

Chapter 1

General Introduction



Becoming a parent is often portrayed as a joyous and exciting period. However, there is also a substantial group of women who have difficulty adapting to parenthood. Review studies suggest that the point prevalence of elevated depression scores ranges from 7 to 13% across pregnancy and the postpartum period, although prevalence rates in different studies are highly variable (Bennett, Einarson, Taddio, Koren, & Einarson, 2004; Gavin et al., 2005). In addition, 8-16% of women reported high anxiety during pregnancy and the postpartum period in a large community study ($N = 8323$; Heron, O'Connor, Evans, Golding, & Glover, 2004). Even larger numbers of women have elevated symptom levels at least once in the perinatal period. Heron and his colleagues (2004) showed that 25% of women reported elevated depression, and 27% reported elevated anxiety at least once from 8 weeks of pregnancy to 8 months postpartum (i.e., in 4 assessments). Lee and colleagues (2007) found that more than half of the women had heightened anxiety symptoms at one of their antenatal assessments (the 1st, 2nd or 3rd trimester of pregnancy or at 2 months postpartum), albeit in a smaller sample ($N = 357$). Another potential problem associated with the transition to parenthood is that several women are insecure about their (future) parenting abilities. Although the number of women having more negative expectations is not expressed in prevalence studies, a qualitative study suggested that a sizeable number of women (35%) express anxious thoughts in response to open-ended questions about how they expect parenthood to be (Delmore-Ko, Pancer, Hunsberger, & Pratt, 2000). Taken together, problems surrounding the transition to parenthood may be quite common and warrant attention given their implications for women's long-term mental health, but also for parenting and child outcomes (e.g., Jones & Prinz, 2005; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Murray, 1992; Nicol-Harper, Harvey, & Stein, 2007; O'Connor, Heron, Golding, & Glover, 2003).

In parenting research, women's problems with the adaptation to parenthood and predictors thereof are often studied in isolation or only at one point in time. However, social cognitive theory conceptualizes human adaptation and change as the dynamic interplay among personal, environmental, and behavioral processes (Bandura, 1986, 1997). People cannot fully shape their environment, neither are people solely influenced by their environments (Bandura, 1986, 1997). During transitional phases, such as the adaptation to parenthood, women's personal functioning is therefore best measured over time, so that personal changes can be seen in the context of environmental or situational changes. This was the central approach taken in this thesis.

According to Bandura (1997, 2001) one of the key elements of social cognitive theory is that people believe that they can exert some measure of control over their situation, and that this belief is itself a motivating factor for taking action. Self-efficacy, defined

as “the conviction that one can successfully execute the behavior required to produce the outcomes” (Bandura, 1977, p. 193) is an important predictor of human competence and success. The way in which people deal with (changing) situational demands is influenced by their judgments about their own capabilities (Bandura, 1997). People with a strong sense of efficacy see demands or difficulties as surmountable and are therefore more likely to initiate necessary coping behaviors and to persist in their efforts to deal with challenges. In contrast, people with a weak sense of efficacy are less persistent and more readily give up when they are confronted with demanding circumstances (Bandura, 1989, 1997). However, self-efficacy beliefs do not exist on their own and influence, and are influenced by stress, anxiety, and depressive symptoms (Bandura, 1977, 1989, 1997). Rather than viewing self-efficacy, anxiety, and depression as indicators of successful adaptation in isolation, the combination of these factors may be a better conceptualization of adaptation.

The aim of this thesis was to better understand the linkages among problems in women’s adaptation to parenthood, as well as predictors thereof, from a social cognitive perspective. Consequently, changes in self-efficacy and mood states (i.e., depression and anxiety) in the transition to parenthood were used to measure women’s adaptation to parenthood. Because self-efficacy judgments can be highly differentiated based on the domain in which they are studied (Bandura, 1997), this thesis was specifically focused on parenting self-efficacy.

Parenting Self-Efficacy from a Theoretical Social-Cognitive Perspective

Parenting self-efficacy, defined as “the expectation people have about their ability to parent successfully” (Jones & Prinz, 2005, p. 342) is a specific form of self-efficacy applied to the parent domain. Consistent with Bandura’s (1997) notion that self-efficacy contributes to performance accomplishments and success, parenting self-efficacy was found to be related to more effective parenting (for a review, see Jones & Prinz, 2005), as specified for example by higher parental sensitivity and competence (Bohlin & Hagekull, 1987; Teti & Gelfand, 1991) and more parental monitoring and responsiveness (Bogenschneider, Small, & Tsay, 1997). Performance accomplishments, however, work in a bidirectional fashion with self-efficacy beliefs. Amongst other factors, Bandura (1977, 1997) described performance accomplishments to be most influential for self-efficacy, with repeated successes enhancing self-efficacy, and repeated failures lowering it. A similar bidirectional relationship is suggested between parenting self-efficacy and parenting behavior, in which parenting self-efficacy not only acts as a predictor for parental behavior, but also as a consequence (Jones & Prinz, 2005). In support of this proposition, parents of children who were more difficult to care for

(e.g., difficult temperament) had lower levels of parenting self-efficacy (Coleman & Karraker, 1997; Porter & Hsu, 2003; Teti & Gelfand, 1991). Because parenthood – in general – is interwoven with parenting challenges that may bring about success and failure experiences, the strong association between performance accomplishments and parenting self-efficacy makes it hard to examine the unique and independent effects of other sources that may be associated with parenting self-efficacy as well, such as mood states or parents' own childhood experiences (Bandura, 1997; Coleman & Karraker, 1997; Jones & Prinz, 2005). Assessments during first-time pregnancy are therefore valuable, because both parenting experiences as well as child characteristics could not have influenced parenting self-efficacy expectations yet.

Parenting Self-Efficacy and Mood Symptoms

According to Bandura (1997), self-efficacy is linked to physiological arousal as well as to the negative thoughts, ruminations, and attributions that are characteristic of mood states (i.e., depressive and anxiety symptoms). Research on the relation between postpartum parenting self-efficacy and depression generally supports this link, finding that the two concepts are negatively associated (Cutrona & Troutman, 1986; Haslam, Pakenham, & Smith, 2006; Teti & Gelfand, 1991; Weaver, Shaw, Dishion, & Wilson, 2008). However, studies which focus on pregnancy are more scarce and report more divergent effects. Two studies found that depressive symptoms were negatively associated with parenting self-efficacy during pregnancy (Porter & Hsu, 2003; Zayas, Jankowski, & McKee, 2005), whereas Leerkes and Burney (2007) found no association. Porter and Hsu (2003) also examined anxiety symptoms, besides depression, and found that higher anxiety was related to lower prenatal parenting self-efficacy. Except for the latter study, it is remarkable that less attention is paid to anxiety, relative to depression, as a prenatal predictor of parenting self-efficacy. From a clinical perspective, assessments including both depression and anxiety more precisely reflect new parents' adjustment problems (Matthey, Barnett, Howie, & Kavanagh, 2003). Theoretically, feelings of uncertainty about the controllability of important events play a key role in anxiety, whereas depressive symptoms are related to inefficacy and negative outcomes that are perceived as unavoidable (Alloy, Kelly, Mineka, & Clements, 1990; Mineka, Watson, & Clark, 1998). Both people with anxiety or depression may therefore build up less trust in their future parenting abilities, although it remains unknown whether cognitions specific for anxiety or depressive symptoms are more important to the prediction of parenting self-efficacy during pregnancy. Chapter 2 reports on a study examining the unique contribution of anxiety and depressive symptoms to the development of parenting self-efficacy in anticipation of parenthood.

As already mentioned, social cognitive theory suggests that the relation between self-efficacy and mood symptoms (especially depression) goes in both directions (Bandura, 1977). Bandura (1977) argued that emotional arousal and mood states may provide information for people to determine their self-efficacy. In anticipation of stressful or challenging experiences people may become aroused by repetitive, ruminative anxious thoughts about their uncertain ability to deal with forthcoming situations (Bandura, 1977). In addition, people with anxious or depressed moods may look to past and future events through a pessimistic filter, which may adversely affect their perceived efficacy (Bandura, 1989, 1997; Bower, 1983). Vice versa, low self-efficacy could also contribute to mood symptoms. People with low self-efficacy have more difficulty to get past failure experiences and tend to ascribe them to their own shortcomings, which strengthens their feelings of inefficacy and, in turn, increases their vulnerability for distress and depression (Bandura, 1989, 1997).

The parenting literature has not fully incorporated the notion of bidirectionality between mood symptoms and parenting self-efficacy. To examine whether the association between parenting self-efficacy and mood symptoms is part of women's adaptation to parenthood, longitudinal studies are needed. Until now, only a few studies have examined the association between prenatal mood symptoms on postpartum parenting self-efficacy, corrected for earlier levels of parenting self-efficacy (Leerkes & Burney, 2007; Porter & Hsu, 2003). Another study predicted postpartum depressive symptoms from prenatal parenting self-efficacy, corrected for prenatal depressive symptoms (Olioff & Aboud, 1991). Although the studies of Porter and Hsu (2003) and Olioff and Aboud (1991) provide some evidence for a negative association between parenting self-efficacy and mood symptoms in the transition to parenthood, the studies do not indicate the direction of influence between the two concepts. Chapter 3 of this thesis examines longitudinally the direction of effects between parenting self-efficacy and anxiety or depressive symptoms with respect to changes in the transition to parenthood. By including assessments during pregnancy and at 3 and 12 months postpartum, it was possible to investigate whether prenatal as well as postnatal parenting self-efficacy contributed to change in both parenting self-efficacy (stability effect) and anxiety or depressive symptoms (cross effects) until 1 year postpartum, and vice versa for prenatal and postnatal mood symptoms. Together, Chapters 2 and 3 thoroughly examine the interrelations between parenting self-efficacy and anxiety or depressive symptoms during pregnancy and in the transition to parenthood. These studies may not only provide us with more knowledge on the mechanisms explaining women's (positive or negative) adaptation to parenthood, but may also inform prevention and

intervention activities for new parents with high mood symptoms or low parenting self-efficacy.

Own Childhood Experiences and Adaptation to Parenthood

If parenting self-efficacy and mood symptoms are intertwined as expected based on the social cognitive theory, similar etiological factors may underlie changes in parenting self-efficacy and mood symptoms over time. Both in the development of depression as well as self-efficacy, childhood experiences are thought to be important (Bowlby, 1973; Coleman & Karraker, 1997; Gotlib & Hammen, 1992). Based on interactions with caregivers, children develop ideas and expectations of how trustworthy others are and how competent and lovable they view themselves. If sensitive care is provided, children more likely build up trust in themselves and in others, as well as a sense of general efficacy and worthiness (Bandura, 1997; Bowlby, 1973; Leerkes & Burney, 2007). Bowlby (1973) speaks in this context of the development of “internal working models” or “mental representations” which may further direct thoughts, feelings and behaviors in adulthood. With respect to self-efficacy, Bandura (1977) argued that effective behaviors that are modeled by others may generate expectations of success (“*Vicarious/modeling experiences*”). People who experienced successful parenting in childhood may therefore be more confident about their abilities to care for a child of their own (Leerkes & Crockenberg, 2002).

Remembrances of parental warmth were found to be associated with higher postpartum parenting self-efficacy and less depressive symptoms (Crockenberg & Leerkes, 2003; Leerkes & Crockenberg, 2002), whereas the opposite was found for adverse childhood experiences (Caldwell, Shaver, Li, & Minzenberg, 2011; Cole, Woolger, Power, & Smith, 1992; Madigan et al., 2014). Not much is known about the impact of abuse experiences on changes in parenting self-efficacy and mood symptoms from pregnancy to the postpartum period. Two studies found that childhood rejection (Crockenberg & Leerkes, 2003) or sexual abuse (Madigan et al., 2014) were related to less decrease in depressive symptoms across the transition to parenthood. Thus, adverse childhood experiences may be more salient for women if they become mothers themselves, increasing the risk for a more negative adjustment to parenthood. However, instead of single types of adverse childhood experiences, such as sexual abuse, multiple forms of abuse may be even more predictive of problematic psychological functioning (Edwards, Holden, Felitti, & Anda, 2003; Finkelhor, Orrarod, & Turner, 2007). Chapter 4 of this thesis therefore included an assessment of the effect of accumulated adverse childhood experiences, instead of single types of exposure, on women’s changes in

parenting self-efficacy, depressive symptoms and anxiety symptoms from pregnancy to three months postpartum.

Current Challenges and Adaptation to Parenthood

Although it is informative to know more about the adaptation to parenthood for women exposed to childhood adversity, it does not provide us with a clear understanding on the particular challenges that go along with parenthood and with the way in which at-risk women deal with these challenges. Challenges for new mothers may vary as based on temperamental difficulty of their infant. Although infant crying is arousing for all parents in and of itself, it may become even more stressful if infants are difficult to soothe or if crying is excessive. Consistent with social cognitive theory (Bandura, 1977, 1997), new parents who are confronted with infant difficult temperament, such as low soothability or high negative reactivity, may interpret infant behaviors as negative performance feedback and may feel that they fall short in providing effective care for their infants, which will negatively affect their psychological adjustment and sense of competence. Several studies focused on the postpartum period indeed found that infant difficult temperament was associated with decreased parenting self-efficacy and increased symptoms of anxiety and depression (e.g., Britton, 2011; Cutrona & Troutman, 1986; Leerkes & Crockenberg, 2002; Porter & Hsu, 2003). However, few of these studies examined the effects of infant temperament in the context of maternal risk characteristics, such as mothers' adverse childhood history, while the combination of adverse childhood experiences and infant temperament may create interactive effects that even further explain parental adjustment (Crockenberg & Leerkes, 2003).

Chapters 4 and 5 report on two studies which examine the interaction of effects from mothers' own adverse childhood history and infant difficult temperament on divergent pathways of parenting self-efficacy (Chapters 4 and 5) and mood symptoms (Chapter 5) in the transition to parenthood. The main difficulties of testing interaction effects between maternal and child characteristics in early parenthood are that mothers' perceptions of their infant's temperament are influenced by self-perceptions and also by parenting behaviors. In order to mitigate these problems, infant temperamental difficulty was simulated in an experiment (the Cry Response Task, see Verhage, Oosterman, & Schuengel, 2013), so that all women were exposed to similar child characteristics. This task was employed during first-time pregnancy to exclude the possibility that parenting experiences influenced task responses and to facilitate between-subject comparisons. Chapter 4 describes a study which used the experiment to compare first-time pregnant women with and without reported childhood abuse regarding their adjustment of parenting self-efficacy in response to infant temperamental difficulty.

However, because the experiment is not a perfect reflection of the real parenting situation, a similar interaction effect was examined as a predictor of women's adaptation in parenting self-efficacy from pregnancy to postpartum in response to the challenges provided by temperamental characteristics of their own infants. In this study (Chapter 5), the unique and interactive effects of accumulated adverse childhood experiences and infant temperament were also investigated with respect to changes in anxiety and depressive symptoms across the transition to parenthood. Chapter 4 and 5 give more insight into the risk processes that underlie a more negative adaptation to parenthood with respect to both parenting self-efficacy and mood symptoms.

Research Design

The studies included in this thesis have been performed as part of Generations², a study on pregnancy and parenthood aimed to gather insights into the differential ways in which women adapt to parenthood and the ups and downs new parents experience during this period. Generations² consists of a longitudinal cohort study involving questionnaires from pregnancy to one year postpartum and more extensive sub-studies consisting of home visits and lab visits.

Longitudinal cohort study. For the longitudinal cohort study, pregnant women were recruited in collaboration with midwives in Amsterdam and surrounding areas (The Netherlands), at a Dutch pregnancy fair, and via the Generations² website (www.generaties2.nl). Women were eligible to participate if they were pregnant with their first child and if they had a good enough proficiency of the Dutch language to fill out the questionnaires. Questionnaires were sent by mail to participants at 12, 22, and 32 weeks of pregnancy, and at 3 and 12 months postpartum. If questionnaires were not returned and/or included missing items, women were phoned or emailed. Questionnaires on parenting self-efficacy, depressive symptoms, and anxiety symptoms were assessed repeatedly at each prenatal and postnatal assessment, so that changes in these constructs could be measured. The specific questionnaires were Dutch versions of the Self-Efficacy in the Nurturing Role questionnaire (SENR; Pedersen, Bryan, Huffman, & Del Carmen, 1989), the Beck Depression Inventory II (BDI-II; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Van der Does, 2002), and the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970; Van der Ploeg, Defares, & Spielberger, 1980). Further, women filled out a questionnaire on demographics at the start of the study, and the Infant Behavior Questionnaire (IBQ; Rothbart, 1981) in order to measure mothers' perceptions of infant temperament at 3 months postpartum. Questionnaires on pregnancy-related anxiety, parenting stress, delivery and

breastfeeding, and social support were also assessed as part of the longitudinal cohort study, but not used in the current thesis.

Extensive sub-studies. From the longitudinal study, several women were contacted for participation in extensive sub-studies including home visits and lab visits during pregnancy and parenthood. For the sub-study referred to as the “at-risk subgroup”, women were approached if they reported on experiences with youth care, a psychiatrist, or a psychologist before the age of 18. In addition, recruitment for the at-risk subgroup took place in cooperation with youth care institutions and youth services for participation in both the questionnaires and home visits. Women with professional support experiences were selected for the at-risk subgroup, because these experiences were expected to be associated with having witnessed or observed less competent or even abusive parenting by own parents. Eligible women were contacted by phone to plan an informed consent visit if they had given permission to be approached. If participants were younger than 18 years old, informed consent was also obtained from parents and/or guardians. Another sub-study, referred to as the “normative subgroup”, included all women who lived in the vicinity of Amsterdam and gave informed consent for the extensive study. Response rates for both sub-studies was approximately 50%. Women were excluded from these sub-studies if they had a prenatal diagnosis for a congenital abnormality of the fetus.

As part of the sub-studies, participants were first visited between 20 and 40 weeks of pregnancy. During this home visit a trained interviewer administered the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984, 1985, 1996), which was later transcribed verbatim and rated by certified coders. Although the AAI is mainly used as a measure for people’s state of mind with respect to attachment, it was used in this thesis to assess the occurrence of childhood abuse. In addition, the Cry Response Task (CRT; Verhage, Oosterman, & Schuengel, 2013) was conducted, which was developed to assess women’s adaptation of parenting self-efficacy to infant difficult behavior. In this task, women received manipulated performance feedback on their ability to comfort a crying infant. Women were exposed to both a success and a failure condition, representing an easy-to-soothe and a difficult-to-soothe infant, after which they rated their parenting self-efficacy. The participants of the at-risk sub-study also filled out additional questionnaires during the home visit, including the Adverse Childhood Experiences questionnaire (ACE; Felitti et al., 1998). Both in the at-risk and normative subgroup, additional home visits and lab visits took place after birth that were not used in the current thesis.

Table 1 provides an overview of measures that were used for each chapter in this thesis. Additional information on the participants, procedures, and measures can be

found in the separate chapters. Chapters 2 and 3 of this thesis are based on longitudinal cohort study sample, Chapter 4 is based on the samples of both the at-risk and normative subgroup together, and Chapter 5 is based on the sample of the at-risk subgroup only. Due to the fact that data collection was ongoing while writing the studies, sample sizes of Chapters 2 and 3 varied.

Table 1. *Overview of the Measures Used in Each Chapter*

Measures	Chapter 2 (<i>N</i> = 533)	Chapter 3 (<i>N</i> = 822)	Chapter 4 (<i>N</i> = 243)	Chapter 5 (<i>N</i> = 104)
Questionnaires				
Parenting self-efficacy				
12 weeks	X			
22 weeks	X			
32 weeks	X	X		X
3 months		X		X
12 months		X		
Depressive symptoms				
12 weeks	X			
22 weeks	X			
32 weeks	X	X		X
3 months		X		X
12 months		X		
Anxiety symptoms				
12 weeks	X			
22 weeks	X			
32 weeks	X	X		X
3 months		X		X
12 months		X		
Infant temperament 3 months				X
Adverse Childhood Experiences				X
Other instruments				
Cry Response Task			X	
Adult Attachment Interview			X	

Thesis Outline

To summarize, the overall aim of the current thesis was to examine the relations between possible problems women experience in the transition to parenthood (i.e.,

parenting self-efficacy, depressive symptoms and anxiety symptoms), and factors associated with these problems.

Chapter 2 presents a longitudinal study investigating changes in parenting self-efficacy and mood symptoms over the course of pregnancy and the unique effects of depressive symptoms and (state and trait) anxiety symptoms on changes of parenting self-efficacy from early pregnancy to the last trimester. Based on Bandura's theory (1997), both anxiety and depressive symptoms were expected to be associated with parenting self-efficacy. Higher anxiety and depressive symptoms at 12 and 22 weeks of pregnancy were thought to be associated with a less positive development of parenting self-efficacy towards the end of pregnancy.

Chapter 3 describes a study that examined the direction of effects between parenting self-efficacy and (state and trait) anxiety or depressive symptoms in the context of changes taking place in the transition to parenthood. For this purpose, changes in parenting self-efficacy, anxiety symptoms, and depressive symptoms were examined from 32 weeks of pregnancy to 3 months postpartum, and from 3 to 12 months postpartum. Then, changes from pregnancy to 3 months postpartum were predicted by prenatal parenting self-efficacy and mood symptoms, and changes from 3 to 12 months postpartum were predicted by both prenatal and postnatal parenting self-efficacy and mood symptoms, in order to examine within-construct changes as well as cross effects between mood symptoms and parenting self-efficacy. A bidirectional association was expected between parenting self-efficacy and mood symptoms (Bandura, 1997). In addition, it was expected that besides prenatal effects, postpartum effects also added to the prediction of postpartum changes in parenting self-efficacy and mood symptoms.

The study described in Chapter 4 applied the Cry Response Task during pregnancy to compare women with and without reported childhood abuse on changes in parenting self-efficacy in response to infant temperamental difficulty. The hypothesis was that women who reported childhood abuse would be more affected by difficult infant behavior than women who reported no childhood abuse, demonstrated by more decreases in parenting self-efficacy in response to an unsuccessful soothing experience relative to a successful soothing experience for women who reported childhood abuse.

Chapter 5 reports on a study which examined whether changes in parenting self-efficacy and mood symptoms from pregnancy to 3 months postpartum could be predicted by women's accumulated adverse childhood experiences, their infant's temperament, or a combination of both. Both an accumulation of adverse childhood experiences and infant difficult temperament were expected to predict less adaptive changes in parenting self-efficacy and mood symptoms across the transition to parenthood. In addition, the negative effect of women's own adverse childhood experiences

on parenting self-efficacy and mood symptoms was thought to be exacerbated if their infant's temperament turned out to be more difficult.

Finally, Chapter 6 summarizes and integrates the findings of the four studies and discusses the theoretical and practical implications. Because the chapters of this thesis can be read separately, there is some overlap in the description of the studies.

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