parents, nurses, and the March of Dimes. The need for consistent psychosocial support and mental health services for NICU parents is clearly evident, but more work and dedicated resources are necessary to meet the growing need (Hynan et al. 2015).

NICU Programs Several psychosocial programs have been developed and evaluated for implementation in the NICU, each with various targets of assessment or intervention. The Clinical Interview for Parents of High-Risk Infants (CLIP; Meyer et al. 1993) is used to assess the psychosocial functioning of parents who have an infant in the NICU. The CLIP has been shown to be a valuable indicator of family functioning in the customization of the individual psychosocial components for each family (Meyer et al. 1994). The psychosocial parent support (PPS) program targets levels of bonding/attachment between mothers and their extremely low birth weight (ELBW) infants (Nearing et al. 2012). An ELBW infant is defined as one with a birth weight of less than 1000 g (2 lb., 3 oz). Parents in the PPS program were taught developmentally appropriate sensory stimulation, skin-to-skin contact, breastfeeding, infant massage, and techniques to read their infants' cues and soothe them; these factors contributed to a shorter median length of stay when compared to a control group. Two interventions have been developed to provide psychoeducational information and reduce psychiatric symptoms. The first is Melnyk et al.'s (2006) COPE (Creating Opportunities for Parent Empowerment), a parent-focused intervention program that uses audio recordings, workbooks, and written material to deliver psychoeducational information related to having a baby and having a baby in the NICU. The goal is to decrease levels of anxiety and depression in mothers while increasing mother-infant interactions. The second is a six-session manualized program developed by Shaw et al. (2013), which emphasizes education regarding symptoms of trauma, cognitive restructuring, relaxation, and assisting mothers develop a trauma narrative. This intervention has been shown to reduce symptoms of posttraumatic stress and depression in NICU mothers. For a review of interventions to reduce stress among NICU mothers, see Chertok et al. (2014).

Geller and Patterson and colleagues, using best practices garnered from the literature and feedback from families who participated in focus groups, created a parent education program: the "N/IICU Parent Survival Guide: What you need to know" (i.e., Survival Guide). Survival Guide is a group-based psychoeducational session intended to provide a foundation for all parents/legal guardians/caregivers who have a child in the NICU. Through the provision of information, coping skills, and resources, this program is designed to give basic information about the structure and operations of the NICU as well as provide space for affected parents to discuss feelings they may experience while in the NICU. The name was selected based on feedback from parent focus groups.

Development of the program grew out of parents asking many of the same types of questions upon entering the NICU (e.g., What's an attending? Why do I get a new doctor every 2 weeks? When can I ask my questions? Why am I so exhausted? I find myself crying all the time. Am I normal?). Parents described their anxiety associated with being in a new environment, adjusting to new people, and relinquishing care and control of their baby to a group of strangers while feeling helpless and guilty as a parent. In order to organize and outline the training, current NICU parents were invited to participate in focus groups, discussing what they wished they had known upon entering the NICU. NICU staff also provided input as to what parents and families commonly ask them. After a review of extant literature, it was confirmed that this program reflects current issues in the field, ultimately distilling findings into the three most prevalent themes—the care team, communication, and coping.

The first theme—the care team—focuses on understanding the various providers taking care of the baby and their roles. One parent described her experience of feeling helpless and overwhelmed by the multitude of people who wanted to speak with her or touch her baby. She commented that she did not know the difference between an occupational therapist and physical therapist. She also did not understand why her premature baby needed a consultation from a speech and language pathologist as she did not realize that these professionals also work with infants on feeding and swallowing issues. Survival Guide provides an overview of the key people in the NICU who care for infants. A pamphlet that outlines each member of the team and his/her role on the team is also provided. Another example shared by a parent was his concern when he asked the doctor why his child's ventilation settings had changed. The doctor responded, "I don't know, I will ask." Befuddled the parent responded, "How can you not know, aren't you the doctor?" The doctor then explained that the hospital was a teaching hospital and that while he *was* a doctor, he was a resident. He explained that the doctor in charge is called the attending and is a neonatologist. He or she sets the plan of care. He explained that as a resident, he had a supportive role on the team and was training to become a neonatologist. The family member learned that in a teaching institution, residents and fellows carry out the instructions of the neonatologist attending in charge.

The second theme—communication—describes and discusses the roles of the providers. In session, we explain that certain people are the "go to" people who can answer questions or put families in touch with those who can provide the answers. In addition, it is discussed that there are optimal times during the day when staff are

more prepared to answer questions. For example, "morning rounds" or "rounding" is defined, and it is explained that the medical team visits each child's bedside in the morning to review the chart and activities of the prior evening and then sets a plan for care for the day. Parents are encouraged to participate and to bring their written questions to morning rounds. "Change of shift" is defined, and parents are informed that this is the time when the outgoing nurse reviews the plan of care with the incoming nurse. Because of the acuity level of the intensive care unit, the need to transfer important medical information, and for the safety of their child, it is recommended that the parents do not interrupt during "change of shift" report but instead reconnect with the new nurse to get any updates on their child's plan of care following the shift change.

The third theme—coping—focuses on the concept of coping and self-care. Using video reenactments and the reading of quotations, words of actual parents are presented to describe their experience in the NICU and offer advice on how to reduce the feelings of stress and anxiety that arise in parents with a child newly admitted to the NICU. In the session, parents are invited to share their feelings—guilt, fear, sadness, exhaustion, loneliness, relief, and numbness. Current feelings are validated to help parents articulate their feelings and reactions and discuss feelings they may confront at a later time. Coping strategies are reviewed, and new strategies are discussed that might be needed to address this extreme circumstance with emotions at such a high level of intensity. The NICU hospitalization, and in many cases, the birth experience itself, is labeled as traumatic, and the individual nature of the emotional impact of the NICU experience is affirmed while encouraging parents to find positive support and outlets either in the hospital or in the community. Parents are encouraged to make an effort to maintain adequate nutrition and hydration; this is especially important for mothers who are breastfeeding or pumping.

The Survival Guide occurs every week as part of a monthly schedule of activities for parents. Sessions are co-led by a psychologist or advanced psychology doctoral student and a NICU social worker. Sessions are consistently held the same time and place each week. The day before and the morning of each session, research assistants review medical records to identify all parents of infants admitted over the past week. A visit is made to each new patient's bed space to personally invite the parents to the session. Research assistants spend a few minutes describing the contents of the session and informing them that former NICU parents contributed to the content of the session. If the family is not present, the research assistant asks the bedside nurse to pass along a flyer to the parents. Research assistants visit the bedside on two different days at different times, thereby maximizing opportunities to connect with all parents.

On the day of session, a variety of methods are used to encourage participation and maintain everyone's attention. Light refreshments are offered, a 25″ × 30″ poster board displays the session outline, and two prerecorded reenacted quotes from previous NICU parents are presented. Parents are able to listen to the group leaders, read along with the posters, and watch videos. The session concludes with an opportunity for parents to ask questions, and then the session is closed with more quotes from actual parents. Often a parent's own words carry more power than words from

facilitators. Feedback is obtained through a written survey at the end of each session. Parental feedback has been extremely positive, with participants stating that the content of the session was helpful (96%) and that the topics were clear and understandable (97%). In response to a qualitative inquiry about the "takeaway messages," parents have written comments such as "Don't be afraid to ask for help," "Take time for myself even if it's a little time," "Emotions are normal for NICU life," and "It gave me a better understanding of what/who is involved with my baby's care."

Nursing and other NICU staff are positive about the Survival Guide session. They are enthusiastic about helping parents take a break from the bedside to focus on their own needs and learn about issues that can enhance their NICU experience. On a few occasions, a bedside nurse has escorted a parent to the session because the nurse felt the mother really wanted to attend and could benefit from the session but just needed a little encouragement. In one instance, a neonatologist has even written a "prescription" for a parent to attend the Survival Guide session, as she felt it was a necessary part of the care provided.

The Survival Guide session also allows parents to informally meet the social workers and psychologists in a non-threatening group environment. Facilitators are always happy to see parents connect over the common experience regardless of diversity in SES, ethnicity, or geographic location. Families who connect in the Survival Guide session tend to encourage each other to participate in the other support activities. Evaluation of the IRB-approved study at CHOP comparing a control group of NICU parents with a group that participated in the Survival Guide program on rates of self-reported depression, anxiety, and stress at admission and at a 2-week follow-up is currently underway.

15.8 Advancements Toward Greater Interprofessional Psychosocial Support in the NICU

Further demonstrating the increased recognition of the importance of maternal well-being during NICU hospitalization and the central role of the family in NICU infant care, a multidisciplinary workgroup of perinatal health professionals and leaders of NICU parent support organizations recently was convened by the National Perinatal Association (NPA) (see Hall and Hynan 2015). The goal was to outline standards of care and develop interdisciplinary recommendations to guide the psychosocial support of parents who have a child in a NICU. Six components of comprehensive family support in the NICU were identified. "Family-centered developmental care," which involves the family as an essential contributor to the provision of individualized developmentally supportive care of their infant, was identified as the foundation of NICU care. Recommendations were outlined for the role of mental health professionals in screening, clinical services, and psychoeducation, as well as for peer-to-peer and family support, palliative and bereavement care, post-discharge follow-up, and NICU staff education and support. Dissemination of the guidelines is widespread with the aim of promoting awareness and adoption. The NPA also has compiled a toolkit of resources for parents and providers (www.support4NICUparents.org).

While NICU hospitalization is certainly a stressful period for mothers, the range and intensity of maternal responses also challenge staff. Studies have shown NICU staff are at elevated risk for job-related psychological distress and secondary traumatic stress, which can lead to burnout and/or compassion fatigue. Estimates of burnout in a study of 44 NICUs ranged from 7 to 54%; on average 40% of doctors and nurses in general report burnout (Profit et al. 2014). When healthcare providers are affected by burnout, compassion fatigue, or secondary traumatic stress, they have decreased the ability to provide effective support to parents; they themselves are not as sensitive to mothers' needs and are not emotionally available to provide that support (Hall et al. 2015). As such, training and support of NICU nursing staff not only benefit staff but also may be beneficial to the experience of NICU mothers.

In an effort to support staff in their interactions with parents, members of Patterson's CHOP N/IICU psychosocial program, Geller's Women's Health Psychology Lab at Drexel University, and CHOP nursing joined to develop a nurse training program. The goals of the program are to promote compassion and empathy for "families in crisis" and enhance and refine skills for working with families. The program uses a didactic approach combined with videos depicting common scenarios encountered by NICU nurses when interacting with families. Common emotional reactions and communication styles that can be exhibited by NICU families are presented, including anxiety, denial, passive-aggressive, aggressive, or withdrawn behavior styles. It is explained that parents in crisis do not always exhibit these emotions in a straightforward manner, but for the purposes of training, the manifestation of each emotional reaction has been simplified in the examples portrayed. It is also pointed out that these emotional reactions are adaptive in nature. Many times, the family must wrestle with a multitude of emotions and behave in ways that are completely inconsistent with their normal affective state. Staff members are reminded that the emotions expressed by the family must be understood in the context of extreme feelings of helplessness and hopelessness. Staff must assist families as they process their experience and use positive and negative styles of coping. This assistance can range from requesting family meetings to setting boundaries and structural guidelines around acceptable/safe behaviors and unacceptable/unsafe behaviors. For example, for the vignette demonstrating denial, a father is informed by the nurse that his son is in need of a PICC line (peripherally inserted central catheter). The father calmly replies that such intervention is not necessary given that his son is strong and resilient and that the important thing is to get his son home as soon as possible. For each scenario, videos also present two alternative endings depicting a basic and more advanced response on the part of nursing staff. For the vignette depicting denial, the most basic reply is the nurse educating the father about his son's condition and the necessity of the treatment intervention, but not to responding to other aspects of the father's statement. The more advanced response depicts the nurse demonstrating active listening skills, addressing the unspoken issues behind the father's behavior (e.g., the father may be responding to stressors based on multiple demands such as other kids in the home), recommending a consult with social work about comprehensive family needs, and discussing with the attending neonatologist about all possible interventions ordered for this child. During the training, nurses are asked to comment

on the vignettes, provide examples they may have already experienced, and discuss alternative options for addressing each situation. Following training at CHOP, even seasoned NICU nurses reported feeling more comfortable and confident in handling the previously identified "stress-producing" situations. In feedback questionnaires recorded directly after the program training, nurses appreciated the insights gained and the newly acquired "parental" perspective. The nurses commented on their recognition of the emotional needs of families, stating, "there may be more going on in the parents' lives than we know"; "I need to be okay with allowing my families to feel the emotions that they do." They also reported on perspective-taking, commenting, "I can't take it personally if a parent/family acts out or blames me"; "I am not the only nurse that has experienced aggressive families, I must be confident/a leader." In giving tangible options for handling more extreme parental reactions, nurses understood from the training that, "The code bell is an option if I feel immediately physically threatened"; "I should involve a higher level (supervisors, leadership) earlier when there is a problem brewing"; "… use the buddy system to help in stressful situations with families."

Using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), nurses endorsed that "The content of today's program was helpful in understanding some of the behaviors exhibited by families in the N/IICU" (4.5), "The video examples gave me useful options for responding to the challenging behaviors of families" (4.4), and that they "felt more comfortable working with challenging families" (4.2). Finally, 85% of the nurses who participated in the training reported that they felt more comfortable working with families in crisis.

The program shared some of the pitfalls that were common to staff. It was mentioned that staff sometimes reacts too quickly and feels compelled to give an answer. Many times, it is more advisable to acknowledge the question or request and then take some time to consider the most appropriate response. Through the program, staff is encouraged not to avoid communication with family for fear of a negative outcome and not to assume personal responsibility if the family becomes upset or displays anger or disappointment toward them. Instead, staff members are encouraged to reflect upon possible conflict as expression of the families' situational distress. Finally, staff is cautioned not to allow their clinical judgment be negatively influenced by a family who is attempting to direct care. In contrast, staff is also empowered, and it is stressed that they are not expected to quietly endure abusive situations with families.

The program is structured to end each vignette with "takeaway tips." Nurses are encouraged to be confident and self-assured in their interactions with families—reminding them that they are central to help in the care of the baby. It is recommended that they make an effort to introduce themselves and their role early in the shift and that they should be patient and *expect* the "family in crisis" to make some demands and have needs. Finally, the need to maintain the privacy of patients by being mindful of what they say while on the unit and around other families and staff is discussed.

Relevant to staff role in palliative care, neonatal death, and bereavement support in the NICU, as well as to other aspects of reproductive loss care for families (e.g., sibling support) and staff support (e.g., ethical and moral dilemmas, secondary trauma) in the NICU, the Hospice and Palliative Credentialing Center (formerly NBCHPN) offers an interdisciplinary examination for the Certified in Perinatal

Loss Care (CPLC®) credentialing certification (www.goHPCC.org). This certification highlights the necessity of collaboration between nurses, physicians, psychologists, social workers, counselors, child life specialists, and chaplains, for best practices in the care of mothers/families on the NICU, particularly those who have experienced a perinatal loss.

15.9 Conclusions and Future Directions

In this chapter we have outlined the multifaceted challenges that mothers and the whole family endure when confronted with the necessity of a NICU admission for their child. We have described the potential detrimental effects on mothers in terms of psychological symptoms, including depression, anxiety, acute stress, and posttraumatic stress disorder, and the negative impact on daily functioning and mother-infant interaction.

However, it should be noted that as with other stressors, not all mothers respond in the same way to their infant's NICU hospitalization. While much of the extant literature has focused on the negative sequelae of NICU admission, several studies have examined posttraumatic growth as an outcome of the NICU experience; social support from family and healthcare providers appears to be an important contributor to posttraumatic growth in mothers following NICU admission (Barr 2011).

Recognition of the importance of psychosocial care for NICU mothers to promote such posttraumatic growth and resilience continues to grow, and along with it, much needed research is evolving. Further clinical and research efforts are warranted to evaluate and better understand the experience of NICU mothers from diverse backgrounds, provide early identification of risks and symptoms, and further develop effective evidence-based interventions for reducing distress, improving psychiatric symptoms, and promoting optimal maternal-infant attachment during hospitalization and post-discharge. Psychosocial services and interventions have been developed and tested in NICU mothers, with more to be examined in terms of their feasibility and effectiveness. In addition, standards of care and interdisciplinary recommendations to guide the psychosocial support of parents who have a child in a NICU were published and disseminated (Hall and Hynan 2015). Adoption of these standards by NICUs can significantly improve provision of care, while targeting interventions and services to parents who need them, with the goal of improving overall functioning and outcomes throughout the NICU experience.

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