

Title: Maternal distress: A concept analysis

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ABSTRACT

Aim

To analyse the concept of maternal distress.

Background

Although, not well developed, the concept of maternal distress has provided an important viewpoint in nursing and midwifery practice since the mid 1990s. Traditionally, understanding of maternal distress has been based on the medical model and dysfunction. The concept of maternal distress needs development so that it describes responses ranging from normal stress responses to those indicating mental health problem/s.

Data Sources

The SCOPUS, CINAHL and Medline databases were searched for the period after 1995 to the present using the keywords: 'psychological distress,' 'emotional distress' and 'maternal distress.'

Review Methods

Steps from Rodgers' evolutionary concept analysis guided the conduct of this concept analysis.

Results

Four attributes of maternal distress were identified as responses to the transition to motherhood, with the level of each response occurring along a continuum: stress, adapting, functioning and control, and connecting. Antecedents to maternal distress include: becoming a mother, role changes, body changes and functioning, increased demands and challenges, losses and gains, birth experiences, and changes to relationships and social context. The consequences of maternal distress are compromised mental health status, maternal role development, quality of life, ability to function, quality of relationships, and social engagement. The extent of the impact depends on the level of maternal distress.

Conclusion

Clearer interpretation of maternal distress provides a comprehensive approach to understanding maternal emotional health during the transition to motherhood. Acknowledging women's experiences and providing more appropriate support could alleviate some of the struggles and hardships mothers' experience.

SUMMARY STATEMENT

What is already known about this topic

- Maternal distress is an emerging concept that describes the struggles and hardships that a woman might experience during the transition to motherhood.
- Maternal distress encompasses symptoms that include a sense of isolation, aloneness, and feeling depleted.
- No conclusive definition and constructs exist for maternal distress that incorporates both normal stress responses and responses indicating a mental health problem.

What this paper adds

- Conceptual development of a notion of maternal distress that encompasses the psycho-social context, normal stress responses as well as those indicating a mental health problem.
- Identifies attributes of maternal distress as responses to the transition to motherhood that include stress, adapting, functioning and control, and connecting.
- Clarity in interpreting maternal distress as a comprehensive approach to understanding maternal emotional health.

Implications for practice and/or policy

- Clearer understanding of maternal distress will inform better approaches to providing appropriate health care for mothers experiencing maternal distress, by considering personal, relational and psycho-social context factors.

Keywords: anxiety, concept analysis, depression, midwifery, mothers, nursing, stress

INTRODUCTION

The purpose of this concept analysis is to develop a conceptual understanding of maternal distress (MD). We aim to extend the work of Barclay (1996, 1997) and Nicolson (1999) to firmly establish MD as a phenomenon that provides a new, alternative and women-centred approach for understanding women's psychological health in the transition to motherhood, develop a more comprehensive understanding and definition of MD, and inform care and support provided by nurses and midwives. A clear conceptual understanding of MD is important because the transition to motherhood is a universal experience for childbearing women. Recent and increasing international research in the area of maternal emotional health (Whiffen et al. 2005, Buist et al. 2006, Saurel-Cubizolles et al. 2007, Beck 2008a, Beck 2008b, Kim et al. 2008, Maina et al. 2008) has shown there is a need for greater clarity in understanding defining and interpreting MD, to guide research, practice and policy.

Women's psychological health in the transition to motherhood has traditionally been viewed with a bio-medical focus on anxiety, depression and dysfunction. Barclay and Lloyd (1996) argued that existing approaches denied recognition of and exposure to the real experience of women in the transition to motherhood. They proposed a need for alternate views that consider women's social contexts and the changes impacting on their lives. Work by Barclay and colleagues (Rogan et al. 1997, Barclay et al. 1997) identified that distress among mothers was a distinct phenomenon that warranted its own term 'maternal distress'. This phenomenon was identified as being different to the concept of 'psychological distress' (Ridner 2004), because MD occurs during the transition to motherhood, a time when women experience great physical, social and emotional change. Although the notion of MD has been well received by health care professionals seeking a more comprehensive approach to understanding the transition to motherhood, as a concept it has not been fully developed to encompass the psycho-social context, normal stress responses as well as responses indicating that there could be a mental health problem. Therefore, in this concept analysis of MD we seek to provide clarity and insight into the phenomenon in order to inform the practice of nurses and midwives. As the first paper identifying the concept of MD was published in 1996, this study draws on empirical work after this period to ascertain the extent of knowledge

about MD; highlight some of the confusion surrounding common terms used to describe MD, such as 'stress', 'anxiety', 'depression', 'depressive symptoms', 'antenatal depression', 'perinatal depression' and 'postnatal depression'; and to clarify the concept of MD.

BACKGROUND

The concept 'maternal distress' describes a viewpoint of maternal emotional well-being based on related works about the experiences of first time mothers (Rogan et al. 1997, Barclay et al. 1997). MD is more than psychological distress, a concept described by Ridner (2004), as it encompasses symptoms that include a sense of isolation, aloneness, and feeling depleted (Barclay and Lloyd 1996). This sense of distress comes from not having enough time to work things out, not feeling ready for the transition to motherhood, and a realisation that life will be altered and never be the same again. While not specifically using the term MD, Nicolson's (1999) study also described this distress in the transition to motherhood as a response to losses that were necessary for re-integration and personal growth. Although both studies link MD to challenging the mothers' resources for healthy adaptation to motherhood, no conclusive definition and constructs for MD were offered.

Prior to the arguments offered by Barclay and Lloyd (1996) and Nicolson (1999), maternal emotional wellbeing was viewed in a negative light and explained as an illness-dominated condition, usually associated with psychological morbidity. Postnatal depression is frequently used to embrace degrees of severity of depression in the transition to motherhood, and has been classified as maternity blues, non-psychotic depression and psychotic depression (Boyce and Stubbs 1994, Beck 2008a, Beck 2008b). There has also been recent recognition that acute anxiety disorders affect new mothers. A growing number of studies have identified trauma symptoms and acute post-traumatic stress disorder as a condition affecting maternal emotional wellbeing (Menage 1993, Wijma et al. 1997). Ayers and Pickering (2001) reported on post-traumatic stress disorder as a continuation of what had already occurred in pregnancy. Another study by Gamble and Creedy (2005) reported on the co-morbidity of depression and acute anxiety in postpartum women. Despite the usefulness of applying distinct diagnoses to emotional conditions related to the perinatal period, the complex human

experience of women in transition to motherhood is not fully captured. It can be argued that only using distinct diagnostic terms to describe women's emotional conditions during the transition to motherhood provides a fragmented approach to understanding maternal emotional responses.

The predominantly biomedical viewpoint on MD in the literature generates several terms to describe maternal emotional wellbeing, including: depressive symptoms (Saurel-Cubizolles et al. 2007, Dipietro et al. 2008), perinatal depression (Buist et al. 2006), anxiety (Dipietro et al. 2008), stress (Saunders et al. 2006), (Grazioli and Terry 2000), distress (Armstrong 2002) and unhappiness (Romito et al. 1999). Confusion is created by using these terms interchangeably, frequently with little explanation or definition. At first glance, it would seem that these terms refer to different emotional responses experienced by women. However, on close examination very little explanation is provided to indicate how these experiences differ from each other. Stoppard and McMullen (1999) suggested that a new perspective is needed to explain women's emotional experiences following childbirth more comprehensively. A suitable way of doing this is through a concept analysis of MD.

To formalise this analysis, Rodgers' (2000) evolutionary view, mostly based on the works by Toulmin (1972) and Wittgenstien (1968), was used. Using Rodgers' approach, concepts are considered as dynamic, fuzzy, context dependent and purposeful. Moreover, development of the concept of MD is compatible with foundational philosophical views in nursing and midwifery that regard reality and human beings as constantly changing, and that these changes are influenced by a host of contextual factors. MD, the term used by Barclay suggests that the experience of becoming a mother can be distressing for many women within western cultures. To clarify the constructs within the concept of MD and make it meaningful to nursing and midwifery, development was needed to ensure the concept effectively reflects the reality of contemporary women. To this end, Rodgers (2000) prescribed six steps, which do not necessarily need to be followed in specific order. These steps are: identifying the concepts and connected expressions; identifying and selecting a sample for data collection; collecting the data and identifying the attributes of the concept and contextual

basis of the concept and variations; analysing the data for the above characteristics; identifying an exemplar of the concept; and identifying the implications/hypotheses for further development of the concept. For the purposes of this study an exemplar will not be used, as the concept MD has already been determined, although not clearly developed.

DATA SOURCES

Data were collected from a search of SCOPUS, an abstract and citation database for research literature and web quality sources providing the broadest available coverage of scientific, medical and social sciences literature. Key words used for search terms included 'emotional distress', 'psychological distress' and 'maternal distress'. These key terms were combined with descriptor terms - pregnancy, motherhood, mothers, antepartum, postpartum and childbearing. The area of interest was limited to nursing, midwifery, medicine, psychology and allied health literature. A further search of the CINAHL and Ovid MEDLINE databases was undertaken as a safety net measure. Literature was limited to English language documents in the period after 1995 until the present, because this was when the concept of maternal distress was first used, and to English language documents. To ensure this restriction did not limit analysis, seminal papers earlier than 1995 were referred to where they informed analysis. Close to 1500 articles were found, which highlighted the frequent use of the notion of MD within the health and medical literature (613 articles in MEDLINE). Literature relating to physiological maternal responses, maternal mental health disorders, and to specific at-risk groups such as adolescent mothers, mothers with breastfeeding problems, mothers with complications, and mothers with high-risk infants were excluded from the analysis, because it was considered that these were confounding factors for MD. Articles were restricted to the period from pregnancy through to the first year postpartum, because this was considered the period of transition to motherhood.

The final number of articles consisted of 24 articles (8 from medicine, 9 from nursing and midwifery, 3 from allied health, and 4 from psychology). Each of the papers was number coded and analysed using an adapted version of Cavanagh's (1997) procedure for content analysis. The articles were read and analysed by the researcher EE. A table was designed to

include areas of analysis: definition of MD, affecting factors, essence of MD, consequences of MD, any research tool used and what was measured. Repeated and systematic analysis took place together with the second researcher WS. A final conceptual structure was reached when MD could be explained conceptually by antecedents, contributing factors, attributes and consequences.

RESULTS

Guided by Rodgers' (2000) steps of analysis, examination of the retrieved literature allowed identification of a cluster of attributes that comprise MD (Table 1). The framework also enabled clarification of antecedents of MD, contributing factors to MD, and consequences of MD.

Definitions of maternal distress in the literature

Analysis of the 25 articles showed little or no clear definition of MD distress as a concept. Variation in terms used were noted including: 'distress', 'mental distress', 'distressed mood' 'psychological distress', 'emotional distress', 'prenatal maternal stress' and 'depressive and anxiety symptoms'. The majority of studies used the term psychological distress, with only a few providing a definition or interpretation. Hedegaard et al. (1996) referred to psychological distress as a response to stress rather than a response to a stimulus. Kearns et al. (1997) defined the term as one that does not have a psychiatric connotation, but rather is based in common everyday usage to describe severe pain, sorrow or anguish. The most persuasive definition was given by Thome and Alder (1999), who provided clear constructs of distress relating to the experience of childbearing and parenthood, which was comprised of many dimensions relating to associated concepts such as parental stress, depressive symptoms and anxiety. Other researchers such as Sjostrom, Languis-Eklof and Hjertberg (2004) and Zachariah (2004) approached MD from a wellness perspective and no definition was given. Despite the range of terms used to describe the phenomenon, an underlying theme of stress and distress was common to all studies. Furthermore, a variety of standardised tools have been used to measure levels of stress, ranging from normal everyday concerns to anxiety and depression.

Antecedents

According to Walker and Avant (2005) antecedents are what must occur before the concept being described takes place. Close examination of the literature revealed major conditions that are necessary to bring about MD. For MD to occur, firstly, a woman must be going through the transition to motherhood. This life event is of major significance to women as it involves change from a known and current reality to a new and unknown reality (Mercer 2004). Secondly, role changes occur as a woman relinquishes her previous roles to take on the maternal role, which involves developing a maternal identity and maternal behaviours suited to the developmental stage of the growing fetus/infant (Rubin 1984, Mercer 1985, Mercer 1995). Thirdly, these changes are accompanied by physiological changes to the body during pregnancy that continues following childbirth, which alter a woman's functional ability (Tulman and Fawcett 2003). Fourthly, this transition is accompanied by increased demands, challenges and disruptions such as developing the knowledge and skills to care for the infant/s, changes to employment status, balancing multiple roles, changes to the woman's own routine and that of her family, and managing social activities while maintaining responsibility for the infant. While there are gains, such as the pleasure and joy of having a new baby and social recognition in the new role of mother, there are also losses such as loss of income, loss of sleep, loss of freedom, loss of control and loss of sense of self (Barclay et al. 1997). Finally, during the transition to motherhood there are changes in a woman's relationships with her child/ren, partner, family and friends.

Contributing factors

Although identifying the contributing factors is not an essential step in Rodgers' evolutionary view, they provide an important understanding of the context in which MD occurs and further insight into the nature of MD. Contributing factors impact on whether or not a woman experiences high or low MD. Following from Mercer (1995), complex contributing factors need to be understood from the woman's perspective and as taking place within the woman's context: that is, they make up her individual and social world. A woman's experience of the transition to motherhood occurs within a changing context, both her immediate setting/s and

the larger social context. From this present study, the retrieved articles measured a variety of factors and their contribution to MD: maternal characteristics, reproductive factors, health and wellbeing, functioning, infant characteristics, relationships and social factors. Table 2 shows these variables and underlines the complexity of the context that surrounds a woman's transition to motherhood.

Attributes of maternal distress

During the transition to motherhood, a woman goes through a time of instability, confusion and even distress, to an eventual period of stability (Ridner 2004). MD can range from normal and common feelings of distress through to responses indicating a mental health problem. Four interlinked attributes were noted in this study and are conceptualised as responses to the transition to motherhood: stress, adapting, functioning and control, and connecting.

Stress responses

The vulnerable period of physical and psychosocial change during the transition to motherhood is frequently associated with stress and distress. Stress is viewed as a non-specific response by the body to an internal or external demand, which may have a good or bad effect (Selye 1976). Bad stress may be referred to as distress that is harmful or unpleasant. Selye (1976) pointed out that, although distress has a negative effect, it can be managed, converted or dissipated. Ridner (2004) reasoned that as a concept, distress could be described as occurring on a continuum from a positive (stress and worry) to a negative end point (anxiety and depression). This perspective is consistent with views of distress in the oncology literature where it is referred to as a maladaptive psychological functioning when faced with a stressful life event; and occurs along a continuum with normal and common feelings of stress and vulnerability at one end, sadness and fears that can incapacitate such as depression and anxiety at the other end (National Comprehensive Cancer Network 2002).

Distress usually occurs when there is change accompanied by instability, uncertainty and vulnerability as seen in major life transitions (Meleis 2007). Lee and Gramotnev's (2007) study on 7619 Australian women showed that those going through major transitions such as

motherhood were more inclined to be stressed and depressed compared with women undergoing residential changes or making a life change to combine work and study. Although distress tends to be seen as a negative experience, evidence shows that distress can also work positively. A study by Miles et al. (1999) on 67 women whose infants had life threatening illnesses reported that although mothers experienced distress they also experienced personal growth; that although they were depressed, it had a limited impact on adjustment to their role.

Adapting responses

A dynamic process of maternal role development occurs during pregnancy and following childbirth (Rubin 1984, Mercer 1985), in which the mother develops a new identity and set of behaviours as mother to her child. While transition to motherhood may provide an opportunity for enhanced wellbeing, it also exposes the woman to potential risks, problematic or delayed recovery or maladaptive coping (Meleis 2007). A woman's experience of transition to motherhood is shaped by the nature, conditions and meanings of change in her life (daily life, health, relationships, environments). Rubin (1984) referred to this change as an irreversible alteration from the onset of pregnancy to the completion of the childbearing experience. Adaptation to this change requires a woman to undertake two important tasks: to maintain intactness of self and her family, and to endeavour to integrate the child into the self and family systems. Barclay and Lloyd (1996) reported that adjustment to parenthood, particularly to the first child, is of enormous consequence, but noted that this is often ignored by women themselves, and nurses and midwives. Mercer's (2004) review highlighted a greater awareness of the transition to motherhood experience and the challenges that contemporary women face. Western women today are frequently faced with a return to work after a short maternity leave, which may interfere with adaptation. Kiehl and White (2003) reported in their study that women from Sweden and Norway adapted better than U.S. women, possibly because they had more time to adjust during their longer maternity leave. Another study by Gameiro et al. (2008) found that, when compared with multiparous women, primiparous women experienced greater adjustment difficulties after birth, reporting more anxiety at 2-5 days and at 8 months postpartum. Qualitative studies have revealed that women seek to eliminate distress during their adjustment to new parenthood by planning and being

organised. Martell (2001) reported that adjustment became easier for women when they worked on a 'new normal', which involves developing an appreciation for their own body, settling in, and establishing a new family. However, when a woman is distressed or depressed, adjustment is delayed. Barr (2008) reported that women in this situation complained of feeling 'stuck', incomplete and had a difficult role development experience.

Function and control responses

Functioning is the extent to which a woman is able to maintain her usual activities, including personal care, household, social, community, childcare, occupational and other activities during pregnancy and following childbirth (Tulman and Fawcett 2003). An ability to function is an important component in the adaptation to motherhood. Women can find a reduced capacity or inability to function disturbing. Studies have shown that recovery after childbirth is gradual and takes place over a period of six months (Fawcett et al. 1988, Tulman and Fawcett 1991), while others have shown that recovery from childbirth over this period is not complete (McVeigh 2000b). Few studies have investigated women who have difficulties in their functioning capacity after childbirth. One Australian study reported a significant negative relationship between functioning and anxiety (McVeigh 2000a). Another study by Troy (1999) reported that fatigue played a considerable role in poor maternal functioning after childbirth. Although women maintained full functional activity in infant care and household duties, fatigue and low energy levels had a negative impact on other activities such as self-care, occupational, social and community responsibilities.

Gaining and maintaining control of one's functioning is important for women's psycho-social adjustment. Control in the midst of change re-establishes order and gives a woman a sense of mastery over her world (Rubin 1984, Mercer 1995), and a sense of satisfaction with the childbearing experience. To achieve control for women means spending time in preparation, orientation and organisation (Rubin 1984). Sjostrom et al. (2004) provided another perspective and argued that coping capacity is important during the transition process, providing a woman with a sense of coherence and wellbeing.

Connecting responses

Connectedness provides a sense of meaning, wellbeing and worth (Jordan 1995). Moving towards further connections is at the centre of human development. Transition to motherhood can challenge a woman's sense of connection in her established world of relationships and networks, which include family, relatives, friends, social, work and community groups (Rubin 1984). Maternal attachment, which is the lasting affection for and commitment to the infant, begins in pregnancy and continues following childbirth (Rubin 1984). Disconnection from others is a main source of suffering, and disconnection from self can cause distress and a sense of isolation (Mauthner 2003, Nicolson 2003). For many women, their partner and immediate family are the main source of support, providing a context for confidence and resourcefulness. Studies have shown that partners and significant others are positively linked to maternal mental health and how women adapt to motherhood. Emmanuel et al. (2008, 2009) in their study on 605 Australian women found that marital status and length of relationship were significantly related to maternal role development, with social support being the most important influencing factor.

What makes for connectedness is a positive social climate for women that includes emotional, instrumental, informational and appraisal aspects of support (Hinson Langford et al. 1997). A woman feels emotionally disconnected when she does not feel accepted, loved, needed and respected whilst a lack of tangible goods and services can make a woman feel instrumentally disconnected. The social climate in middle class western culture that idealises the 'good' mother can have a negative impact (Nelson 2003). Adolescent, single or working mothers may measure themselves against these standards and feel that they fall short.

Derived definition of maternal distress

Analysis of the concept of MD led to an emerging definition of MD: MD is a woman's response to the transition to motherhood, which includes - changes to their bodies, roles, relationships and social circumstances; birth experiences; and the demands, challenges, losses and gains associated with being a new mother. MD occurs on continua in four domains: stress responses, adaptation responses, function and control responses and

connecting responses. The severity of MD varies from low to high. A woman with low MD will experience stress, worry and concern as she seeks to: adapt to her new role; adjust to her new social situation; gain control and mastery in caring for herself and her infant; and develop or maintain relationships and connections with her baby, partner, relatives and friends. A woman with high maternal distress will be: unhappy, anxious or depressed; find it difficult to adapt to her new mothering role or changed social circumstances; feel out of control, fatigued, unable to seek and use information and resources, and find it difficult to care for herself and her infant; and feel alone, disconnected, disengaged or have difficulties in her relationships with her infant, partner, relatives or friends. Factors that impact on the severity of MD are: maternal characteristics, reproductive factors, health and wellbeing, previous functioning, infant characteristics, relationships and social factors.

Consequences

Consequences are what follow from an instance of the concept (Rodgers 2000). Analysis of the literature highlighted six areas in which a mother could be compromised, and that could have an impact on the level of MD experienced. These areas included: mental health status, maternal role development, quality of life, ability to function, quality of relationships and social engagement.

Poor mental health can be an outcome of MD if it is severe enough to result in depression, maladaptation, dysfunction and disconnection. Although MD may have mental health outcomes that range from feeling drained and alone to feeling anxious and depressed (Barclay et al. 1997, Nicolson 1999, Mauthner 2003, Nicolson 2003), it may not always be a negative experience, but rather an inherent aspect of any life transition . MD can be compounded by the extent and nature of contributing factors a woman experiences during the transition to motherhood.

MD that includes depression, maladaptation, dysfunction or disconnection may impact on the level of attachment to the infant (Fowles 1998) and maternal role development. For instance, depressed women tend to perceive their infants to be temporarily difficult compared to non-

depressed women (McMahon et al. 2001). Similarly, poor emotional health can lead to poor self-concept and self-esteem resulting in dissatisfaction in the performance in the role as mother (Fowles 1998).

MD can lead to a low quality of life with the woman feeling dissatisfied with her overall sense of wellbeing, including physical and psychosocial health, functioning status and family relationships (Tulman and Fawcett 2003). MD can hamper a woman's ability to adapt to changes in pregnancy and after childbirth. From a sample of 96 women, Tulman and Fawcett reported that 63% of them took up to six months to recover postnatally, whilst Saurel Cubizolles et al. (2000) reported mothers had more health symptoms at 12 months than at 5 months postpartum. More than half of the women complained of symptoms such as backache, anxiety and tiredness. Fatigue is often a result of severe distress, which can lead to hospitalisation of the postnatal woman. Fisher et al. (2002) surveyed 109 women with infants who had been admitted to a mother and baby unit. All the women were dealing with a difficult infant or had partner relationship problem, were depressed, had impaired efficiency and clarity of thinking.

Relationships, particularly the husband/partner, mother/daughter, previous child and mother/infant are critical to emotional wellbeing (Mercer 1995). The quality of these relationships can be adversely affected by MD. Zachariah (2004) reported that positive emotional wellbeing in early and late pregnancy was related to strong attachment to the partner, with women who felt supported experiencing less life stresses and negative events. However, changing social trends have shown increasing numbers of women without partners, which could impact on the transition to motherhood. Findings from Edge and Roger's (2005) study showed that women were more likely to be depressed because they were lone parents, had less close and confiding relationships and fewer sources of social support. With today's mobile population, many women also feel the absence of their own mother who can play a crucial role in nurturing the new mother. Morgan et al.'s (1997) study found that depressed women often missed having a sympathetic confidante, a role usually played by the woman's mother.

Social engagement is essential for a mother, because it provides acceptance for her child into her primary (e.g. family) and secondary affiliative and instrumental (e.g. workplace, community) groups (Rubin 1984). It is from this social engagement a woman receives nurturance, support and confidence, and feels resourceful and creative in the transition to motherhood. Maintaining and sustaining this engagement can be difficult when there is MD. Women can feel unsupported and alone, such as when a partner is working long hours or not working at all, family members are too busy to maintain a level of engagement, or when a woman is too tired and exhausted to attend to social aspects of her life (Kiehl et al. 2007).

DISCUSSION AND CONCLUSION

The conceptual structure of MD describes a woman's response to the transition to motherhood and, therefore, extends the work done by Barclay and colleagues (Barclay and Lloyd 1996, Rogan et al. 1997) and Nicolson (1999) identifying that motherhood is not as smooth as early literature indicates. The concept of MD offers a multi-dimensional perspective comprised of responses related to stress, adapting, functioning and control, and connecting. This conceptualisation of MD acknowledges and normalises feelings of distress, struggle and hardship experienced by women in response to the transition to motherhood, rather than labelling or problematising them. It provides a comprehensive framework for understanding and addressing the needs of women in the transition to motherhood, by situating the new mother within her psycho-social context, identifying the attributes that constitute MD, and clarifying the issues that could impact on or increase MD.

The concept of MD sits well within Meleis's (2007) theory on life transitions. Meleis et al. (2000) argue that transition to motherhood is a non-linear movement between several spaces, places, situations and identities. This movement entails instability, confusion and distress leading to an eventual period of stability. During this time the mother looks for meanings connected to the event, becomes engaged, and makes changes as needed to reach a point of stabilisation. However, personal, community and societal conditions can hamper this transition. MD as a concept is also well positioned within Mercer's (Meigan et al. 2006) middle range theory on maternal role development. Mercer (1995) proposes that the motherhood

experience is nestled within a complex system (microsystem, exosystem and macrosystem) within which personal and contextual factors interplay may enhance or hamper the adjustment to the maternal role.

This concept analysis of MD and has limitations. First, the literature review was based on publications after 1995 related to women with an uncomplicated transition to motherhood. An extended period and wider criteria might have added further information.

Providing a definition for MD affords a better understanding of maternal emotional experiences for women in contemporary society. The conceptual structure of MD provides clarity and therefore contributes to the body of knowledge regarding maternal emotional health and offers an approach to guide nurses and midwives in their practice and research. An example in practice is a distressed single mother who is finding it difficult to care for herself and her infant (functioning response) and not accessing available services (disconnecting response). The focus of care then would be to assist connection and function. Contextual factors such as a lack of role models in her life could be addressed by linking her into new mothers' groups. For researchers interested in maternal health, conceptual development of the concept of MD provides a theoretical basis for investigation into maternal distress in response to the transition to motherhood, and the relationship of MD to factors such as maternal role development, quality of life, functioning, and engagement. Acknowledging of women's childbearing experiences could alleviate some of the struggle and hardship.

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Antecedents	Contributing Factors	Attributes: Maternal Distress (MD) as a Continuum	Consequences
<ul style="list-style-type: none"> • Becoming a mother • Role changes • Body changes and functioning • Increased demands and challenges • Losses and gains • Birth experience • Changes to relationships and social context 	<p>Maternal characteristics Education Single status Age Employment status Socio-economic status</p> <p>Reproductive factors Parity Unwanted pregnancy Previous perinatal loss Unplanned pregnancy Adverse childbirth experience</p> <p>Health and wellbeing Health status Predisposition Unhappy High or low expectations Body image Poor self-esteem & self-confidence Poor role models</p> <p>Functioning Readiness for childbearing Physical and social functioning ability Lifestyle</p> <p>Infant characteristics Excessive infant crying Baby with problems Preterm infant</p> <p>Relationships Partner relationship Relationship with own mother Relationship with infant and other children</p> <p>Social factors Social support and networks Stressful life events Domestic violence</p>	<p style="text-align: center;">Low MD High MD</p> <p style="text-align: center;">Stress Responses</p> <p>Stress (Worry, concern, mild anxiety) Anxiety and Depression (Unhappy, low mood, highly anxious)</p> <p style="text-align: center;">Adapting Responses</p> <p>Adaptation (Maternal role development) Maladaptation (Poor maternal role development)</p> <p style="text-align: center;">Function and Control Responses</p> <p>Functional (Coping, in control, mastery, using information and resources, energy, caring for self and infant) Dysfunctional (Not coping, out of control, inability to seek and use information and resources, fatigue, inability to care for self and infant)</p> <p style="text-align: center;">Connecting Responses</p> <p>Connected (Relationship with infant, partner, relatives and friends, seeking support within the community and society) Disconnected (Feeling alone, disharmony in relationships, inability to seek support)</p>	<p>Impact on:</p> <ul style="list-style-type: none"> • Mental health status • Maternal role development • Quality of life • Ability to function • Quality of relationships • Social engagement

Table 1: Maternal distress: A conceptual structure

Author/s; Design; Sample; Country	Contributing Factor	Responses
Hedegaard <i>et al.</i> (1996) Prospective n =5868 women at 16 and 30 weeks of pregnancy; Denmark	Low gestational age of infant; parity; age; previous adverse outcomes	Stress: low, moderate and high distress
Kearns <i>et al.</i> (1997) Prospective: n =80 women at 36 weeks of pregnancy and 10 weeks postpartum; New Zealand	Predisposition to distress; unplanned pregnancy; age; education status; financial; social support; youth	Connecting: relationship with partner; sense of relatives and friends withdrawing
Morgan <i>et al.</i> (1997) Intervention study; n= 34 couples with young child/children; Australia	Relationship with partner, own mother, infant/s	Stress: anxiety and depression Adapting: maternal role development
Thome & Alder (1999) Intervention study; n =78 women at 2-3 months postpartum; Iceland	Health problems, role conflict, difficult infant	Adapting: maternal role Function and control: fatigue Connecting: impaired interaction with infant
Romito <i>et al.</i> (1999) Survey; n = 1353 women at 12 months postpartum; France and Italy	partner relationship; baby with problems; financial status, employment status	Stress: worries, unhappiness Function and control: inability to seek employment Connecting: lack of significant others
Morse <i>et al.</i> (2000) Prospective; n = 357 primiparous women; 26 and 36 weeks of pregnancy, 1 and 4 months postpartum; Australia	Relationship functioning; age; low social support; negative mood in partner and self	Stress: anxiety and depression, negative mood; Function and control: gender role stress Connecting: poor relationship with partner, family and friends
Grazioli & Terry (2000) Prospective; n = 65 primiparous women in 3 rd trimester of pregnancy, 6 weeks postpartum; Australia	Partner's support and approval	Stress: depression Adapting: negative performance evaluation
Armstrong (2002) Cross sectional; n = 103 couples across; United States of America (USA)	Previous perinatal loss; parity	Stress: anxiety Adapting: maternal attachment
Des Rivières-Pigeon <i>et al.</i> (2003)	Low education; single mother; employment	Stress: sad, depressed

Comparative; n = 1663 women at 12 months postpartum; France, Italy and Canada		
Sjöström <i>et al.</i> (2004) Prospective; n = 177 women at 12 and 36 weeks of pregnancy and at 8 weeks postpartum; Sweden	Age; marital, employment & educational status; level of obstetric risks; wellbeing	Stress: anxious, depressed Adapting: sense of cohesion
Zachariah (2004) Prospective; n = 49 women in early and late pregnancy; USA	Gestation in pregnancy; relationship with mother; life events	Adapting: attachment to the fetus Connecting: seeking of emotional social support, tangible aid & resources
Morse <i>et al.</i> (2004) Intervention; n = 243 women at 26 weeks pregnancy; 6 weeks, 4 and 9 months postpartum; Australia	Level of postnatal education; social support; previous experience of motherhood;	Stress: levels of distress, depression
Walker <i>et al.</i> (2004) Prospective; n = 382 women at 6 weeks, 3, 6, and 9 months postpartum; USA	Ethnicity; energy intake; physical activity; breastfeeding; lifestyle; smoking; body image	Stress: weight related stress
Rahman <i>et al.</i> (2004) Case controlled; n= 172 at 9 months postpartum; Pakistan	Mental health; ability to provide nutrition, under-nutrition; parity; socio-economic status	Function and control: impaired ability to nourish infant
Edge & Rogers (2005) Mixed qualitative and quantitative; n = 200 women at 6-12 months postpartum; United Kingdom (UK)	Ethnicity; socio-economic status; life events	Stress: lack of emotional stability; tearfulness; anxiety; irritability; depression Adapting: financial independence; material independence Function and control: sense of mastery; control Connecting: sense of isolation, sense of weakness
Lee & Gramotnev (2006) Prospective; n = 1064 women at 1 and 4 years after childbirth; Australia	Socio-economic status; employment status; lifestyle; physical symptoms, rurality; level of education	Function and control: coping and resilience
Saunders <i>et al.</i> (2006) Prospective; n = 298 women; At early, middle and late pregnancy; USA	Medication; analgesia; risk of caesarean section; marital status; income; parity	Stress: high and low anxiety
Husain <i>et al.</i> (2006) Survey; n = 149 women at 12 weeks postpartum; Pakistan	Social support; stressful life events; age; education; employment; domestic violence	Connecting: sense if disconnection with social network
Lemola <i>et al.</i> (2007) Survey; n = 374 women at 6 weeks and 5 months	Adverse childbirth experiences; partner support; labour pain/ physical discomfort	Stress: depression; trauma Adapting: sense of fulfilment; psychological

postpartum; Switzerland		adjustment Connecting: supportive relationship with partner
Saurel-Cubizolles <i>et al.</i> (2007) Survey; n = 2799 women within 12 months postpartum; France	Age; education; employment; living arrangements; marital status; occupation	Stress: anxiety and depression
Rondó & Souza (2007) Survey; n = 852 women at 30-36 weeks of pregnancy; Brazil	Age; education; income; employment; parity; toxic exposure; support	Stress: worried; anxious
McConachie <i>et al.</i> (2008) Intervention; n = 185 primiparous women in pregnancy and 1 month postpartum; UK	Parity: daily hassles; partner status	Stress: daily hassles Connecting: feeling alone
Dieter <i>et al.</i> (2008) Cross sectional; n = 90 women (Study #1), n = 32 women (Study #2) in 2nd and 3 rd trimester; USA	Foetal wellbeing; low socio-economic status	Stress: anxiety and depression
Dipietro <i>et al.</i> (2008) Prospective; n = 137 women in latter part of pregnancy, 6 weeks and 24 months postpartum; USA	Parity; age; education; marital status	Stress: anxiety and depressive symptoms
Emmanuel <i>et al.</i> (2009) Prospective; n = 630 women; 36 weeks of pregnancy, 6 and 12 weeks postpartum; Australia	Age, marital status, parity, childbirth education classes, delivery mode, length of relationship, length of postpartum hospital stay, social support	Stress: distress Adapting: negative self-evaluation in the maternal role Connecting: sense of being unsupported

Table 2: Maternal distress responses and contributing factors