Motherhood transition through an existential lens

meaning making among
Danish first-time mothers

PhD thesis
Christina Prinds
Institute of Public Health
Faculty of Health Sciences
University of Southern Denmark
2014
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Moderskab, tro og eksistens – eksistentiel menings-dannelse hos danske førstegangsmødre

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Research Unit of General Practice
Institute of Public Health
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University College South Denmark
Midwifery Programme
PhD Thesis

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Included papers

This thesis is based on the following papers presented in the order in which they were written:

Paper 1
Prinds C, Hvidt NC, Mogensen O, Buus N,
Making existential meaning in transition to motherhood—A scoping review. Midwifery 2014, 30(6): 733-741

Paper 2
Prinds C, Hvidtjørn D, Mogensen O, Skytte A, Hvidt NC,

Paper 3
Prinds C, Hvidtjørn D, Mogensen O, Skytte A, Hvidt NC,
Prayer and meditation among Danish first-time mothers – a questionnaire study. Submitted for Evidence-Based Complementary and Alternative Medicine, October 2014

The present thesis includes an introduction to the research field, the above-mentioned papers, discussion of study findings and conclusions of the papers as well as suggestions for research and clinical implications.
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Preface

A Danish singer songwriter proclaims: There is no answer as big as the question. If truth lies in questions, then this PhD journey has truly succeeded. The journey has been characterised by numerous questions and interpretations leading to new appealing questions, which seemed necessary to explore.

It all began with end-of-life. Getting to know research focusing on the existential dimension of being human and sick was what set it off. The research area of spirituality and health was unknown to me until 2007, where I became aware of the area, and that for some patients and relatives coming to terms with existential concerns was of highest priority during sickness and pain, sometimes considered more important than physical symptoms. Being a midwife I had several times seen existential reflections being raised in subtle ways both among women, fathers and colleagues. Suddenly I became aware of this subtlety about existential concerns related to childbirth. And it made sense that I intuitively had memorised a hymn when I finished as a midwife in 1999: to be able to add significance to for example emergency baptism situations, if no one else could. I simply discovered a research field providing language and reflections and perspectives, which could add significance to the timeless act of childbirth.

Being a midwife, a mother and interested in the existential dimensions of life myself, I am aware of the encompassed and sometimes tacit knowledge I bring with me in doing research. To be open about presumptions and motivations hopefully strengthens the project in increasing transparency from the beginning to the end, making it even clearer why research focusing on end-of-life obviously had to lead to research focusing on beginning-of-life.

Even when finishing the project new questions arise - questions underlining how little research has been done about possible existential reflections during motherhood transition. Underlining also how a PhD journey can generate new findings, new perspectives, but most of all raise awareness of how many questions still need to be asked:
There is no answer as big as the question
There is no victory as big as the lesson
You go on and you see where your detours will take you to
There is no power like understanding
There is no beginning like an open ending (1)

Christina Prinds
Odense, November 2014
## Abbreviations

<table>
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<th>Abbreviation</th>
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<tbody>
<tr>
<td>FT-mother</td>
<td>Mother who gave birth at full term</td>
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<tr>
<td>PT-mother</td>
<td>Mother who gave birth preterm</td>
</tr>
<tr>
<td>HCP</td>
<td>Health Care Professional</td>
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<tr>
<td>PTSD</td>
<td>Post Traumatic Stress Disorder</td>
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<td>PTG</td>
<td>Post Traumatic Growth</td>
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<tr>
<td>EVS</td>
<td>European Values Study</td>
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<td>WVS</td>
<td>World Values Study</td>
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<tr>
<td>ISSP</td>
<td>International Social Survey Programme</td>
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<tr>
<td>NICU</td>
<td>Neonatal Intensive Care Unit</td>
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<td>DSOG</td>
<td>Danish Society of Obstetrics and Gynaecology</td>
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<tr>
<td>CAM</td>
<td>Complementary and Alternative Medicine</td>
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Introduction

There were days and deliveries where I couldn’t believe it either, but this was and will always be the most commonplace of miracles. An event at once familiar and phenomenal, timeless and immediate. Briefly making angels of us all. Jenny, Call the Midwife (2)

Becoming a mother is often experienced and framed as a wondrous miracle - and at the same time an everyday event happening to so many women that it cannot claim its uniqueness from being a rare life event happening to the few chosen ones. Jenny, a main character from the BBC historic production of life and childbirth in particular in East London in the 1950s, puts it beautifully in the introductory citation. Childbirth has been understood as a wellness experience, a transformation, a journey, a dance and even a sacrament (3-6). In Denmark, approximately 58 000 women gave birth in 2012 (7). The market of magazines, books and films are flooded with reflections, stories and advice about how to live as a mother. This market in itself indicates a strong sense of existential life change when becoming a mother.

Likewise, the moment of a person dying can be experienced and framed as timeless, at once a commonplace, yet supernatural phenomenon. In Denmark, approximately 52 000 people died in 2012 (8). Beginning and ending of life encircle life in several ways. The field of palliative care in Denmark is concerned about end of life and life-threatening diseases, and on the basis of the definition from WHO (2002), the Danish national guidelines describe physical, psychological, social and spiritual dimensions as important in palliative care (9). The national Danish guidelines on maternity services are also based on the WHO definition from 1948 pointing to health as complete physical, mental and social well-being (10, 11). However, existential or spiritual care is not mentioned in the national guidelines on maternity services, even though bringing new life into the world, as well as dying, can be interpreted as a highly existential act, both acts encircling life.

Compared to many other countries, Denmark is one of the safest places in the world to become a mother. Nonetheless, we are still very occupied with the physical dimensions of childbirth, both clinically and research-wise, and with risks involved in childbirth (11). We are still in the early stag-
es of exploring how childbirth and becoming a mother may change life existentially. How does life change, when becoming a mother and what does that mean?

This thesis explores whether becoming a first-time mother in Denmark may actualise considerations related to existential meaning in life. Furthermore, it is explored whether there are any differences in actualisation when trying to make existential meaning of life among mothers of full-term and preterm born children. The research aims will be elaborated during the background sections.

The thesis consists of three individual, yet interrelated papers. Firstly, we identified existing research about the significance of motherhood transition analysed through the theoretical perspective of Emmy van Deurzen (12). Secondly, attitudes about making meaning of life existentially were explored among Danish first-time mothers (either having given birth at full-term or preterm), and thirdly, religious and/or spiritual practices among the same mothers were explored. The aim of the thesis is interdisciplinarily founded in research from the fields of spirituality and health, from traditional health science, and humanistic and social sciences such as religious studies, psychology, sociology and anthropology. The fundament and contextualisation are presented in the background section. The pragmatic scientific theoretical approach is introduced, followed by methods sections of the three studies, which are separately introduced. First, the methods, findings and reflections of the scoping review (Study 1) are presented, followed by descriptions of the methods, analyses, ethics, findings and reflections of the two studies conducted on the basis of the national questionnaire survey among Danish first-time mothers in 2011 (Studies 2 and 3). Finally, perspectives related to clinical and research implications are presented.
Background

To introduce the background and the fundament of exploration of motherhood transition in Denmark four sections will be introduced. Each section will focus on research about a specific topic: Firstly, motherhood transition in general among full-term mothers; secondly, among preterm mothers; thirdly, about what is meant by existential meaning-making; and finally, how it appears in Denmark.

Childbirth and motherhood as existential milestone

Transition into motherhood is a significant life event. To explore if motherhood transition actualises considerations related to existential meaning-making, the different conceptions of childbirth are important to clarify. Sociological, anthropological and psychological research has explored early motherhood or childbirth with other foci than a biological one.

As a point of departure, sociological research, on the basis of data from a follow-up study among Californian respondents, points to an increase in religiosity when having children (13). Also Danish sociological research highlights, on the basis of Danish responses to the European Value Study (EVS 2008), how parenthood may strengthen religious orientation, but not spiritual or more secular existential orientations. Survey participants with children attach greater significance to God and find the church to meet spiritual needs, compared to those without children (14). Early anthropological research (in 1909) points to childbirth as a life event, which in most cultures is surrounded by special rites stressing the importance of the event (15). This is stressed also by others, for example Etowa et al.: “...there are more cultural rituals and practices found around childbearing than around other life events.” (16, p. 28). The American anthropologist Davis-Floyd criticises the American organisation of maternity services for reducing childbirth into a technocratic birth regime, where personal experiences and feelings are not valued except as anecdotal (4). She describes the transitional status of birthing women to be at once both powerful and vulnerable, and underlines this transitional phase to be more than individual experiences. Rather they “...reflect and reinforce core values of society.” (4, p. 305). On the basis of narrative interviews Miller (2005)
argues how the storyline of motherhood needs to be challenged, since expectations and experiences rarely fit because of the lacking ‘instinctive’ knowledge of mothering (17, p. 160). The discrepancy of expectations and experiences is stressed elsewhere (18, 19). Also Klassen (2001) challenges the contextualisation of childbirth. On the basis of interviews with home birthing mothers representing a wide range of beliefs in the North Eastern US, she argues how a religious language is used to trump the medical language (20, p. 216).

Psychological research has also been concerned with motherhood. Since the 1970s a new paradigm of infant psychology emerged, taking a step away from the psychoanalytical tradition having dominated the area since World War II (21). A new more empirically founded tradition arose, dominated by for example the infant psychologist Daniel N. Stern. He highlights how a new way of navigating in life develops through motherhood transition (22). Motherhood is not merely a transitional period, but a continuous change in navigation, due to the ‘motherhood constellation’, a special mental approach where the mother gives preferential treatment to all issues related to motherhood (22, p. 33). Brudal (2000) articulates, on the basis of existential philosophy, motherhood transition as a ‘borderland’ (Prinds’ translation), in which insecurity and new borders and rules arise (23).

In health research motherhood has been explored, especially in relation to the event of giving birth, e.g. birth experiences and birth satisfaction (24-26). Motherhood transition has been explored more sparsely in health research, and if so, often in trying to distinguish between health and sickness for example in relation to postnatal depression, post-traumatic stress disorder (PTSD) or post-traumatic growth (PTG) (27-30). Motherhood transition has, furthermore, been explored in relation to experiences expected to be traumatising, for example giving birth preterm (31, 32).

Being a significant life event, childbirth carries the potential for changes in life orientations and psychological adjustment, both positively and negatively. A recent review indicates that 1-2% of new mothers suffer from PTSD. The most important triggering risk factor was the women’s subjective distress in labour (28). Reversely, childbirth also carries the potential for growth and in studies measuring PTG it was found that up to 50% of the mothers experience moderate PTG following
childbirth (27, 33). Sawyer et al. stress that growth does occur after childbirth, which is described as a ‘developmental’ life event contrasted by ‘traumatic’ events, which have been studied previously in relation to PTG. Previous research has thus suggested that more severe events stimulate greater growth because they are more likely to challenge fundamental assumptions (33).

When it comes to existential meaning in motherhood transition in a longer and non-dichotomous perspective, where not only ability to distinguish between health and sickness is important, research remains sparse. On the basis of a recent literature review focusing on joy in childbirth, Crowther et al. (2014) stress the scarcity of literature focusing on meaning in life, although the unexplored dimension “... may paradoxically be the most meaningful and important.” (26, p.162). Spirituality as a concept interpreted in different definitions has been explored briefly in relation to childbirth. Midwives have accentuated the link between childbirth and spirituality (6, 34, 35), and so have new mothers (36, 37).

The focus in this study is a non-dichotomous perspective of first-time mothers’ experiences of existential meaning in motherhood transition in a secular society. Mothers are in the scope, because motherhood is assumed to be different from fatherhood or a female partner (17, 38). I assume, as well as the Danish psychologist Else Christensen, who in an early psychological Danish investigation of first-time parenthood (1980) stressed, that the extreme bodily changes a woman undergoes during pregnancy, childbirth and the postnatal period influence her ideas and considerations of meaning in life, in ways different from her partner (39). The biological dimension of this life event is not in the focus of the study, but still it is an important argument for focusing on mothers’ attitudes to existential meaning-making considerations, contrary to first-time fathers or partners’ attitudes.

The concept of motherhood transition is used in this study to stress the focus of the mothers’ perspective of childbirth, not to undermine the fact that much research using the notion of childbirth more than the notion of motherhood uses the perspective of the mother as well (40, 41). The concept of motherhood transition used in this study is to be understood as a process focusing on the period of change that motherhood can be seen as. Christensen argues for the use of a con-
cept other than crisis, covering first-time motherhood. The concept of crisis seems to have strong connotations to for example the psychoanalytic understanding of crisis as a relatively short time period and also implying certain situations to cause crisis. Motherhood does cause personal challenges she argues, but by implying the concept of crisis, the individual experiences are disguised and trivialised (39). Transition is suggested by Murray Parkes (1971) to describe “…major changes in life space, which are lasting in their effects, which take place over a relatively short period of time and which affect large areas of the assumptive world.” (42, p. 103). He as well stresses the negative connotations related to the concept of crisis, even in Erikson’s distinction between ‘developmental’ and ‘accidental’ crisis (42). Mosbæk (1996) highlights transition processes to being perhaps initiated by crisis but not being in nature pathological. Transition underlines the importance of the process of change – a long-term and radical process of change released by an epoch-making event (21), a concept covering universally human transfers: for example from not being a mother into being one. Motherhood transition is understood not merely as a progressive transitional phase during birth defined by the cervical dilation (43), or as a sociological understanding of giving birth as a ‘rite of passage’ (15), but as a full biological, psychological, social and existential transition lasting sometimes years, being interpreted differently by different women. The focus in the study is, however, the significance related to existential meaning-making caused by motherhood transition in all its dimensions.

**Preterm birth as existential milestone**

Today, most preterm born children survive what they would have died from earlier (44, p. 75). A child is born preterm, if born before 37 completed weeks of gestation (44, p. 19). In Denmark, the rate of preterm birth has been almost constant during the last 5 years. In 2012 6.6% of newborns were born prematurely (7). Preterm birth has risen worldwide during the last 20 years, and it is currently estimated, that globally 15 million newborns are born prematurely every year (45). Precursors of preterm birth, if not due to medical reasons, are multifactorial and comprise both biological and social factors, e.g. multiple pregnancy, maternal age, infections or violence against women. The cause of spontaneous preterm birth remains unidentified in up to half of cases (44, p. 32). According to the World Health Organization there is a need for a global effort to reduce preterm birth, which in most high-income countries is the leading cause of child death (45). The re-
port ‘Born Too Soon: The Global Action Report on Preterm Birth’ is the WHO initiative to document the global burden of preterm births and facilitate a reduction in these. It is stressed, that “Parents of premature babies are both those who experience the greatest pain and those who hold the greatest power for change” (44, p. 88). However, the ‘pain’ mentioned is not addressed systematically in the report, as it seems the focus is on prevention, whereas the possible pain and challenges from living with a preterm born child are not in the scope of the report. A recent meta-analysis discussing key components for preterm infants stresses the importance of focusing on the mother as well in future intervention programmes in order to reduce pain and complications (46).

Giving birth preterm is described as traumatic and life changing in different ways. It is understood as an ambiguous loss, as the parents mourn the full-born child they expected, while simultaneously fearing for the life and future of their preterm baby (47-49). Not only attachment to the newborn can be problematic, but also missing the experience of a full pregnancy and a non-dramatic birth can feel like a loss (50). There may be feelings of confusion and ambiguity postpartum as a result of being a relative of your own newborn child now hospitalised in the neonatal intensive care unit (NICU): “Am I really a parent? If my child is in the hospital, how do I act as a parent?” (50, p. 310). Also feelings of guilt, shock and the invisibility of loss are stressed (51, 52). The infant psychologist Daniel N. Stern describes not only the child, but also ‘the motherhood constellation’ as premature, when giving birth preterm. The important skin-to-skin contact (‘the slow dance of the fingertips’), when getting to relate concretely to the newborn, is problematic due to the wall of the incubator (53, p. 39, 173). Apart from a complex start of parenthood, also the unpredictability of not knowing about long-term consequences of the child being born preterm is problematic (53, p. 168).

Contradictory results are found in studies comparing experiences of childbirth among mothers of preterm and full-term children. A recent interview study among parents of 202 infants in Southern Holland, born either at full term or preterm, found that experiences and perceptions of for example labour and relationship with the child are more negative the lower the gestational age of the infant is (54). In a longer perspective Kersting et al. found post-traumatic experiences to be higher among mothers of preterm children 14 months after birth (55). In a 6-year perspective, a Finnish
interview study found negative recollections of birth to be more present among mothers of preterm children (n=28) than among mothers of full-term children (n=39). They also found these negative perceptions to be associated with behavioural and emotional problems in the children (56). A recent questionnaire study from Qom (in Iran) found mothers of preterm infants to be of higher risk of mental disorders, than those of full-term infants (57). On the contrary, an Israeli questionnaire study investigating post-traumatic growth found parents of preterm infants to report higher levels of PTG one month after birth, compared to parents of fullterm children (58). This was also found in a longitudinal study measuring PTG one year after birth among mothers of preterm twins (n=64) and full-term single and twin infants (n=147). Mothers of preterm twins experienced higher personal growth than those of full-term children, even though the PTG mothers in the early postnatal period also reported higher levels of negative feelings toward their infant (59).

When addressing motherhood transition related to preterm infants, cultural sensitivity seems important due to psychosocial expectations and understandings of motherhood (60). In Denmark, a survey study among 66 parents of preterm newborns showed 30% of those to suffer from PTSD, either clinically or sub-clinically (61). A qualitative study among 9 parents of 7-10 year-old children, who were extremely preterm born, found the parents’ descriptions to be characterised by experiences of progress, love and joy, despite the deep distress and fear they also reported (62).

Despite highly qualified medical support for preterm newborns in Denmark, a qualitative study has pointed to the longing to be regarded as a ‘real mother’ in the NICU (63), and a recent PhD thesis pointed, among other issues, to the experience of distance between the mother and her newborn (64).

Overall, existing healthcare research points to both traumatic and life-challenging consequences of giving birth prematurely, and psychological theory points to challenges related to attachment and developmental psychology, when giving birth prematurely. The focus in this study is on attitudes and considerations related to existential meaning-making, and based on the assumption of preterm motherhood being potentially a traumatic event.
**Existential meaning-making – conceptual framework**

Research in the field of public health proposes explicit basic concepts of health. Health is in this project based on the WHO definition of health from 2002, which has been restated in a recent global atlas of needs related to end-of-life: Health is related to physical, psychosocial and spiritual challenges and experiences, and ought to be met like this (65). The spiritual dimension of health has been amended to the original 1948 declaration of health, in relation to the WHO effort in the field of palliative and end-of-life care. The original 1948 definition is: “*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.*” (66)

Even when referring to well-being as an important measure of health, most research in maternity services seems to focus on outcomes of morbidity and mortality. Critical researchers have sought to change definitions of health as well as the focus in today’s healthcare system into actually focusing on enhancing health or at least not to be health deteriorating (67-69). The philosopher Ivan Illich (1926-2002) introduced the concept of cultural iatrogenesis, which carries changes in the individual’s ability to cope in life, as a result of the medicalisation of health care. Through focusing primarily on measurable changes in morbidity or mortality, this cultural iatrogenesis is delivered: “*Rather than being healthier, which always means being more autonomous, your client, through your care, becomes more dependent, more a patient*” (70). As noted by Downe and McCourt, in caring for women in the natural life process of motherhood transition, even defining normal childbirth except as an absence of technical intervention seems problematic (71). It is fundamental in this thesis that health is not merely to be understood as an absence of disease, but as well-being formed by physical, psychological, social and existential dimensions.

The outcome of the empirical research or the literature review conducted in the thesis is not concerned with neonatal mortality or morbidity, but with making existential meaning when becoming a mother. Health is viewed through an existential lens implying several dimensions of life, including physiological, psychological, social and existential dimensions (72). This four-dimensional view of life and health is seen for example in the work of the existential philosopher Emmy van Deurzen (73). On the basis of the Swiss psychiatrist Ludwig Binswangers work of three different life dimensions, she added a fourth dimension. Binswanger (1881-1966) was a pioneer in the field of existential psychology and believed life to have three ‘modes’: Umwelt (physical), Mitwelt (social) and Eigenwelt (psychological). These modes were by van Deurzen in 1984 supplemented by ‘Überwelt’
(a spiritual dimension) to stress the importance of ideals in life, strong enough to live or die for (73, 74). The four dimensions of van Deurzen were useful in the literature review of the thesis in clarifying the focus on existential and spiritual matters of life being present in relation to motherhood transition. They are elaborated in the first paper. A four-dimensional view of health is sometimes implicitly seen in health research, mainly related to end-of-life (75, 76), or more explicitly recently in suggesting a bio-psychosocial-spiritual model of health (77).

Figure 1 Four-dimensional view of life and health ad modumBinswanger/van Deurzen.

Making existential meaning is in this thesis a fundamental aspect of motherhood transition, as it is understood as an existential transformative process relating to the importance of fundamental life questions and their importance in new mothers’ lives. Existential meaning is founded in a European existential tradition emphasising a woman’s obligation to take a stand in life (78). An existential approach is perhaps foremost philosophical and the Danish philosopher Søren Kierkegaard is said to be the father of existentialism. Just as Socrates (469 BC-399 BC), whose mother was a midwife and who saw his philosophy as a maieutic process (a process helping a fellow thinker to have his own thoughts come to life, similar to that of helping a mother to bear a child), also Kierkegaard is said to have employed a maieutic approach in his work, as he for instance assisted the birth of individual subjectivity in forcing his contemporaries to think for themselves (79, 80, p. 33). One of
the important issues drawn from existentialism is the matter of life itself – being in the world and clarifying what it means to be alive (74, 81, 82). This can be done through reflective concerns related to life’s vulnerability, to what creates meaning in life or to a transcendent dimension. Different existential writers have developed overviews of which fundamental life questions one must respond to (78): One very widespread overview is developed by the American psychiatrist Irvin Yalom (1931-). He operates with four basic life conditions bearing the same power in life, as Freud once saw in the power of sexuality: 1) we are going to die, 2) we are alone in pivotal moments in life, 3) we have the freedom to choose our life, and 4) we seek to create meaning in life, where meaning is not beforehand (78, 83).

Seeking meaning and meaningfulness in life has also more recently been defined and described by the Austrian psychologist Tatjana Schnell, who on the basis of the SoMe questionnaire measures meaningfulness in life in different and secularised settings. She defines meaningfulness as: “... a fundamental sense of meaning, based on an appraisal of one’s life as coherent, significant, directed, and belonging.” (84, p. 487). According to her, existential indifference or low meaning of life is not necessarily related to crisis of meaning (85). Her definition of meaningfulness has inspired the understanding of meaning in the project. When exploring considerations related to existential meaning among first-time mothers in this thesis, considerations are to be understood as more than careful thinking (86), but include feelings and acts as well. Moreover, the term consideration is used in the understanding that the mere act of responding to the survey conducted in itself requires considerations, independently from responding to items consisting of knowing, doing or being. These dimensions will be elaborated in the next section.

**Existential meaning-making in research in a secular society**

Research in the field of spirituality and health is often characterised by different understandings of the concepts of religiosity and spirituality, and in the light of the growing body of research the American psychiatrist Koenig, among others, encourages researchers to define and contextualise the use of concepts (87). The concept of spirituality has gradually come to cover not only aspects of life related to a transcendent dimension, but in different settings also other individualised aspects as self-awareness, search for meaning, happiness or well-being (87, 88). Therefore many
researchers encourage contextualised and specific research in the field of spirituality and health. Measuring spirituality or religiosity in general or even as precisely defined concepts is impossible, since they always vary according to cultural influx (87, 89-92).

The link between spirituality and health is increasingly explored. Koenig and colleagues analysed over 1600, primarily American, studies and reviews and found mainly positive relationship between religion or spirituality and physical or mental health (93). All though this extensive work has been criticised, it indicates the growth of research in the field – albeit mainly in the US. Because of the secularisation in Northern Europe, the existing US terminology and research methods may not be applicable in a more secular European context.

In 2008 the American sociologist of religion Phil Zuckerman singled out Denmark and Sweden to be the most secularised countries in the world, after having interviewed more than 150 Danes and Swedes about life values and religion (94). Denmark is a modern society and one of the richest societies in the world with a strong welfare system, ensuring Danes to live free in a well-established democracy with a high level of social security. Modernity is what secularises a society, which is then followed by disappearance of religion (95). Danes seem to be ‘cultural Christians’ (94), and according to the 2008 European Value Survey only 10% go to church regularly (once a month or more). In 2008 64% believed in God, in 1981 69% did. In 2008 traditional religious beliefs like life after death were reported by 36%, whereas in 1981 it was reported by 32%. Danes believing in the concept of ‘sin’ was reported by 21% in 2008 and by 37% in 1981. Only 7% characterise themselves as atheists in 2008 (95). The support for conventional beliefs has changed, some beliefs have decreased, and some have increased. On the basis of data from the EVS and World Value study (2008), it is argued that Danes hold more individualised religious beliefs, where concepts of forgiveness and self-development will become more important than concepts of sin and hell. Hence the importance of religion may increase at an individual level, when trying to make meaning of life existentially (95). At a general level, Denmark can be characterised as a secular society, where public religiosity and shared beliefs diminish, but religion at an individual level seems stable like one out of many ways of making meaning of life (95, 96).

In general, Danes seem to like to be religious privately and peacefully. According to a recent PhD
thesis focusing on coping among Danish Pentecostals, Toudal argues with Ravn Iversen how Danes actually do not like “… pious Christians, confessed atheists, fanatic spiritualists or provocative pastors.” (96, p. 13). Being private may also lead to some religious passivity? In an interview study Rosen found Danes to have an ‘unpacked’ religion: “I’m a believer, but I’ll be damned if I am religious.” (Rosen 2009). Earlier understandings of the same religious ideas consisting of both community and practices have decreased, and among her informants who were based in the Copenhagen area, religion seemed much more fragmented. This leads her to a definition of their religious belief as ‘unpacked’. In this definition of the Danes’ unpacked religion she argues how especially negative life events may actualise and develop personal beliefs (Rosen 2009). This is also what la Cour found, when he argued that Danes hold a ‘crisis religiosity’ (97). Through crisis Danes may experience an actualisation of religion, but because it is subtle and inarticulate in everyday life, it may be hard to unfold and employ as a coping resource (97).

The Danish researchers la Cour and Hvidt proposed in 2010 a conceptual framework of existential meaning-making, with the aim of distinguishing between secular, spiritual and religious meaning-making (98). On the basis of a literature review and discussions in the Danish research Network of Faith and Health, the aim was to develop a heuristic tool fitted to a secular North European context. In a ‘Meaning-Making Matrix’ they combined three sociological dimensions with the concepts of secular, spiritual and religious. The three sociological dimensions of J. Fishman, knowing, doing and being, which he used in 1980 to explain different dimensions of ethnicity, are found to have good explanatory power to explain different psychological dimensions of existential meaning-making in Denmark as well (99, 100). Knowing relates to cognitive knowledge of for example ones religious fundament, and adds authenticity to the term doing, relating to for example religious practice. Being relates to the significance of a certain way of creating meaning and is concerned with the personal experience of meaning. The purpose of trying to differentiate between the three is to clarify how humans, when trying to create meaning, draw on secular, spiritual or religious resources.

Existential meaning-making is not linked merely to religious or spiritual orientations; especially in Northern Europe it is derived also from more secular orientations (98). On the basis of extensive literature search secular, spiritual and religious orientations of meaning-making are defined in
three categories, each one ranging from constructivism to definitions focusing on ‘the other’, being it nature, the transcendent or a personal God. Secular orientations could derive from humanistic values like relational aspects, creativity, nature or the courage to face life’s challenges openly, not caused by destiny or karma, but as a humanistic or secular ideal. Spiritual orientations range from matured humanistic values to a searching for inner truth or contact with a transcendent dimension. Religious orientations of existential meaning-making focus on a collective construct of symbols and/or a transcendent relation between God and the individual/community (98). The meaning-making matrix is fundamental in clarification of concepts, survey construction and analyses throughout this thesis.

The meaning-making matrix is thus visualised like this:

![Meaning Making Matrix (MMM)](image)

\[
\begin{array}{ccc}
\text{Knowing} & \text{Doing} & \text{Being} \\
\hline
\text{Secular} & & \\
\text{Spiritual} & & \\
\text{Religious} & & \\
\end{array}
\]

In Denmark, empirical research in the field of spirituality and health has been carried out among women as well as among the young population in recent years, but mainly in relation to illness. Until now no research has been conducted in this field in relation to motherhood or childbirth. In 2006, a large questionnaire survey was conducted at the Danish Rigshospitalet, showing an in-
crease in existential and religious thoughts and practice. The increase was predominantly among younger women and when illness turned worse (101). In a recent qualitative study among 21 young lymphoma and leukemia patients it was found that beliefs held valuable prior to their illness (both religious and non-religious) might be strengthened after their diagnosis (102). Ausker described one of her informants having experienced becoming a mother as a life milestone similar to her experience of leukemia (102). A survey study among breast cancer patients found a higher proportion of the participants to be believing in ‘a god or a higher spiritual being’ (83%) than the general population (approximately 65%) (103, 104). A recent interview study among 10 women with ovarian cancer was conducted during their first treatment period, where hope and spirituality were found to be important resources of meaning and comfort (105). Although some research has focused on the lives of women and young people, research in the field of spirituality and health in relation to motherhood or childbirth seems needed.

In this dissertation the link between spirituality and health is explored in relation to motherhood transition using the term of existential as the broader, encompassing secular, spiritual and/or religious domains of life. The term – and the study – is founded in a European tradition of existential psychology and philosophy: There is a strong obligation of the individual to take a stand in life, since meaning in life is not given per se in relation to concepts like identity or responsibility (78). Efforts to distinguish between and define especially the two terms religious and spiritual seem a continuous strife, since meaning changes over time, and thus is contextually and culturally bound (91). Even in a small country like Denmark, la Cour and colleagues in a questionnaire study among 514 theologians and laymen found 6 different categories of the term spiritual, reaching from ordinary inspiration in human activities to New Age ideology and incited to define in research what is meant by the term (106, 107).

The distinctions between the concepts of secular, spiritual and/or religious domains in this thesis derive from the meaning-making matrix (98). Secular thus refers to ways of making existential meaning, such as nature or creativity, not drawing on any transcendent source. Spirituality refers to an individualised search for a source of power, either in an immanent or transcendent dimension, whereas religious refers to a transcendent dimension, but as a relation between a personal God and the individual, deriving from a community sharing values. Aware of the simplification pre-
sent in segregating the concepts of spirituality and religiosity, I use these definitions in clarifying method and analysis to hinder fuzziness in the results (87). In the life of women such distinctions do not capture the richness or nuances of existential meaning-making, since most women do not categorise themselves as either one or the other, but rather draw on secular, spiritual and perhaps also religious domains when making meaning of life (98, 108). Therefore, throughout the thesis when using the concept of existential meaning-making it is to be understood as the broader concept, referring to both secular, spiritual and/or religious ways of making meaning of life. When speaking of the whole interdisciplinary field of spirituality and health, however, it refers in the thesis to the link between spiritual, religious and/or secular dimensions of existential meaning-making related to health.

The four individual sections constituting the complete background-section have introduced different aspects of the fundament of the thesis, but individually they also represent extensive research fields. The aims, scientific theoretical assumptions and methods will be introduced in the next section.
**Research aims**

The overall aim of this thesis was to explore whether existential meaning-making considerations are present among Danish first-time mothers, and whether they differ among mothers of full-term children (FT mothers) and mothers of preterm children (PT mothers). Three studies form the basis of the thesis: one literature review and two empirical and descriptive studies based on data in a cross-sectional questionnaire survey (2011) among Danish first-time mothers.

The study objectives were:

1. To obtain an overview of existing literature focusing on existential meaning-making in motherhood transition among mothers of full-term children in Western-oriented countries.

2. To investigate the intensification of attitudes related to existential meaning among Danish first-time mothers and to investigate, whether these attitudes differ between mothers who have given birth at full term and preterm, respectively.

3. To investigate practices of prayer and meditation among Danish first-time mothers, and to distinguish between mothers having given birth at full term or preterm in relation to their respective prayer/meditation practices.

**Design**

**Scientific theoretical assumptions**

The design of this research originates, as does all research, from a specific paradigm of science. Hence these scientific theoretical assumptions formed the methods used for the empirical data collection and analyses. This section is an attempt to create transparency between the scientific theoretical assumptions and the methods used.
The design of this study is rooted in a pragmatic understanding of scientific knowledge being based not only on a product of distilled facts, but rather as a result of facts, theories and vague knowledge combined into certain questions (109). Pragmatism as a scientific foundation supports the link between science and its practical consequences, even in the initial process of doing research (109). The father figure of pragmatism Charles Sanders Peirce (1839-1914) put it this way: “... a conception can have no logical effect or import differing from that of a second conception except so far as, taken in connection with other conceptions and intentions, it might conceivably modify our practical conduct differently from that second conception.” (110, §3, 196). Thus attention must be paid to the context and interpretations in which hypothesis develops, when developing research ideas and hypotheses.

The question of pragmatism is the question of abduction (110). Different from inductive hypothesis, where we are taught what to expect from research, abductive research takes anything into account, “...allows any flight of imagination” (§3, 196), to inform an explanatory hypothesis to be worthy of rank of a hypothesis (110). Abductive, widening work is founded on existing interpreted knowledge of the field, trying to bring along new elements. Thus, the result of abductive work is only the most suitable approach, when exploring preliminary possibilities, and must be tested through deductive and inductive methods alike (109, p. 264). New knowledge must be elevated from the finding of a surprising fact leading to search for explanation, into taking background knowledge of facts, theories and experience in consideration as well – which is often a long-term process (109). I started with theory and facts from the field of midwifery, facilitating certain research questions, and then settling the appropriate paradigm including clarifying theoretical assumptions and methodology, rather than starting with fixed data and settling a specific research paradigm for the study. The methods used were also determined by theory, facts, and a vague knowledge from a clinical standpoint of experiencing the existential dimension of motherhood to be neglected.

Being abductive in taking facts, theory and clinical knowledge into account, when drawing up hypotheses and deciding methodologies, characterised this study on existential meaning-making. Existential meaning-making is in this study understood as encompassing knowing, doing and being
dimensions in human life (98). It unfolds thus both bodily, cognitively, emotionally, existentially and socially. To explore the complex phenomenon of making existential meaning in life when becoming a mother, a hermeneutic-philosophical approach would seem appropriate, since it offers a natural focus on the meaning of actual lived experiences of individuals (111). When a method like questionnaire research relying on more positivistic ontological assumptions was chosen, it was for scientific as well as pragmatic reasons: Through a questionnaire survey inspired by social science it seemed possible to explore considerations and attitudes related to existential meaning-making, detecting where the attitudes of interest were hidden (112). Therefore, for two reasons, the pragmatic approach proved itself useful and meaningful, both at the onset of the PhD study period and in the analyses and interpretation of data.

First, at the start of the PhD project it was informed by theory, facts, and a vague clinical knowledge (109). Pragmatically and basically, the urge to get in touch with a clinical field that had neglected the existential dimension of health for years also directed the method. Health science/medical science is widely conducted in a positivistic paradigm, and the assumption was that research based on quantitative data and analyses therefore more easily would be picked up (113).

Secondly, through the process of constructing and testing a questionnaire, we found the results of a pilot study together with the framework of the meaning-making matrix to be informative in developing the final questionnaire. The aim of identifying attitudes and considerations related to existential meaning-making on a general level seemed appropriate after having qualitatively explored in the pilot study existential and religious considerations among mothers of children born prematurely (114). We wanted to investigate on a more population-based level, if existential meaning-making considerations were present among Danish mothers at all; we surmised research was needed, having, to a certain degree, the courage, to simplify preliminary assumption as it is done in a research design aiming for generalisability (115). Furthermore, when exploring subjects considered to be private, it may be more suitable asking on paper than in person. Zuckerman found Danes to be very non-religious when asked in open interviews, although 57% of Danes reported belief in God, either as a personal God (22%) or a higher power (35%) in the European Values Survey in 2008 (95). Furthermore, in a recent thesis about rehabilitation in cancer care, reli-
gion and faith were described as being more taboo than questions of sexuality (116). In a secularised tradition where faith and ideas are not naturally shared verbally, or language may even be lacking, interviewing could potentially feel intimidating to informants. Contrarily, answering a questionnaire with predefined questions may feel more manageable, however private the subject seems. Questionnaire research may be simplifying, although the assumptions behind an aim are always reflected in the method used, or in how you interpret and report your data. However, questionnaire research also allows you to generalise results, which seems appropriate when exploring considerations and attitudes among a large group of mothers.
Methods

As mentioned above, the thesis was based on three separate studies: One literature review (Study 1) and two empirical descriptive studies (Studies 2 and 3) based on data in a cross-sectional survey among Danish first-time mothers, who gave birth in 2010. Empirical data were gathered over a 4-month period in the autumn 2011. The three studies refer to the three individual papers enclosed this thesis.

The three studies represented in the thesis.

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Table 2
**Literature review**

Since only little is known about the subject of the thesis, a systematic literature review was conducted. It was important initially to identify research about existential meaning and motherhood transition. The literature review is Study 1.

**Scoping the scope**

To scope a scope like existential meaning in transition to motherhood in Denmark, both academic breadth and classification were needed. The method of a scoping review was chosen due to the combination of rigor and transparency in method and procedure, and at the same time flexibility in inclusion of study design (117). Since the theoretical or empirical framework about existence and motherhood transition is not well defined, the iterative and yet systematic way of obtaining an overview of the field was attractive. Pragmatically, the urge to shed light on a new field also seemed to be found in different forms of research and literature. Thus, in order not to miss concepts or understandings in research in informing the development of a questionnaire survey in Denmark, a scoping review was found appropriate (109).

In order to get an overview of the literature focusing on existential meaning-making in relation to motherhood, it became clear that when including both FT mothers and PT mothers, knowledge would be confused by gaining aspects of both traumatic and un-traumatic childbirth experiences. From initial searches we discovered fuzziness in searches when exploring existential meaning-making in relation to both groups of mothers. We found studies concerning preterm infants often focusing on the postpartum stay in NICU or coping with motherhood of a sick child, but less with what becoming a mother might mean existentially. Therefore we pinned down the research question to focus on what most mothers experience, but which has been explored the least: How do mothers of full-term babies make existential meaning in transition to motherhood in Western-oriented countries?
Search strategy

Using the patient perspective we used two strategies in the literature search, first a systematic search in three electronic databases using a building blocks search strategy, and secondly a citation pearl growing strategy. See Figure 2. The search was conducted in spring 2011.

Inclusion and exclusion criteria

The first author reviewed abstracts and papers/literature. A large number of references identified were excluded because they did not stem from original research, but from for example editorials or comments. Studies were included if they were original research papers focusing on the perspective of new mothers, conducted in a Western society and published between 1990 and 2011. They were excluded if they focused primarily on transpersonal events during birth or pregnancy experiences. Eleven papers met the inclusion criteria.
Charting the data

Data were charted due to five distinct stages proposed by Arksey and O’malley (117). All included papers had generated data via qualitative interviews, in some studies supplemented by other studies as well. In preventing a literature review to be merely a summary of literature, we synthesised the studies through the philosopher Emmy van Deurzen’s theory of four different life dimensions through which we experience, interpret and act in the world: The Umwelt, the Mitwelt, the Eigenwelt and the Überwelt (12, 118). See Figure 1.

Findings Study 1

We found many of the participants having trouble with articulating experiences during motherhood transition and suggested that the reason may be the organisation of maternity services in which the ‘technocratic’ model of care is prevailing (4). However, through the lens of existential psychology, motherhood transition can be interpreted as an existentially changing event, and to some mothers it was also clearly interpreted as a spiritual experience. When meaning-making considerations are not discussed in maternity services, we leave out an important dimension of life, missing a holistic perception of motherhood and beginning-of-life as it is seen in healthcare services in relation to end-of-life. Conclusively, we suggest that future research explores existential meaning-making contextualised, which means both focusing on secular worldviews, but also acknowledging spiritual and religious outlook on life.

Renewed search

In relation to this thesis, a new search was conducted on PubMed and Cinahl in September 2014 to search for new studies. Two new studies were located. The first one is an interview study not only with mothers, but also with healthcare professionals. On the basis of interviews with mothers (n=4), partners (n=3), and obstetricians and midwives (n=7) in New Zealand, Crowther argues how their outspoken experience of a special power and sacred nature of birth, a special mood present at birth is important to safeguard (119). The second is also an interview study, guided by feminist participatory action approach among 8 Canadian-African mothers. Childbirth was considered also
to be a spiritual event, and thus more opportunities for healthcare professionals to learn more about women’s beliefs and values are recommended (16).

**Methodological considerations and limitations**

We chose a scoping review because of an open, yet systematic way of identifying gaps in the research area of motherhood transition and existential meaning-making in Western-oriented countries. The possibility of including a wide range of study designs was attractive; still we ended up including only peer-reviewed studies all based on interviews, some of them supplemented by other methods as well. When mapping key concepts and identifying gaps we found that especially research based on qualitative methodologies proved informative. Furthermore, the scoping review focused on research around motherhood of full-term children, thus not on traumatic childbirth such as birth of a preterm child. Additionally, studies presenting other perspectives on motherhood of full-term children, for example from midwives or partners, were excluded. The idea in these exclusion criteria was to shed light on a group of mothers rarely explored in relation to existential meaning-making, namely the non-pathological, not-traumatised mothers.
Empirical studies

In Denmark, little is known about this subject, and descriptive research seemed required to identify some preliminary correlations between motherhood transition and existential meaning-making considerations. In the analyses of data from the national questionnaire survey we sought to answer the research aims 2 and 3:

2. To investigate the intensification of attitudes related to existential meaning among Danish first-time mothers and to investigate, whether these attitudes differ between mothers who have given birth at full term and preterm, respectively. We hypothesised that Danish mothers to some degree would confirm intensification of attitudes related to making meaning of life. We also hypothesised that there would be differences in responses between FT and PT mothers, as PT mothers were expected to experience a higher intensification.

3. To investigate practices of prayer and meditation among Danish first-time mothers, and to distinguish between mothers having given birth at term or preterm in their respective prayer/meditation practices. Firstly, we hypothesised that Danish mothers to some degree would confirm having prayed or meditated in motherhood transition. Secondly, we hypothesised that a larger proportion of PT mothers compared to FT mothers had prayed/meditated. Thirdly, we hypothesised that Danish mothers would connect to meditation more than prayer.

The sample of participants, the construction of the survey, and the data collection form the basis of both studies. Below, firstly the fundament is explained, and subsequently the analyses and findings of the two studies are introduced.

Sample
We obtained a sample from the Danish Medical Birth Registry of all Danish first-time mothers who gave birth before the 32nd week of gestation in 2010, and a random sample of twice the number of first-time mothers who gave birth at term (> GA 37+0). The group of PT mothers included both
very preterm children (before 32 completed weeks of gestation) and extremely preterm children (before 28 completed weeks of gestation)(44). The intention of including twice the number of mothers, who gave birth at term, was to obtain the necessary power in the analyses (120). From the Danish Civil Registration System we obtained information about address, vital status, and address or research protection status for the mothers and their children.

The Danish Medical Birth Registry (MBR) was established in 1973 and includes data on all live and stillborn children born by women with a permanent residence in Denmark since 1968. The data in the Registry is based partly on birth notifications from midwives and doctors, and partly on data retrieved by linkage to the Civil Registration System (121). Since antenatal care is free of charge in Denmark, the registry encompasses almost all pregnant woman, making the national registration of births almost complete (99%) (7). The Civil Registration System was established in 1968 and is by means of the 10-digit unique personal identification number the basis of the nationwide Danish registry system (122).

We obtained a sample of 1291 first-time mothers. The sample was based on the birth of the children with 455 children born prematurely and 910 children born at full term. Since the number of twins was higher among preterm born children than among full term, the number of full-term mothers was greater than twice the number of PT mothers. When preparing the final file, 370 mothers had an address or research protection status (28.7%), which prohibited us from contacting them, and 8 were excluded due to emigration or termination of the pregnancy before the 10th week of GA. The final file of 913 assessed for eligibility consisted of 658 FT mothers (accounting for 72% of the total sample) and 258 PT mothers (28% of the total sample). The data collection is described after the sections concerning survey construction and validation.

**Survey construction**

In the preparation of this thesis it became clear that an ‘off-the-peg’ questionnaire (a previously validated and published questionnaire) in this basic research would not adequately meet the aims (123). Other surveys have investigated satisfaction, attachment, depression, quality of life among new mothers, or personal values about childbearing (124-126). Other questionnaire studies have
also explored the field of spirituality and health among Danish patients, but with low respondent rates, possibly due to the non-fitted language and religious context used in the questionnaire (127). Pedersen uses the brief RCOPE, which consists of questions fitted to function in a religious context, as for example the US, but not fitted to a secular context as the Danish. Using questions not contextualised allows cultural comparisons, but may hinder reaching the answers of a specific research question, either because the response rate may diminish due to the feeling of non-relevance to respondents or because the answers do not contribute with new specific knowledge, but remain on a general level (91). Pedersen argues in her thesis focusing on religious coping among cancer patients, how the application of findings from a US context are problematic (127).

We developed the questionnaire on the basis of three assumptions:

1. That existential meaning-making can happen on a secular, a religious and a spiritual level. As explained in the background section, the Danish researchers la Cour and Hvidt in 2010 proposed a conceptualisation in which the existential is the broader concept, encompassing both existential philosophical values and ideas without any transcendent foundation (secular), as well as meaning orientations related to spiritual and/or religious notions (98).

2. That existential meaning-making can unfold in three dimensions of cognition, practice and importance, since meaning-making is not merely linked to reflections, but also related to practices and priorities in life. They relate to the three concepts of knowing, doing and being introduced by the sociologist Fishman (128) and have been found to have good explanatory power in the analysis of the Danish items related to meaning-making in the European Values Study (100).

3. That pregnancy, childbirth and the postpartum periods both in full and as individual periods can facilitate considerations related to existential meaning-making. Research has highlighted how the period of pregnancy may facilitate such considerations. The Norwegian researcher Lisbet Brudal uses the phrase ‘borderland’ (Prinds’ translation) in her description of the pregnancy period (23). The physician Nadia Bruschweiler-Stern uses the phrase ‘imagined child’ to describe the life-readjustment in a pregnant woman’s life, when trying to adjust the physical changes to the new way of life including the ‘real child’ she expects after having given birth (129). Donald W. Winnicot used the phrase ‘Primary Maternal Preoccupation’ (PMP) to de-
scribe the rise of heightened sensitivity during a woman’s pregnancy, which will help her perceive and understand her newborn (130). Giving birth is in many cultures viewed as a transformation, not focusing merely on the bodily attainment, but on the social, psychological and deeply existential transformations coming to the forefront in relation to giving birth (4, 15).

Being a mother of a newborn has also been investigated as an existentially challenging and enriching life period, in which a new life orientation system develops, a new ‘northern star’ (53). Motherhood has been empirically studied and understood as a pivotal and life-changing experience (37, 72).

These three assumptions formed the netting, from which we developed the items. In order to obtain context sensitivity (91), items were constructed from different sources to meet the language and life of the respondents, and at the same time covering the aim of the study. They were identified from various sources:

1. The pilot study. An interview study among 3 Danish mothers who gave birth preterm, experiencing actualisation of existential and religious consideration and subsequent practices. Items were identified from their experiences both with regard to wording and content (114).

2. The literature review. The scoping review conducted in 2010-2011 focusing on the existing literature in the field of childbirth or motherhood and spirituality and religiosity. Most of the included studies point to motherhood transition as a significant life event, and through the analytical lens of existential psychology we concluded that motherhood transition “… can be interpreted as an existentially changing event, reorganising values and what makes life worth living and to some women, also being interpreted as a spiritual experience.” (72, p. 8).

3. Questionnaire or interview surveys, which in according to the netting of our questionnaire were relevant:
   
a. The European Value Study (2008)


c. World Values Survey
d. The Views and Values Survey from the Danish Twin Registry (2009)
e. Trosundersøgelsen, Rigshospitalet, Copenhagen (2006) (101, 131)
f. NAPPS: New Arrivals Passage to Parenthood Study (132)
g. Views and Values among Danish Medical Doctors (2009)
h. Interview study among Swedish cancer patients about coping and religiosity (133)
j. SoMe Questionnaire – Sources of Meaning and Meaning in Life Questionnaire (84)
k. The Utah Test for the Childbearing Year (UTCY) (135, 136)

4. Clinical experience and anthropological, sociological and psychological literature on motherhood and childbirth (17, 20, 34, 137).

The questionnaire comprised seven sections, encompassing 165 items in 46 topic items, each section covering either demographic or obstetric variables, and then existential meaning-making on a secular, religious or spiritual level related to motherhood transition. See the table of origin of included items and the complete questionnaire in the Appendices 1 and 2. The overall structure reflects the three overall assumptions, visualised for example in the last three sections of pregnancy, birth and postnatal periods as three individual periods, which may facilitate considerations related to existential meaning-making. It is also reflected in the design of items being constructed to measure both knowing-, doing- and being dimensions of existential meaning-making, as it is seen in the works of la Cour and Hvidt (98). The majority of new items developed for the survey were closed-ended questions and constructed as statements the respondent would have to consent or not consent to on a 4-point Likert scale, entailing that there was no middle position, but at the end of the scale a ‘don’t know’ check box. The Likert scale was anchored by ‘Very much so’, ‘To some degree’, contrasted by ‘To a small degree’ and ‘Not at all’. Some of the items had the negative answer possibility presented first (for example item 28: Do you take some moments of prayer, meditation or contemplation or something like that?), and some items had the possibility of agreeing to a statement presented first (for example item 36d: Giving birth was a blessed event), where ‘very much so’ was the first option (138)
<table>
<thead>
<tr>
<th>Section</th>
<th>Number of items in section</th>
<th>Focus</th>
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<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>Demographic information</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>Pregnancy and birth in 2010 – obstetric focus</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Meaning and purpose in life</td>
</tr>
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<td>4</td>
<td>14</td>
<td>Religious and spiritual questions and the general significance of such matters in the woman's life</td>
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<tr>
<td>5</td>
<td>3</td>
<td>Experiences and perceptions related to pregnancy, focusing on dimensions related to existential meaning-making of secular, religious or spiritual nature</td>
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<tr>
<td>6</td>
<td>4</td>
<td>Experiences and perceptions related to birth, focusing on dimensions related to existential meaning-making of secular, religious or spiritual nature</td>
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<tr>
<td>7</td>
<td>8</td>
<td>Experiences and perceptions related to the postnatal period and being a mother, focusing on considerations of secular, religious or spiritual nature</td>
</tr>
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</table>

Table 3 Structure of the questionnaire survey in seven overall sections

The translations of items from English surveys were done firstly by the first author to fit a Danish setting among new mothers, and secondly validated in the face validation process (n=9) and among co-authors and clinical colleagues. All items from surveys having been used in Danish settings previously were used as they appear, for example items from the European Values Study (139). Translation of the survey into English to be reported in international papers was done firstly by the first author and secondly by a professional translator (MC). All items deriving from international surveys appear in the original wording.

The comprehensive process of developing the questionnaire was done in collaboration with experienced researchers from Danish universities and Bowling Green University, Ohio, and clinical colleagues in Denmark.
Validation of questionnaire

Due to the sensitive subject of existential meaning-making issues, the intention was to let respondents handle questionnaires themselves, instead of interviewing them (115, 120). After the initial construction we validated the questionnaire firstly among clinical and research colleagues, and adjustments were made before the face validation process. The face validation consisted of 9 interviews with new mothers of both full term and preterm infants, enrolled by snowball sampling (140). The interviews were semi-structured based on an interview guide: One focus group interview, and 6 individual interviews. The informants were ensured anonymity and confidentiality due to ethical conduct in research, and received an information letter before the interview (140). The interviews focused on several different themes to ensure construct and subject validity and a satisfactory response rate (141, 142):

- The subject and relevance of the questionnaire
- The language and wording in the questionnaire
- The logic embedded in the sequence of questions
- The instruction in completing the survey and the covering letter
- Attitudes towards incentives
- Attitudes towards layout of the questionnaire
- Attitudes towards distribution - electronic or paper version?
- Experiences of time spent filling in the questionnaire.

On the basis of the face validation we made the final adjustment of the questionnaire. The final questionnaire had an A4 format and was printed in black/white with the logo of the University on the front page. The cover letter was adjusted and attached separately, whereas instructions were embedded in the questionnaire. The cover letter explained the voluntary nature of participation, and the exact registration number from the Danish Data Protection Agency was included. See appendix 3. A pre-paid reply envelope was enclosed as well. Also, the participants had the possibility of contacting me by post, e-mail or telephone. No incentives were given, and the questionnaires were distributed by Post Danmark (the national Danish postal service provider) only, not electronically. They were returned in a sealed envelope with a code number, unique for each mother.
**Data collection**

The questionnaire was first sent out in July 2011, which was between 6-12 months after the mother had given birth, while included mothers gave birth between 1st of January 2010 and 1st of January 2011. Those who did not reply within 10 weeks were sent one reminder letter together with a new questionnaire (141). See the flowchart of the survey below.

![Flowchart of the questionnaire survey](image)

**Figure 3 Flowchart of the questionnaire survey**

Of the 913 letters sent out, 5 letters were returned from the postal services labelled ‘addressee unknown’, which means that 908 mothers received a questionnaire. Overall 517 mothers responded, 382 AT mothers (accounting for 74% of respondents) and 135 PT mothers (26% of respondents). See the dropout flowchart below.

The returned questionnaires were scanned by a private consultancy company (UNI-C) with the intention of minimising typing errors. Data were supplied to us primarily in STATA format, and SPSS (for handling long accounts related to open-ended questions and reflections). We conducted random checks for consistency between scans and the original questionnaires and found no inconsistencies.
Figure 4 Dropout flowchart

**Statistical analyses**

In both studies data were analysed using Stata version 13.0 (143). Categorical data were analysed using the chi-square test of independence, and binomial regression was used to control for confounding. A p-value < 0.05 was considered statistically significant. Results were presented as relative risks with 95% confidence intervals. Mothers of twins where 1 child died and 1 survived were categorised as mothers of a living child in both studies. In Study 2 we dichotomised the Likert scales used during analyses, and in Study 3 we reduced some of the answers into subgroups. See the individual papers for specific data processing and tables.
Main findings

In the following section some of the analyses and findings crossing the two studies will be presented, for example the result of the dropout analyses among respondents and nonrespondents and the sociodemographic variables between FT and PT mothers in the two studies. For all results, tables and bar chart, see the individual papers.

The survey had an overall response rate of 57%. We found no statistically significant differences between respondents and nonrespondents related to cohabiting status, mode of birth (caesarean section versus vaginal birth), neonatal outcome (perinatal or postpartum loss) or time of birth (preterm versus full-term birth). We found statistically significant differences related to age, respondents being on average 1.7 years older than nonrespondents. Also statistically significantly more respondents (82%) than nonrespondents (72%) were members of the Danish National Church. See p-values and tables in the individual papers. There were no geographical differences in response rate measured on the five Danish Regions.

Among respondents also socioeconomic and obstetric factors were assessed in both studies, to search for differences between mothers who gave birth full term or preterm. There were no statistically significant differences between FT and PT mothers related to age, cohabiting status or educational level. We found a statistically significantly larger proportion of PT mothers to have had caesarean section and/or experienced perinatal or postpartum loss. See p-values and tables in the individual papers.

According to the structure of the meaning-making matrix, the two studies measured considerations related to the knowing and being dimension (Study 2), and related to the doing dimension (Study 3). Thus, the two studies measured different dimensions of existential meaning-making, both vertically and horizontally in the meaning-making matrix (vertically in relation to knowing, doing and being dimensions and horizontally in relation to the secular, religious and/or spiritual domains). See table 4 below:
Findings Study 2

Study 2 explored whether attitudes related to existential meaning-making intensified among Danish first-time mothers, and whether they differed among FT and PT mothers. The study was based on the analyses of five core items in two batteries in the questionnaire, addressing considerations related to universally human existence. Thus, according to the theory of the meaning-making matrix, the questions analysed were related to secular meaning-making, and not focused on spiritual or religious ways of making existential meaning. The choice of exactly these five questions had several reasons: Firstly, the questions in the two batteries were designed to shed light on secular existential meaning-making. Secondly, the descriptive nature of the study called for explorative analyses, using the freedom of non-replicated questionnaires to seek for tendencies in this population of Danish mothers (112). The five core items concerned meaning in life (item 16), vulnerability of life (39,6), responsibility (39,7), intensification of thoughts about life and death (39,8) and about ‘something bigger than myself’ (39,9). They were as such representing basic existential considerations, which may be brought about when becoming a mother (13, 14, 83). Overall we found similar high rates of affirmative answers to the core questions among FT and PT mothers. In the two items we found statistically significant differences among the mothers, showing PT mothers to have these thoughts to a slightly higher degree: The item concerning thoughts about life and
death (RR = 1.16) and the item concerning vulnerability of life (RR = 1.09). Three quarters of the responding mothers confirm that becoming a mother changes meaning and purpose in life (75%), raises considerations about responsibility (90%), about vulnerability (86%), life and death (75%) and about ‘something bigger than myself’ (64%). See p-values, relative risks and tables in paper 2.

We had hypothesised to find greater differences than those found in answers between FT and PT mothers in the results, which may be caused by several factors. The extensive care in maternity services for PT mothers in the postpartum period may already have helped them express experiences and perceptions – which may affect their answers. Also, the time span from the time of birth until the time of the survey may have affected answers and perhaps equalised PT and FT mothers. Concurrently, the mothers’ answers emphasised that becoming a mother was of profound significance and might act existentially transformative – even in a secular context like Denmark (144).

We concluded that Danish first-time mothers’ attitudes related to existential meaning were intensified, almost regardless of whether they gave birth at full term or preterm. We suggested that research in secular countries among new mothers should also investigate matters of not only secular existential meaning, but also spiritual and/or religious ways of making meaning in motherhood transition.

Findings Study 3

Study 3 explored prayer and meditation practices among Danish first-time mothers and whether they differed between FT and PT mothers. One core item (item 28) concerning prayer and meditation and distinguishing between different kinds of prayer or meditation was analysed: “Do you take some moments of prayer, meditation or contemplation or something like that?” Thus, according to the theory of the meaning-making matrix, the question was related to spiritual and/or religious meaning-making. There were several reasons for the selection of exactly this item: Firstly, we wanted to go one step deeper in exploring existential meaning-making among Danish women, from having studied secular existential questions to now studying specific religious or spiritual practices. Secondly, the item had been used previously both nationally and in a population of pa-
tients or relatives at the Danish Rigshospitalet, and thus we were able to compare results. Thirdly, the design of the item revealed information not just about first-time mothers’ moments of prayer or meditation, but also provided distinguished knowledge about the character of practice. The mothers were allowed to select as many forms of the 9 different possibilities of prayer and/or meditation as they wanted.

We analysed the core item about spiritual/religious practice (doing-dimension) together with three background items concerning the knowing and being dimensions in the meaning-making matrix to search for consistency between dimensions as an indication of integrity in existential meaning-making. In the analyses of background items we found less than 22% reporting prayer outside service, and more mothers reporting belief in a ‘higher power’ (37%) than belief in some kind of God (33%). More than half of the mothers reported being a ‘believing’ person (56%). In the analyses of the core question, however, 65% reported having had moments of prayer or meditation with ‘prayer as an inner dialogue addressed to God’ being the overall frequent form of the 9 possibilities of prayer or meditation (46%). The frequent form of meditation was ‘meditation as means to maintaining or achieving good mental health’ (19%). In the analyses of differences between FT and PT mothers we found a tendency towards a difference in their response to the core question, although not statistically significant. Furthermore, the difference was attenuated when controlling for perinatal or postpartum loss and mode of delivery. See p-values, relative risks and tables in Paper 3.

We concluded that practices of prayer and/or meditation are confirmed by many Danish first-time mothers within the first 18 months after becoming a mother, and we suggest supplemental research about the character, frequency or importance of these practices (145).

**Ethical considerations**

Ethical issues were given careful considerations in all stages of the project. It became clear that carefulness was needed after completion of the pilot study where the interview situations of mothers, who had given birth preterm, activated strong emotions and even physical reactions (114). The Danish National Data Protection Agency gave their formal consent (original ref. no.
2010-41-5424), and data has been handled and stored in accordance with the Agency’s rules. The project was also submitted to The Ethics Committee of the Region of Southern Denmark. Respondents were given the exact reference number at the Danish National Data Protection Agency in the covering letter, which also emphasised the confidentiality of the data, the anonymity, and the approval from the Agency. Returning the questionnaire was seen as an informed consent pursuant to the rules of the Helsinki Declaration (146). In spite of the descriptive nature of a questionnaire survey, it might have acted as an intervention in articulating ideas and considerations, which the respondents might not even have thought of, before receiving the questionnaire survey. Some of the mothers in the face validation interviews articulated this. Aware of the awakening of existential concerns that the questionnaire could give rise to, women were given the telephone number and e-mail address of a person they could contact if required, and a web address with further information of the project, if they were interested. Women were also encouraged to leave their e-mail addresses for further research questions, and most women did (79%).

**Methodological considerations and limitations**

The studies conducted in this project are based on a systematic literature review in Study 1, and a cross-sectional survey in Studies 2 and 3. In this section considerations and limitations in terms of internal and external validity will be discussed in relation to the empirical studies, whereas strengths and limitations of the scoping review were discussed in a separate section, before introducing the empirical studies of the thesis.

Studying the substance (what it is) of existential meaning-making is different from studying the function (what it does) (147). Traditionally the substance has been studied via qualitative methodology, whereas the functions have been studied via quantitative methodology (147). The survey in this PhD project is characterised by its descriptive aim, thus trying to explore what existential meaning-making is among Danish mothers by means of a methodology used both quantitatively and qualitatively, the cross-sectional survey (112). A cross-sectional survey is bound by its simultaneous measure of exposure and outcome, hence causality of the associations measured cannot be detected (115).
Internal validity refers to the consistency between what an instrument is designed to measure, and what is actually measured (115). Internal validity was established in the study in several ways. First, during the extensive preparatory work, letting the literature review, the pilot study and knowledge from related questionnaire surveys and clinical experience inform the structure and items of the survey. Thus, the questionnaire encompassed few items addressing existential meaning-making in a generic way, but appeared very contextualised. This may presumably be a reason for the response rate of 57%; despite being a comprehensive questionnaire touching very private matters of life, many mothers responded. Other surveys have had response rates below 35% (127), or 55% (148), when exploring religiosity among Danes. Second, to ensure construct and subject validity, the face validation process aimed at securing that the questionnaire was received and understood by respondents the way we intended, as explained in the section about data collection. Internal validity may be compromised by not having quantitatively pilot tested the survey. Also, no statistical analyses were performed to test internal consistency in the questionnaire.

The high degree of contextualisation, on the other hand, diminishes the external validity. External validity refers to the degree of which research findings can be generalised to other settings or samples (115). Developing a new survey to explore considerations among Danish first-time mothers prevented us from comparing data directly from other questionnaires measuring more generic dimensions of either motherhood transition or considerations related to existential meaning-making. However, the core item in Study 3 has been used previously in Denmark in a shorter version. In lack of many comparable results, in analyses of both studies we have tried to discuss and contextualise results in the Danish society and healthcare system they originate from.

External validity may have been affected by not having made power calculations before conducting the survey. In reducing recall bias, we were convinced not to gain information from mothers later than 18 months after having given birth. Hence the retrieval from the Danish Medical Birth Registry of all Danish first-time mothers concerned mothers who gave birth in 2010. We sought to control for selection bias through transparency in analyses in dropouts, as also visualised in the
dropout flowchart (Figure 4). We sought to address the possible confounder of perinatal or postpartum loss of a child by controlling for this in both Studies 2 and 3.

In analyses we sought to incorporate dimensions and domains of the meaning-making matrix both at a vertical and horizontal level, which strengthens the findings in revealing for example high reports of prayer and/or meditation, but at the same time revealing an inconsistency in the practice of prayer/meditation and ideas of God (145). This inconsistency was found in analyses of data from the 2008 EVS as well (95). Findings from the thesis may be limited by an explorative analyses strategy, where the aims of the studies were clear, but exploration of responses also inductive in trying to detect some of the interconnectedness between items (112). This inductive approach implied that we did not analyse all the data, for example items from the RCOPE (or the coping-perspective in general), items concerning considerations about spiritual coping in relation to the specific event of birth or experiences of the postpartum relationship with the partner. Consequently, there are still many interesting data waiting to be analysed, bringing new insights of different dimensions of existential meaning-making in motherhood transition.
Discussion

The discussion is structured into three sections, the first two sections mainly being related directly to the findings of the scoping review and the empirical studies, respectively, and the last discussion section concerning biomodification of motherhood transition is a synthesised discussion of the findings in a broader theoretical and clinical perspective.

The study objectives were:

1. To obtain an overview of existing literature focusing on existential meaning-making in motherhood transition among mothers of full-term children in Western-oriented countries.
2. To investigate the intensification of attitudes related to existential meaning among Danish first-time mothers and to investigate if these attitudes differ between mothers who have given birth at full term and preterm, respectively.
3. To investigate practices of prayer and meditation among Danish first-time mothers, and to distinguish between mothers having given birth at full term or preterm in their respective prayer/meditation practices.

Existential meaning-making in motherhood transition - Study 1

Gaining insight into the views of existential meaning-making from mothers in Western-oriented countries was not an easy task. Firstly, because excluding traumatic or pathological childbirth pared down many studies focusing on considerations related to making meaning of life, and secondly, because such considerations are hard to explicate. It was a general finding among mothers in the studies that articulating what becoming a mother actually meant existentially was challenging. As this Finnish mother puts it: “It is an experience without words. There are no words to describe this experience. Perhaps only a mother’s heart can feel it” (3, p. 4).

Presumably, several reasons determine the challenge in articulating what one of the most commonplace events means existentially. First, one reason could be the paradoxical experiences of for
example loss and gain at the same time, or strength and impotence both bodily and existentially, which were described by some of the informants (149).

Second, a reason could be the biomedical focus in the healthcare service focusing primarily on biological dimensions of pregnancy and childbirth, thus leaving out perspectives related to the life event as an existentially transformative event. This is pointed out by the American anthropologist Robbie Davis-Floyd: In ‘technocratic’ health care the understanding of childbirth as a potentially high-risk event is dominant, which very easily leads to a belief in science and technology, and even female inferiority (4). Existential considerations or experiences related to motherhood transition are thus not considered important, and the potential in this life period to reach some kind of existential authenticity is not employed (78). New perspectives of life could be the paradoxical feelings of for example being fragile but at the same time powerful, of spiritual and bodily power or the intensified introspection combined with a new public awareness (150-152). Through the perspective of van Deurzen, we found in the review that in motherhood transition new ways of being in the world appear (74) – they may be difficult to articulate, yet deeply meaningful.

Third, a further reason could be the linguistic discourse in the healthcare system, which seems linked to the biomedical focus, thus framing the life event of becoming a mother - enhancing the ‘medicalised birth’ as the Canadian professor of Religion, Pamela Klassen, puts it (20). Among 45 home birthing women in the North East US originating from different background she found that they all used the concept ‘spiritual’ when interviewed about their births. She interprets the use of the concept as an attempt to underline the significance of childbirth. The fact that the women in her study gave birth at home is interpreted as an economic and religious critique of the medicalised birth with its emphasis on birth as simply a bodily process to undergo (20, p. 63). Moreover, the obstetric linguistic frame may construct not only childbirth as a risky biomedical event, but potentially has “...the power to shape experience.” (153, p. 115). The risk of seeing childbirth as primarily a high-risk event is, according to Davis-Floyd, that childbirth as a rite of passage “...reflects and reinforces core values of society” (4, p. 305). Subsequently values like focusing on risk in life or primarily articulating life events through the language of the healthcare system are embedded in the new mother and the family – and the newborn, and the silence or the ignorance related
to existential dimensions of life is likewise embedded as the non-important. Moreover, being non-explicated it might be non-existing, reinforcing existential dimensions of life to be non-important in life in general? When is a life event ever more significant and deserving the label of ‘an existential experience’ if not the life event of childbirth – claimed to be one of the greatest acts of humanity (154)?

The fourth and last reason leading to the general finding in the review, of women finding it hard to explicate what motherhood transition means existentially, may be the secularisation of society in general. Some of the included studies originate in other secularised countries, which may lead to a mutual taciturnity related to existential meaning-making? As mentioned in the background section, la Cour in 2005 argued that Danes hold a ‘crisis religiosity’ characterised by being subtle and non-explicated in everyday life, but accentuated through crisis (97). This may lead to a simplified language regarding existential matters of life, caused by the lack of a shared and nuanced vocabulary. In the scoping review it seemed that there were geographical differences in the data related to which concepts to use to describe what motherhood transition actually meant existentially. Some of the women used concepts like ‘blessing’, ‘spiritual’ or ‘miracle’ to verbalise their experiences (151, 155, 156), or related largely to statements imbuing pregnancy and childbirth with sacred qualities (132). Most of the studies using these concepts were conducted in the US or Australia, whereas the use of them seems merely non-existing in the studies originating in Northern European countries.

In summary, four reasons are discussed that might affect the finding in the review, namely that articulating what becoming a mother actually meant existentially was challenging: 1) the experience of childbirth being a paradoxical event, 2) the biomedical focus in the healthcare system, 3) the ensuing linguistic frame in the healthcare language leaving out perspectives related to an existential dimension of health, and 4) the generally subtle religious dimensions in secularised countries.

Also the papers located after the new search in 2014, and comments related to these, call for the existential perspective related to childbirth. Crowther, in a literature review focusing on joy at
birth, argues how exactly joy remains largely neglected in literature, and how also sacred and spiritual meaning related to birth is often unspoken (26). The acknowledging of and efforts to safeguard something sacred in childbirth have been described in other studies as well (157). Blix describes, on the basis of an interview study with 12 midwives who attended home births, how they tried to prevent the birthing women from being disturbed. She argues that such efforts are to be understood in their basic understanding of labour as serious work to be done and taken seriously (157).

The scoping review overall clarified the lack of literature about existential meaning-making in relation to motherhood in Scandinavia and in Denmark.

**Existential meaning-making among Danish first-time mothers – Studies 2 & 3**

We found considerations related to existential meaning-making, measured on attitudes towards secular existential items (Study 2) and religious and/or spiritual practices (Study 3), to be present among Danish first-time mothers to a higher degree than expected. In this section three main findings from the two empirical studies will be discussed, first the lack of difference between FT and PT mothers in responses, second the general high consent to the items exploring how Danish first-time mothers make meaning existentially, and third the affirmative responses to prayer to a higher degree than to meditation.

In addition to the overall high rates of affirmative answers, a general finding was the similarity in findings in responses from FT and PT mothers. Only few statistically significant differences between FT and PT mothers were found, and when controlling for death of the child they diminished. As discussed in the papers, this finding could be influenced by several factors. One reason could be the timing of the survey, because answering questions of childbirth and motherhood up to 18 months after having given birth may equalise FT and PT mothers. The first critical period has passed then, and a more secure attachment to the baby has been established. Another contributory cause of equalised answers may be the extensive postnatal service in Denmark for women having experienced traumatic birth including preterm birth (11). The PT mothers then had early possibilities of articulating experiences and feelings related to motherhood transition and child-
birth, and this may have facilitated consciousness-raising regarding existential meaning-making (158). Adversely it could be argued that since stressing life events, such as life-threatening disease, activate religiosity to a higher degree than more mundane life events (14, 93), we could have expected to find low scores on prayer and/or meditation due to the long timeframe: Answering questions about motherhood transition and practices of prayer and/or meditation after the critical period and a potential NICU stay might have reduced the consent to practice. Contradictorily, we found more respondents in this survey to consent to having prayed or meditated (65%), than when it was used in the 2008 EVS (48%) or the 2006 questionnaire survey at the Danish Rigshospitalet (62%) (101, 159).

The lack of difference in responses between the FT and PT mothers may, however, be motivated by different underlying feelings and experiences of for example joy, gratitude, grief or betrayal (26, 50). As for other traumatic experiences of childbirth or motherhood transition, feelings and considerations related to being a PT mother have previously been explored. Hence the experiences and reflections may also appear more complex and more nuanced. From such research we gain insight in for example differences in being a mother of an extremely preterm infant or a moderately preterm infant (63, 64). However, the pain and embedded ambiguity in PT motherhood transition (44, 50) seem to provoke existential meaning-making considerations, and of these we know only little of the substance or significance. Therefore, further research among PT mothers in relation to existential meaning-making seems relevant and timely.

The lack of difference in attitudes and practices could, however, also be interpreted as part of the overall finding of most mothers having thought of life and death (item 39,7) and meaning in life (item 16) and having prayed and/or meditated. From this perspective the potential of change in bodily, psychological, social and existential ways, which is embedded in motherhood transition is underscored (4, 6, 149). As the Danish psychologist Else Christensen laconically expressed in her 1979 investigation of first-time parenthood in Denmark: “Man kan få en ny mand eller et nyt arbejde, men man kan ikke igen blive en kvinde der ikke har født et barn.” (39, p. 233).¹ This basic

¹ “One can get a new husband or a new job, but one cannot again become a woman, who has not given birth to a child.” (Prinds’ translation 2014)
change (and potential) in life is independent of whether a woman gives birth at full term or pre-term, although giving birth preterm is also a direct confrontation of sickness and death and fear of long-time perspectives with one child (114).

In relation to the item of prayer and/or meditation, we found an overall high score of 65% reporting having prayed or meditated. Also we found more mothers to connect to prayer than to meditation; moreover, the most frequently scored possibility was ‘prayer as an inner dialogue with God’, which was selected by 46% of respondents confirming having prayed or meditated. As we discuss in Paper 3, it seems that that not only a transcendent dimension (as in meditation), but a transcendent relation (as in prayer to someone outside oneself) becomes important to Danish first-time mothers (160). The conceived relation in prayer to a God greater than and beyond oneself may be higher valued than that gained in secular meditation practices, often characterised by contemplation within oneself (161). Prayer as an inner dialogue can be interpreted as an individualistic practice of existential meaning-making, at the same time as the God image seems vague. Andersen and Lüchau find this apparent paradox between the increase of importance of religion to Danes, at the same time as being individualised as well. It seems that many contemporary Danes combine seeking answers in religion with doing this in their own individual way: there is a growing confidence in the church providing relevant answers to existential questions, but a receding belief in the church as a special authority (95).

In the next section it is discussed why considerations related to making meaning of life existentially may not be part of maternity care for women.

**Biomodification of motherhood transition**

When considerations related to existential meaning-making among Danish mothers are not explicated, reasons and implications are presumably multifactorial. In the following discussion I shall broach some of these, both at an individual level and at a population level, as well as raise counter-arguments suggesting why some considerations related to existential meaning-making perhaps do take place.
Women are in general found to be more religious than men, which is partly due to childbirth and motherhood (162). Also in Denmark women are found to be more religious than men (163). Maternity services are concerned with women in motherhood transition and in Denmark the healthcare professionals are mainly women as well. Midwives are almost exclusively women, among registered nurses in 2014 96.6% were women (164) and among active members of the Danish Society of Obstetrics and Gynaecology (DSOG), there were in 2013-2014, 2.5 times as many women than men (615/242) (165). Genderly speaking, hence the basis of openness related to existential meaning-making considerations should be provided, since mainly women work in maternity services. Even so, apparently such considerations are not part of the national guidelines from the Danish Health and Medicines Authority today (11).

When Danish citizens, other than new mothers, are asked if they expect spiritual care in the healthcare system, they refuse. In a recent study only 16% expected this through life-threatening disease (166). In a report among more than 2000 cancer patients from 2006, it was found that 17% had missed counselling regarding spiritual matters of life (167). In the 2013 Danish National Survey of Patient Experiences regarding childbirth among 9500 women, 91% expressed satisfaction with the experience of childbirth in Denmark (168). According to satisfaction surveys, spiritual care does not seem to be required by patients. The rationalistic response to this may be that specific needs not conscious or explicated by patients are not of significance.

However, from other arenas it could be interpreted that what is reported by patients relies on expectations as well as on actual needs. For example in relation to the use of complementary and alternative medicine (CAM), it is stated that patients do not always talk about this with healthcare professionals, even though seeking CAM (169). Important reasons given by patients for not disclosing the use of CAM are concerns or experiences of negative responses from the healthcare professionals, the perception that they do not need to know. Or simply because they are not asked about CAM (169, p. 41). A recently published study among Danish colorectal cancer patients found only 8.5% of participants to have been asked by their physician about CAM use (170). Presumably some of these mechanisms could be triggered also in relation to existential or spiritual matters? They are presumably not considered important? Concurrently other mattes of private
life that in earlier times were not considered important issues to the healthcare system have now come into focus, for example baldness or erectile dysfunction (67). And in relation to childbirth, oppositional matters have been raised openly, as for example home birth or caesarian section on maternal request (171-173). As suggested in the first discussion section, the specific biomedical and linguistic frame in the healthcare system unfolds specific matters to be important, and leave others (for example considerations related to the existential dimension of life) to be folded up. Thus existential considerations are kept silent and no one expects to talk about them.

The biomedical paradigm of the healthcare system may *biomodify* women’s understandings of which dimensions of life and motherhood are significant: Modify experiences, reflections and feelings into something bio-expectable. *Biomodification* is a neologism in which the impact – or the modification – caused by the biomedicalisation is sought embedded. Hence the expectations and considerations reported to the healthcare system stem from *biomodified* women – women ‘infected’ by the focus and thinking in the biomedical healthcare system (4), and thus modified into valuing certain dimensions of motherhood as more important than others. As Davis Floyd argues, childbirth has tremendous importance as a rite of passage, because of the reflection and reinforcement of core values in society (4, p. 305). The long-term risk of the risk-focus in maternity services then is when risk becomes a life value in the mother and family (4). What are the risks of focusing on risk then? Through the perspective of Ivan Illich it could be argued that through the strong focus on risk related to morbidity and mortality, autonomy diminishes. We become *bio-modified* through the cultural iatrogenesis embedded in this one-dimensional view of health (70). Thereby other important aspects of not only motherhood but of life may be diminished, for example aspects related to existential meaning-making, like experiences of vulnerability or responsibility leading to authenticity in life (78).

Moreover, through the critical lens of Davis Floyd and Klassen (4, 20), it could be argued that one additional reason for the Danes having a ‘crisis religiosity’ (97) is the reinforcement of existential or religious/spiritual considerations not being considered important in motherhood transition. When not acknowledged or valued in relation to beginning of life, how could they be activated when facing other life crises or death? Thus it is embedded not only in the mother’s life, but in
families and new-borns, that this life event is not to be articulated or understood as an existential or religious/spiritual event, but “...simply a bodily process to undergo” (20, p. 63).

In relation to the high degree of satisfaction expressed by Danish mothers in the 2013 Danish National Survey of Patient Experiences regarding childbirth, one could raise the counter argument that Danish women do feel met in their expectations (168). They may be biomodified in perceptions and expectations, but at the same time feeling acknowledged through a shared silent language. One way of acknowledging the significance of motherhood at an existential level is through actions and behaviour resting on what is reported as tacit knowledge (112, p. 35, 174). Tacit knowledge develops through experience and socialisation (175), and perhaps in midwifery care there is a silent dimension of acknowledging the significance of motherhood transition, fulfilling this human need to feel met as a pregnant and birthing woman? This could be through being with women through birth, sharing time and experiences and help creating the new life story (176, 177). It is also seen in the non-articulated urge to protect the sacred space around birth (157, 178). This subtle and sometimes unarticulated way of adding significance to a life event is embedded in the concept of ‘maieutic’ a Greek term meaning ‘art of midwifery’, reintroduced in 2006 by the Danish philosopher Jacob Birkler (179). Maieutic in midwifery is expressed when placing oneself in an ignorant position to be able to ask questions to the pregnant woman or new mother, which facilitate not merely knowledge of her situation, but lead her to gain acknowledgement or insight in her new life situation (179). In silent ways, not explicated in national guidelines or information pamphlets, but through maieutic work, perhaps women feel met adequately at an existential level?

The silence or tacitly embedded ways of acknowledging motherhood transition in maternity care may even be the most adequate way of care? When hard to explicate, it may be because of motherhood transition being first and foremost ‘lived’, not articulated in words. It is a transition so obviously embodied, and during the climax of birth potentially creating an out-of-body experience (36). However, even being a very ‘lived’ experience, especially the paradoxical feelings were explicated in Study 2. Most respondents reported thinking more of life and death when becoming a mother (75%). Together with thinking more of responsibility (90%), vulnerability (86%) and ‘some-
thing bigger than myself’ (64%), the paradoxical feelings embedded in motherhood transition are indicated: The mixture of joy and fear, of vulnerability and responsibility, and of being confronted with both life and death. When considerations related to existential meaning-making are not explicated, could it also be because of these paradoxical experiences in motherhood transition (158)? Or the surprising appearance of many paradoxical feelings and that these could not be prepared for, even when having followed advice from the healthcare professionals (180)? Psychosocial paradoxical feelings are well described also in the official Danish recommendations for the maternity services (11, pp. 170, 172).

Summatively Studies 2 and 3 indicate that considerations related to existential meaning-making at both a secular, religious and spiritual level are brought to the forefront among Danish first-time mothers. As discussed in this section concerning biomodification of motherhood transition, such considerations are rarely explicated in maternity services. It could on one hand be argued that new mothers, through their own life journey in the healthcare system from their own birth to now motherhood, are biomodified into certain understandings of what to expect in maternity service. Considerations related to existential meaning-making are not expected to be part of this service, thus not missed (166, 168). On the other hand, it could be argued that perhaps they do feel met in trying to make meaning of life existentially, through tacit knowledge and maieutic work, which in silent ways create sacred spaces and existential acknowledgement. Whatever the circumstances, the acknowledgement of existential considerations present among new mothers seems for several reasons important to explore and explicate, not because feelings or considerations without words are not of significance, but because the power of language and focus is adding significance to a powerful life event, just too profound to remain ‘un-significated’.

In this section I broached some of the reasons, which explain why existential meaning-making considerations are not explicated among Danish mothers. In the section concerning clinical implications supplemental reasons and implications are elaborated.
Research implications

This thesis uncovers a corner of motherhood transition in Denmark not previously explored before, namely how considerations related to existential meaning-making intensify when becoming a mother.

The empirical study is descriptive, and although having shed light in this area there are still important data in the questionnaire to be analysed, for example in relation to the relationship with the partner and in relation to the aspect of coping, not least in relation to giving birth. The coping aspect of motherhood transition remains rather unexplored, leaving questions unanswered, which are explored in relation to other groups of patients (127, 133, 181).

Study 3 found that many mothers reported having prayed or meditated, which represents a ‘lived’ form of existential meaning-making. Further research among new mothers could be approached through a more qualitative research approach as suggested by McGuire in 2008: Religion as being firstly lived and embodied, and not necessarily embedded in cognitive consistency, calls for close attention not only to what people say, but to what they do (182). Furthermore, through other approaches of for example phenomenological, narrative or feminist positions we could gain insight into what could be called inherent meaning in life. Through data and analyses of life-world, narratives or discursive acts or words of mothers, nuanced and abstruse knowledge could be obtained (112, 183).

In relation to PT mothers, a group of mothers having increasingly been in the scope both in research, in maternity services and of political awareness, the existential meaning-making aspect of research and of care seems to be limited. Studies 2 and 3 find PT mothers having had thoughts of for example meaning, and life and death together with moments of prayer and/or meditation. To address the well-described pain and ambiguity among PT mothers in a secular society, research focusing on content and significance of existential meaning-making considerations thus seems needed.
The questionnaire survey was of explorative character, and the findings overall confirmed our hypotheses of existential considerations being present among Danish mothers. Thus it seems relevant to further develop the questionnaire through for example reducing items and testing internal consistency, and supplemental validated instruments could be applied to first-time mothers, e.g. the SoMe-instrument, in measuring constructs of meaning (84).

Lastly, it has been suggested that considerations related to existential meaning-making are of vital relevance also from the perspective of the healthcare professionals, hence, both patient and healthcare professional aspects should be explored (184-186).

Clinical implications

Findings from a PhD project characterised as being descriptive and in some ways pragmatic primary research are not easy applicable in clinical work. Nonetheless, the exposure of considerations related to existential meaning-making being present among more than half of the respondent mothers calls for clinical reflections.

Firstly, because we are obliged to acknowledge the significance of motherhood, hence simply to explore perspectives of women (11, p. 31).

Secondly, it has been argued that it is just as important to address existential or spiritual needs among patients, as to address psychosocial needs (75, 187, 188).

Thirdly, as discussed in the previous section about research implications, the coping perspective remains untouched in this thesis. It is suggested that religion can act as a coping resource during negative life events and in life in general, affecting both physical and socioemotional aspects of life (93, 189-191). In overlooking an existential dimension of life, we possibly disregard not only both positive and negative coping strategies related to different ways of secular, spiritual or religious coping (190), but also disregard conducting and focusing on research in which motherhood transi-
tion potentially could facilitate authenticity in life, and valuing aspects of life, which in a *biomodified* understanding remains pathological (75, 78). For example could feelings of worry or confusion or introversion lead to new ‘life insights’ and not primarily expressions potentially traumatising (11). Also the potential of the concept of PTG remains rather unexplored in relation to motherhood transition in secularised countries (27).

Clinically we could implement various ways of addressing considerations related to existential meaning-making, in questions or dialogues, as suggested in for example the ‘FICA Assessment Tool’ (192, 193). However, the important implication clinically may be, at different levels, not merely cognitive in terms of acknowledging and addressing existential meaning-making, thereby stressing the immense and powerful impact on life becoming a mother has. Also in education of midwives and healthcare professionals existential meaning-making needs to be addressed, and not regarded as a personal trait or depending on interests (194).
Summary

Motherhood transition is a significant life event. Research from various disciplines outlines pregnancy, birth and the initial period of motherhood as a period of life in which a woman might experience disruption and gain new perspectives in a bodily, psychological, social and existential way. This may be even more relevant for women giving birth preterm, since research suggests that mothers of premature babies undergo an experience of loss, crisis and unpredictability. This PhD project aimed to identify whether motherhood transition actualises considerations on how to make meaning of life existentially among Danish first-time mothers, and whether they differ among mothers of full-term children (FT) and mothers of preterm children (PT).

The thesis consists of three individual, still interrelated papers, first a scoping review among mothers having given birth at full term, identifying existing research about the significance of motherhood transition through the lens of existential psychology. For the second and third study, a nationwide questionnaire survey among Danish first-time FT and PT mothers was conducted. In the second study attitudes about making meaning of life existentially was explored, and in the third study prayer and/or meditation practices were explored.

Through the analyses of the included interview studies in the first study, we suggest that motherhood transition is considered a pivotal yet paradoxical life event both bodily, psychologically, socially and existentially. No Danish studies were found during the literature search. The questionnaire survey among Danish mothers was thus conducted in 2011 and had a response rate of 57%. There were no statistically significant differences between the responding FT and PT mothers in terms of age, cohabiting status, educational level or birth method.

Study 2 concerns attitudes related to secular meaning measured through five core items: Meaning and purpose in life, vulnerability of life, responsibility, thoughts about life and death and ‘something bigger than myself’. Contrary to our hypotheses we found Danish mothers’ attitudes related to existential meaning to be intensified during motherhood transition almost to the same degree among FT and PT mothers.
Study 3 concerns practices of prayer and meditation, and having had moments of prayer and/or meditation was reported by 65% of the respondents. We found no differences in affirmative responses between FT and PT mothers. Contrary to our hypotheses, prayer was practiced more than meditation.

The findings in the thesis indicate that motherhood transition is considered a life event of profound significance also among many Danish mothers, regardless of time of birth. Considerations and practices related to making meaning of life existentially are brought to the fore in this thesis, although it seems disregarded in the maternity services. Motherhood transition seems biomodified, diminishing perspectives related to an existential dimension to almost oddities. When motherhood and childbirth are modified into being primarily a biological or medical event, the status of being an existential life milestone is reduced as well. Thereby potential possibilities of for example growth and authenticity related to the commonplace miracle of childbirth and motherhood transition are not utilised.
Dansk resumé (Danish Summary)

Moderskab, tro og eksistens – eksistentiel menings-dannelse hos danske førstegangsmødre


Det overordnede formål i studiet var således, at undersøge i hvilken grad det at blive mor til et barn, enten født til tiden eller for tidligt, giver anledning til eksistentielle, religiøse og/eller spirituelle overvejelser.


Formålet med den anden artikel har derfor været derfor at undersøge forekomsten af eksistentielle overvejelser hos to grupper af danske førstegangsmødre, der fødte i 2010: Én gruppe mødre, som fødte deres første barn før 32. graviditetsuge (preterm (PT) mødre), samt det dobbelte antal mødre der fødte til termin (full-term (FT) mødre) (n=913). Målt på fem spørgsmål i spørgsamlaborationen, der handler om meningen med livet, om livets sårbarhed, om ansvar og tanker om liv og død, konkluderer vi, at danske førstegangsmødres eksistentielle overvejelser intensiveres. I modsætning til vores hypotese finder vi, at overvejelserne intensiveres i næsten samme grad hos PT og FT mødre.

Den tredje artikel har fokus på religiøse og spirituelle overvejelser hos de samme to grupper af danske førstegangsmødre, særligt spirituel eller religiøs praksis målt på bøn eller meditation. Vi finder, at 65% af mødrene svarer bekræftende til, at de af og til beder eller mediterer, og at de i højere grad svarer bekræftende til at praktisere bøn end meditation. Imod vores forventning finder vi ikke statistisk signifikant forskel på karakter af bøns- eller meditationspraksis blandt PT mødre og FT mødre.

Studiet er eksplorativt i forhold til at undersøge forekomsten af eksistentielle, religiøse og/eller spirituelle overvejelser hos førstegangsmødre i Danmark. Det viser sig i studiet, at ikke bare i relation til slutningen på livet (som det er set i forskning hos andre patientgrupper), men også i relation til livets begyndelse bærer mennesker på eksistentielle, religiøse og/eller spirituelle overvejelser. Den eksistentielle dimension nævnes ikke i Sundhedsstyrelsens Anbefalinger for Svangreomsorg i dag. Vi håber studiet kan øge opmærksomheden på denne dimension og udgøre fundamentet for yderligere forskning blandt mødre, men fremtidigt også gerne blandt partnere, i hvordan denne livsperiode kan aktualisere sådanne overvejelser, og hvad de i givet fald betyder for det at blive mor eller far.
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Papers

Paper 1 Making existential meaning in transition to motherhood—A scoping review
Making existential meaning in transition to motherhood—A scoping review

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\textbf{Abstract}

Objective: to provide a thematic overview of the existing literature on existential meaning-making related to transition to motherhood among mothers of full term born babies in Western oriented countries and to discuss the themes from a existential psychology perspective.

Design: the review follows the approach of a scoping review. Systematic searches in the electronic databases PubMed, CINAHL and PsycINFO were combined with manual and electronic searches for related references. Studies published between 1990 and 2010 examining dimensions of existential meaning-making in transition to motherhood were selected. Eleven papers were included in the synthesis, all using qualitative interviews. The following data were extracted from each study: (a) author(s), year of publication, study location, (b) aims of the study, (c) participants, (d) research design, (e) data collection method, (f) outcome measures, and (g) results.

Measurements: the studies were synthesised in a thematisation on the basis of the existential psychotherapist and philosopher Emmy van Deurzen’s concepts of four interwoven life dimensions, through which we experience, interpret, and act in the world: Umwelt, Mitwelt, Eigenwelt, and Überwelt.

Key conclusions: the findings in this review suggest that transition to motherhood is considered a pivotal and paradoxical life event. Through the lens of existential psychology it can be interpreted as an existentially changing event, reorganising values and what makes life worth living, and to some women also being interpreted as a spiritual experience. However, in present maternity services there is a predominant focus on biomedical issues, which sets the arena for motherhood transition, and the issues related to potentially existentially changing experiences, are not considered important. Without an integrative approach, where personal meaning-making issues are discussed, the potential for growth during existential authenticity is not utilised. Transition to motherhood raises existential questions about mortality and meaning of life, and we should explore this field in research and in clinical work.

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\textbf{Introduction}

Becoming a mother is a significant life event. It is a transition in life, where existential considerations regarding the meaning of life are reinvigorated. Through the lens of existential psychology making meaning of life and of life circumstances are essential for humans, and constitute a powerful motivation for living (Frankl, 1957; Yalom, 1980; Jacobsen, 2011). In the present paper meaning relates to fundamental life conditions and their importance in people’s lives. It refers to making meaning of life in the existential tradition of psychology/philosophy, which is rooted mainly in a European thought. In this tradition there is a predominant focus on meaning making related to secular worldviews, albeit also spiritual and religious dimensions can be encompassed (La Cour and Hvidt, 2010). Making meaning encourages an active questioning of life conditions with a fundamental awareness of human fragility and mortality which allows people to live authentic lives (Van Deurzen, 2007; Jacobsen, 2008; Karpatschof and Katzenelson, 2011).

The birth of a child has been regarded as one of the greatest acts of humanity (Ayers-Gould, 2000). In this perspective becoming a mother may change the meaning of life (Nichols, 1996; Thomas, 2001; Gaskin, 2002; Kitzinger, 2005). Questions about meaning of life may be invigorated in transition to motherhood,
and yet we only know very little about what these questions might mean to new mothers. Making meaning of life may be closely
linked to both existential and spiritual considerations. The existing
research focusing on meaning related to becoming a mother have
covered various factors related to making meaning, and are mainly
focused on the experience of giving birth per se (Budin, 2001;
This paper provides an overview and a thematic analysis of the
existing literature that thus focuses on existential meaning-
making in the transition to motherhood.

Motherhood transition as a life event

Motherhood transition is considered an event that may lead to
changes in our values and ideas of what creates meaning in life
(Becker and Hofmeister, 2001; McCullough et al., 2005; Andersen
et al., 2011). There are rich anthropological, sociological, psychologi-
al, and theological traditions for exploring childbirth and early
motherhood (Stern, 1999; Klassen, 2001; Odent, 2002; Downe,
2008; Leeds and Hargreaves, 2008). Birth as a pivotal life event was
stressed by the anthropologist Arnold van Gennep, who refers to
pregnancy rites and birth rites as pivotal rites in most cultures (Van
Gennep, 1981). The period of transition is the facilitation of a gradual
psychological opening to profound social change. The American
anthropologist Davis-Floyd (2003) describes the transitional status
implies that transition to motherhood is an event that takes place
at every birth, and not only for first time mothers.

Theoretical perspective

The perspective of this paper derives from existential psychol-
yogy. One of the important issues in the existential tradition is the
matter of life itself – being in the world and clarifying what it
means to be alive (Binswanger, 1963; Frankl, 1963; Yalom, 1980;
Van Deurzen, 2007). Being in the world is a complicated concept
from the German philosopher Martin Heidegger (1889–1976)
pointing at the understanding of human existence. If we want to
understand fundamental aspects of what it means to be alive, we
will have to take peoples immediate doings and their openness
towards the world into account, since we as humans must be
understood in the light of our experiences (Rendtorff, 2004).
According to the existential psychotherapist and philosopher
Emmy van Deurzen there are four basic dimensions of life (Van
Deurzen-Smith, 1984). Van Deurzen refers to the Swiss psychia-
trist Ludwig Binswanger’s work on three different life dimensions.
She used his concepts, and added a fourth dimension, the
‘Überwelt’ (Binswanger, 1963; Van Deurzen-Smith, 1984; Van
Deurzen, 2007).

<table>
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<th>Umwelt</th>
<th>Mitwelt</th>
<th>Eigenwelt</th>
<th>Überwelt</th>
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<td>The physical dimension in which we relate to the natural world around us, including our body. In this dimension we are confronted with limitations of natural boundaries (as in old age or bodily constraints related to being pregnant).</td>
<td>The social dimension in which we relate to others, including culture, class and race. Despite the possibility of different forms of belonging, power or prestige in our lives, we are eventually confronted withaloneness and failure.</td>
<td>The psychological dimension in which we relate to ourselves, including views about the past and the future. It includes a search for an authentic self, but during a lifespan we will be confronted with life events putting our inner selves at stake, for example being in transition to motherhood or facing personal loss and death.</td>
<td>The spiritual dimension. This dimension encompasses the fundament of values and ideals strong enough to live or die for. Despite the name Überwelt, the dimension is not necessarily related to a transcendent dimension, it also covers immanent ideals. Some people make meaning through a religious worldview, whereas others make meaning through a secular worldview. In this dimension we are confronted with the possibility of nothingness in our aim to reach something of eternal character.</td>
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of birthing women being at once both powerful and vulnerable. Davis-Floyd states that childbirth as a rite of passage has ‘... tremendous cognitive significance for the mother in American society… It also reflects and reinforces core values of society’ (Davis-Floyd, 2003, p. 305). The experience of pregnancy and birth cannot be understood as mere experiences in a woman’s life, but must also be conceptua-
lised as manifestations of core values of any society. These values are internalised in the health care system in what Davis-Floyd calls the ‘technocratic’ model of care, which is in opposition to the ‘wholistic’
model of care (Davis-Floyd, 2003). The ‘technocratic’ model of care
implies a positivistic, body-as-a-machine, risk-oriented, male-domi-
nated, institutionalised, technology-focused perspective on childbirth, which leaves out an integrating, wholistic, approach, in which perspectives related to personal experiences and feelings also have value (Davis-Floyd, 2003).

We focus specifically on existential meaning related to transition to motherhood, using the term motherhood transition to include the period of birth and the early postnatal period. This

The four dimensions are interwoven, and through them we experience, interpret, and act in the world. In the present paper existential meaning-making is conceptualised as created through van Deurzen’s four life dimensions. In order to explore transition to motherhood, the idea of the four life dimensions is chosen as a conceptual framework. The objective of this study is to review knowledge and to thematically analyse literature about existential meaning-making related to transition to motherhood among mothers of full term born babies in Western oriented countries.

Methods

A scoping review was an appropriate method, since it offered a way of identifying gaps in a research area and mapping key concepts. Although the scoping review methodology is still in the development stages, Arksey and O’Malley (2005) present a clearly defined, systematic approach to conducting scoping
reviews. The fundamental basis of the scoping review is comparable to that of both meta-analysis and systematic reviews: the research question is identified, relevant studies are found, and those studies are scrutinised for inclusion and exclusion (Poth and Ross, 2009). The scoping review methodology differs at this point, in three ways. First, in the present research on childbirth and motherhood transition, there was not a precise conceptual framework in relation to existential meaning-making, which made the iterative and yet systematic method of a scoping review attractive. Second, a scoping review allowed the possibility of incorporating a range of study designs and sources in order to shed light on the research question (Levac et al., 2010; Arksey and O’malley, 2005; Davis et al., 2009). Third, in trying to enhance the methodology of scoping Levac et al. (2010) emphasise the use of a theory or a model, when collating and summarising the included studies to prevent the review from being a simple summary of the literature (Davis et al., 2009; Levac et al., 2010; Arksey and O’malley, 2005).

We used the four life dimensions of van Deurzen as an explicit theoretical perspective grounded in an existential psychological tradition appropriate for charting the data (Davis et al., 2009; Levac et al., 2010). We used Arksey and O’malley (2005) method for a scoping review. It consists of five distinct stages: (1) Identifying the research question. (2) Identifying relevant studies. (3) Study selection. (4) Charting the data. (5) Collating, summarising, and reporting the results.

Stage 1. Identifying the research question

The research question was: How do mothers of full term babies make existential meaning in transition to motherhood in Western oriented countries?

Stage 2. Identifying relevant studies

Two search strategies were used to locate relevant studies. The first search strategy was to identify eligible papers by systematically searching three electronic databases: PubMed, CINAHL, and PsychINFO. A building blocks search strategy was used (see Fig. 1). Search tools, such as controlled descriptors, truncation, and Boolean operators to expand and narrow searches were used according to the particular thesaurus in each database. The second search strategy was a citation pearl growing strategy (Harter, 1986), consisting of hand searching reference lists and using database-services to find related articles, like PubMed's function 'Find related articles'. The search for literature took place in April and May 2011.

Stage 3. Study selection

Studies were included if they met the following criteria:

- Original empirical research focusing on the perspective of new mother’s experience.
- Completed in a Western oriented society defined as Europe, Russia, North America or Australia.
- Published between 1990 and –2011, and written in English, Danish, Swedish or Norwegian.

Studies were excluded if they were:

- Primarily focusing on transpersonal events during birth (non-ordinary states of consciousness (NOSC) (Lahood, 2007)).
- Primarily focusing on experiences during pregnancy.

A large number of references were excluded because they did not stem from original research, but could be comments, editorials or professional reflections. The first author reviewed abstracts and papers. A flowchart of the study selection showing the results from the first and second test of relevance is given in Fig. 2.

Stage 4. Charting the data

The idea of charting the data is to extract themes and key issues from each study including relevant contextual information related to the studies. In line with Arksey and O’malley (2005), the following data were collected: (a) author(s), year of publication, study location, (b) aims of the study, (c) participants, (d) research design, (e) data collection method, (f) outcome measures (in case of qualitative studies: types of analysis), and (g) results.

Following the suggestions for enhancement of scoping reviews by Levac et al. (2010), we used theory to extract data from the studies, and in the discussion data will be presented according to van Deurzen’s four categories of life dimensions. 1. Umwelt – bodily dimensions of motherhood transition. 2. Mitwelt – relating in new ways. 3. Eigenwelt – personal meaning. 4. Überwelt – transition to motherhood as an existentially changing event.

Findings

The fifth stage of the method consisting of collating, summarising, and reporting the results will be presented in the following section. The synthesis is a thematisation of issues in the included papers related to motherhood transition organised according to van Deurzen’s four life dimensions and illustrated by quotes. The search identified eleven eligible studies. The results will be organised around two overall headings: (1) Range of the literature

![Fig. 1. Building blocks search strategy.](image1.jpg)

![Fig. 2. First and second test of relevance.](image2.jpg)
and methodological approaches. (2) Categories of van Deurzen's four life dimensions related to transition to motherhood.

1. Range of the literature and methodological approaches

The papers covered topics related to existential meaning-making in transition to motherhood. They were identified in international nursing or midwifery journals, and in journals concerned with infant psychology and the psychology of religion. All papers were peer-reviewed before being published.

The studies originated from Canada (1), United States (2), United Kingdom (2), Continental Europe (2), Russia (1), Australia (2), and one study was multinational. The participants consisted of women only including both first time mothers and mothers of several children. Some were part of different religious settings, and some were part of a secular culture without information about religious affiliation. This review included data from eleven studies, including 349 women and an unknown number of participants in a multinational study on birth narratives.

As indicated in Table 1 all the included studies used qualitative interviews. Some were supplemented by other methods e.g. questionnaire surveys or tests. The interviews were conducted as individual interviews, and were semi-structured, based on an interview guide, except for a study, where the interviews were guided by open-ended questions (Smith, 1999), and a study where the interviews were organised as free-flowing conversations (Callister, 2004). Six studies used a particular interview guide developed by Nichols (1996). This interview guide consisted of questions related to expectations and perceptions of pregnancy, birth and being a parent, and some were related to what we interpreted as existential meaning-making. That could for example be the questions: ‘Would you consider childbirth to be a spiritual experience?’ or ‘How has the experience changed you and your feelings about yourself?’ (Nichols, 1996).

The participants were interviewed in their own language; however some of the Russian, Dutch, and Finnish mothers chose to be interviewed in English (Callister et al., 2001, 2007; Johnson et al., 2007). The interviews lasted from 20 minutes to 3 hours. In three papers there were no information on duration of interview (Smith, 1999; Callister et al., 2010; Miller, 2011b). Some participants were interviewed once, and some several times. A few of the interviews were supplemented by a test, for example the Utah Test for the Childbearing Year (UTCY) or functioned as supplement to a large questionnaire survey (Semenic et al., 2004; Mahoney et al., 2009; Miller, 2011b). Two were supplemented by for example diaries, pictures or medical records (Smith, 1999; Dahlen et al., 2010).

Validity of the studies was related to a transparent study designs and interpretations. Some researchers openly reflected on central preconceptions, for example the socio-cultural difference between the researcher and the socio-cultural context of the participants (Callister et al., 2010). It was most often not clear how the researchers' preconceptions related to the concepts of meaning or spirituality influenced the interpretative process, although one study had a very clear definition of the concept of spirituality (Mahoney et al., 2009). Therefore it remained unclear to what extent the papers’ findings were affected by the researcher's preconceptions of meaning and spirituality.

2. The four life dimensions related to motherhood transition

The studies were different in how they addressed existential meaning-making relevant to motherhood transition; some had strong orientations towards spirituality and religion, whereas others were oriented towards more secular existential issues. Moreover, the quotes and concepts presented below were identified in the papers’ descriptions of findings as well as in their reflective discussions. The findings are organised under four sub-headings related to the concepts of Umwelt, Mitwelt, Eigenwelt, and Überwelt (Van Deurzen, 2007; Van Deurzen-Smith, 1984). Central statements and findings in relation to the concepts are presented in Table 2.

Bodily dimensions of motherhood transition – Umwelt

Several informants described motherhood transition as a physical event primarily related to the experience of giving birth, and only secondarily to the postnatal period. In a study from Finland and in one of the studies from Australia, giving birth was viewed as a life-changing wellness experience, which could facilitate development, and as an experience of bodily fulfilment (Callister et al., 2001, 2010).

Some mothers described experiences of extreme pain, mixed with experiences of strength and as a way of getting to know themselves better, ‘I really went down to my earth. . . . The deep down feelings. You have a lot of strength. . . . I didn't know I had it’ (Johnson et al., 2007, p. 174). A British mother was convinced she was going to die (Miller, 2011b), and several expressed a loss of bodily control (Callister, 2004; Miller, 2011b). Some felt betrayed by their bodies when complications occurred (Dahlen et al., 2010), and others described traumatic birth as an unreal experience, ‘[The birth] was a blur’ (Callister et al., 2010, p. 5).

Relating in new ways – Mitwelt

Transition to motherhood created new relationships and changed existing ones. A new relation was established with the newborn child, but also the relation to the partner, other women, and health care professionals changed. Several participants explained how they experienced a new connectedness with women across generations (Callister, 2004; Callister et al., 2007, 2010). Furthermore, a British mother felt that there were underlying assumptions in the health care system, of her being happy, ‘you have to be really pleased [about the pregnancy] in order to be a proper mum’ (Miller, 2011b, p. 13). Also, one British mother expressed the difference between the expectations of control and the actual experience of control in the postnatal period, ‘I was in control of my own life and that's completely gone out of the window…and I would say that I hadn't really been prepared for those feelings of being out of control.’ (Miller, 2011b, p. 14)

<table>
<thead>
<tr>
<th>Method</th>
<th>Study</th>
<th>Year</th>
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<tbody>
<tr>
<td>Callister et al.</td>
<td>2001</td>
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<tr>
<td>Callister</td>
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<td>Callister et al.</td>
<td>2007</td>
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<tr>
<td>Johnson et al.</td>
<td>2007</td>
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<tr>
<td>Callister et al.</td>
<td>2010</td>
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<tr>
<td>Interview plus test1 or questionnaire survey</td>
<td>Semenic et al.</td>
<td>2004</td>
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<tr>
<td>Mahoney et al.</td>
<td>2009</td>
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<tr>
<td>Miller</td>
<td>2011</td>
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<tr>
<td>Interview plus diaries, pictures, videos or medical records</td>
<td>Smith</td>
<td>1999</td>
</tr>
<tr>
<td>Dahlen et al.</td>
<td>2010</td>
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1 Interviews took form as free-flowing conversation, not based on Nichols interviewguide.
2 For example the UTCY test: Utah test for the Childbearing Year measuring ‘childbirth competency’.

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<table>
<thead>
<tr>
<th>Author and year of publication</th>
<th>Participants</th>
<th>Findings related to Umwelt</th>
<th>Findings related to Mitwelt</th>
<th>Findings related to Eigenwelt</th>
<th>Findings related to Überwelt</th>
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<tr>
<td>Callister (2004)</td>
<td>Mix of women from Asia, North- &amp; Central America, Middle East, Scandinavia or South Africa. Number unknown.</td>
<td>Exhaustion, pieces of memory missing, crying. Felt empowered, like a hero, in tune, like a party, exhilarated, energetic, proud, good.</td>
<td>Connectedness to women across generations – respect, honour.</td>
<td></td>
<td>Mothers seeking to integrate the significance of birth in framework of life ‘The most significant thing I have ever done’ [(510)].</td>
</tr>
<tr>
<td>Semenic et al. (2004)</td>
<td>30 Orthodox Jewish Women living in Montreal, Canada.</td>
<td>Had overwhelming feelings of love, dedication, sacrifice, exhilaration, flood of emotions [(83)]. Feeling of fulfilment.</td>
<td></td>
<td></td>
<td>Used paradoxical words and phrases: Reverence, awe, miracle, ‘...painful but joyous.’ [(83)].</td>
</tr>
<tr>
<td>Callister et al. (2007)</td>
<td>24 Russian women in Skt. Petersburg.</td>
<td>‘I realized, that I am not alone, that there is another person. I am accountable for.’ [(23)]. Maternal grandmothers active regarding cultural practices ‘Me and my partner are richer spiritually’ [(23)]. Relates to generations of women who have also given birth. Historical connection.</td>
<td>‘I have changed’ [(23)]. Empowering to give birth.</td>
<td></td>
<td>Changes priorities: ‘decides what is important in life and what is not, what is pain and what is not in life’ [(22)]. ‘Things appear in a different perspective now.’ [(22)]. Several uses the phrase ‘spiritual experience.’ ‘Whether it is a person leaving the earth or comes to the earth, it is beyond what we can comprehend’ [(22)]. Had children christened, despite, that their parents were not religious.</td>
</tr>
<tr>
<td>Johnson et al. (2007)</td>
<td>14 Dutch women from Voorburg, Holland.</td>
<td>Fulfilment of purpose of body. Dutch women view childbirth as a wellness experience [(176)].</td>
<td>‘You have changed... my life becomes a hobby, and I became my child to a certain extent...’ [(175)].</td>
<td>Birth: extreme, introverted experience, where one can discover inner strength ‘The way you act towards birth – it is a mirror – get to know yourself better’ [(174)]. Birth as reward and empowering. Motherhood connected to feelings of completeness along with increased stress and responsibility. A wellness experience.</td>
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Table 2 (continued)

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<thead>
<tr>
<th>Author and year of publication</th>
<th>Participants</th>
<th>Findings related to Umwelt</th>
<th>Findings related to Mitwelt</th>
<th>Findings related to Eigenwelt</th>
<th>Findings related to Überwelt</th>
</tr>
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<tbody>
<tr>
<td>Mahoney et al. (2009)</td>
<td>178 married couples pregnant with first child from Ohio, USA. Interviews with a sub-sample of 23 high- or low-sanctifying couples.</td>
<td>Pregnancy connected to something greater than the couple (87% Both wives (W) and husbands (H)).</td>
<td>Life-changing wellness-experience. Difficult to describe the pain. Incredibly intense and painful.</td>
<td>‘Before you have a baby, it’s all about you.’ (5)</td>
<td>Being empowered by giving birth. Life-changing wellness-experience. ‘Creating your own baby and then giving birth to it – there is nothing like it’ (4).</td>
</tr>
</tbody>
</table>
| Callister et al. (2010)        | 17 Australian (Victoria) women who had given birth during the last 12 months. 14 VB, 3 sectio, 25–35 y Para 0=8, multipara=9 All in committed relationships 11 in birthing centres (average only 1,9%). | ‘...being convinced. I was going to die... hideously painful’ (13). | ‘Everything I planned went completely wrong’. (14). ‘The idea of being able to ‘cope’ with being a mother’. Before the birth women anticipate that they will naturally and instinctively know how to mother. Mothering did not come ‘naturally’ for most of the women. | Challenge of birth as symbolic of life. Having a connected experience with a Higher Power – profound life-altering experience. | Retrospectively could the women challenged the ‘myths of motherhood’ and ‘risk’ talking about how things had really been ‘returning to a new normal’.
| Miller (2011b)                | 17 UK women White, heterosexual, most self-identified as middle-class, employed and partnered. | ‘Before the birth women anticipate that they will naturally and instinctively know how to mother. Mothering did not come ‘naturally’ for most of the women. | Womanhood came to the surface. | Giving birth for the first time is, ‘... loss and gain, a time of joy and grief and never again will the woman be the same.’ (1982). Will never be the same again Significant event to be processed for the rest of her life. | Having a baby is a new beginning. Transformation of long term life projects. |
| Smith (1999)                  | Four UK women. White, long term relationship, employed, mid-20s. | Pregnancy leads to introspection (concentrating on inner world) but to focus on public world as well – both is happening. | Pregnancy leads to introspection (concentrating on inner world) but to focus on public world as well – both is happening. | Pregnancy leads to introspection (concentrating on inner world) but to focus on public world as well – both is happening. | Pregnancy leads to introspection (concentrating on inner world) but to focus on public world as well – both is happening. |

(continued)
Becoming a mother also changed the relationship with the partner. As a Russian woman said, ‘My relationship with the father of my baby has changed for the better. We call the baby ‘our happiness’’ (Callister et al., 2007, p. 23). A Finnish woman explained how she wanted her husband to witness the birth, but without touching her (Callister et al., 2001). A survey conducted among 178 Ohioan couples pregnant with their first child, indicated that most of the couples imbued their pregnancy with sacred qualities. The authors emphasised that spirituality was not lived in solitude or privacy, but that it was experienced through the relationship with a partner (Mahoney et al., 2009). Consequently, the experience of motherhood was highly influenced by the partners’ experience of parenthood. This was also seen among Russian women, where one informant described her relationship with her husband as spiritually richer after having given birth, ‘I love my husband even more. We are richer spiritually. We are parents now. It is a new status for us. We are developing support for each other, patience.’ (Callister et al., 2007, p. 23).

Relating in a new way was experienced also in the relationship with the newborn child and was viewed as life changing. A Dutch mother stated, ‘You have changed, you are not the same anymore…. So my life became my hobby. And me? I became [my child] to a certain extent.’ (Johnson et al., 2007, p. 175), an Australian mother said, ‘Before you have a baby, it’s all about you.’ (Callister et al., 2010, p. 5), and, more, a Russian mother said, ‘I have changed because I realized, that I am not alone, that there is another person I am accountable for.’ (Callister et al., 2007, p. 6).

Personal meaning – Eigenwelt

Several studies indicated that articulating the experiences of giving birth and of becoming a mother was challenging (Callister, 1992; Callister et al., 2001; Semenic et al., 2004). The statements of the studies related to Eigenwelt were predominantly related to the experience of birth, and some women stated explicitly that they had trouble articulating these experiences at all, ‘It is an experience without words. There are no words to describe this experience. Perhaps only a mother’s heart can feel it’ (Callister et al., 2001, p. 4). Other women described their experiences by means of paradoxical expressions. An Australian mother described giving birth for the first time, ‘It is a huge transition. It is a time of loss and gain, a time of joy and grief and never again will the woman be the same’ (Dahlen et al., 2010, p. 1982), and Mormon women stated, ‘I think it’s the greatest paradox of an experience that you can have…. I never experienced that kind of pain in a twenty-four-hour period in my whole life, but I never experienced that kind of joy either so it’s definitely pain and joy together in the same circle.’ (Callister, 1992, p. 10).

Viewing childbirth as a dramatic change in life was a general finding. It was articulated as: a new beginning (Smith, 1999), a life-changing experience (Callister et al., 2007, 2010), and a rebirth of yourself (Callister et al., 2001). Dutch mothers experienced changes related to their fundamental understanding of what was meaningful in life, ‘It has changed the way I look at the world’ (Johnson et al., 2007, p. 175). To some Mormon women the experience of birth led to changes in relation to Eigenwelt, when ‘The experience of childbirth made me grow up a lot. It really did. I’ve learned a lot about my capacity…. I just learned I have a lot more strengths than I thought I did.’ (Callister, 1992, p. 9). Orthodox Jewish women living in Canada described childbirth as an intense expression of all kind of feelings, ‘I felt every emotion you can go through. I cried and laughed. Everything.’ (Semenic et al., 2004, p. 83). Finnish mothers stated that ‘Giving birth represents both good and bad. It’s like life. It is difficult but you also have happiness’ (Callister et al., 2001, p. 30).

Transition to motherhood as an existentially changing event – Überwelt

Viewing childbirth as a spiritual experience was a general finding (Callister, 1992, 2004; Semenic et al., 2004; Callister et al., 2007, 2010). A Russian woman viewed transition to motherhood as a gateway to life. ‘Whether it is when a person leaves the earth or comes to this earth it is beyond what we can comprehend.’ (Callister et al., 2007, p. 22). Strong spiritual concepts were reported among Australian women, as ‘… having a ‘connected’ experience with a Higher Power, a profound or life-altering experience…’ (Callister et al., 2010, p. 5). Orthodox Jewish women explained how the meaning of birth was an integrated part of the spiritual dimension of their lives (Semenic et al., 2004). The multinational study by Callister reported the use of spiritual concepts ‘It is a very high spiritual experience, because the whole purpose of the world is bringing down a child, bringing down a soul. […] You feel God’s presence most tangibly when you have gone through birth’ (Callister, 2004, p. 513). Mormon women described motherhood in a religious language ‘being blessed with a baby’ (Callister, 1992, p. 9). This was also observed in the multinational study of birth narratives, where one informant felt a deep closeness to God, ‘When the baby was born I felt the Spirit of the Lord touch my heart […] I felt so close to him.’ (Callister, 2004, p. 513).

Several informants understood pregnancy as spiritual time (Callister, 1992; Semenic et al., 2004; Mahoney et al., 2009). Most of the respondents in the questionnaire survey by Mahoney et al. (2009) regarded pregnancy as a miracle (84% of the women). The mothers agreed largely to statements like ‘this pregnancy is sacred to me’, (76%), or ‘At moments, this pregnancy makes me very aware of a creative power beyond us’ (83%). Likewise, they agreed largely to items focusing on the manifestation of God in their pregnancies, ‘I sense God’s presence in this pregnancy’ (79%), and ‘God played a role in our getting pregnant’ (84%) (Mahoney et al., 2009, p. 16).

Discussion

In this section we discuss the findings above from Van Deurzen (2007) existentialist perspective by focusing on how the biopsychosocial-spiritual experience of motherhood transition may encourage an active questioning of fundamental life conditions.

The dimensions of motherhood transition related to van Deurzen’s Umwelt, cause questioning of bodily boundaries and strengths. The bodily dimensions of pregnancy and childbirth are the main focuses in the maternity services. The review above emphasises the experience of motherhood transition as a physical and painful experience, where pain is understood as an extreme and ultimate condition during birth. In the light of existential psychology it may be an expression of how life at its most spirited, can encompass the most painful experiences (Van Deurzen, 2007). However, giving birth is also described as a wellness experience (Callister et al., 2010), which is related to the possibility of getting to know oneself better.

It may be during extreme bodily challenges that we gain new existential insight of who we are, and birth may provide this to some women (Lacroix-Campling, 2000). In Davis-Floyd’s (2003) ‘technocratic’ model of care, with its emphasis on the ‘body-as-a-machine’ perspective pain is understood as an experience, to be avoided. However, in the light of Umwelt, the experience of giving birth is a confrontation of bodily limitations and possibilities (Van Deurzen, 2007) and may facilitate a paradoxical time and space, where pain and the bodily experience of birthing create new perceptions of being in the world (Binswanger, 1963).

In the dimension of Mitwelt new relationships encourage active questioning of belonging. Relationships are transformed in
transitions to motherhood. The most obvious new relationship is the one with the child, which changes women's priorities in life. From an existential perspective the relationship to the child is also ultimately a confrontation with fear of loss of the child, and therefore a confrontation with aloneness and failure (Van Deurzen, 2007). Viewing motherhood as a purely joyful event, which some British mothers felt obliged to do, leaves out that it is also a confrontation with human fragility (Choi et al., 2005; Miller, 2011b).

Some mothers express their relation to society as unfulfilled in the sense, that there is a difference between their expectations prior to becoming a mother and the actual experience. Miller (2011) states, that underlying the advice and support from the health care professionals, is the assumption of motherhood being natural and biologically determined. Consequently, if the expectant mothers follow the advices, motherhood will be unproblematic (Miller, 2011b). However, in the light of Mitwelt, new mothers face a new vulnerability in the new relationship with the child, and even regardless of appropriate preparation, they have to create new meaning in life, which cannot be prepared for, but develops during the transition to motherhood.

According to van Deurzen the dimension of Eigenwelt confronts us with life events that put our inner self at stake. Being put at stake is expressed by many participants in different ways, as for instance changes in priorities, a new beginning or even a rebirth of self. Stern (1999) called such new understanding of self a new ‘motherhood constellation’, which emerges as a new mindset during pregnancy. Pregnancy, birth, and the postnatal period is seen as life-reorganising, revealing a new vulnerability and the motherhood constellation is seen as a fundamental change in a woman’s life (Stern, 1999). The notion of the motherhood constellation then emphasises that becoming a mother is also the appearance of an authentic self, because the inner self is put at stake (Van Deurzen, 2007).

Several informants find it hard even to articulate their experiences during motherhood transition. This may be because the existing language in the health care system does not facilitate articulation of existential meaning-making issues (Peterson, 1996; Moloney, 2006; Lewallen, 2011). The language for articulating possible existential changes is non-existing, and the dominating ‘body as a machine’ approach (Davis-Floyd, 2003) leaves out a more integrative approach, where the existential meaning of motherhood transition is also considered vital.

In relation to the dimension of Überwelt, several informants experienced birth as fundamentally changing existing core values and ideals. As opposed to the life changes in the dimension of Eigenwelt, the changes and experiences in this dimension are aimed also at a spiritual dimension (Van Deurzen, 2007). This may be related to a transcendent dimension, but it covers also experiences related to a more common existential approach, for example the understanding of birth as a gateway to life, being hard to comprehend, in the sense that death can be hard to comprehend (Callister et al., 2007). Becoming a mother was by many participants expressed as a spiritual experience. For them, creating meaning in life was also related to transcendent ideals both fulfilling purposes of life, but to some mothers also strengthening the experience of a transcendent dimension, for example in the feeling of closeness to God (Callister, 2004; Mahoney et al., 2009).

Through the lens of existential psychology, motherhood transition encourages active questioning of life conditions. Paradoxically, the physical, psychological, social, and existential confrontation with life at its most spirited, during childbirth, may facilitate awareness of mortality as well. On one hand when confronted with death life may become reinvigorated, which may facilitate the ability to live fully, and on the other hand when confronted with a new life mortality may appear more present.

Limitations

A scoping approach was chosen as the method for this review. This study initially (in both the first and second test of relevance), dealt with a wide range of study designs and methodologies that would have been excluded in a systematic review, had we not chosen to exclude issues of quality appraisal. Nonetheless, we ended up with only peer-reviewed studies that in various ways addressed making existential meaning in transition to motherhood. This review is not the full story of transition to motherhood. The focus in this study is not traumatic childbirth, stillbirths, fear of birth, or lack of meaning when becoming a mother (Abram, 2008; Hogan, 2011).

Also the focus has not been on the partner, albeit we are aware that a partner can experience changes in existential meaning making, both related to the couple as a whole, and in his or her own experience (Miller, 2011a). The focus on transition in to motherhood related to mothers of healthy full born babies provides knowledge about a group of mothers, rarely explored, the non-pathological, not-traumatised mothers.

Conclusion (and implications for future research)

The way maternity care is organised reflects the core values of society. Birth as a rite of passage carries exactly these values to the life of the mother, and the family, which in the paradigm of the technocratic model means the belief in science, in technology and in some ways, female inferiority. This inferiority may be quite distinct in transition to motherhood, where so many risks are articulated regarding pregnancy, birth and the postpartum period (Davis-Floyd, 2003). Though, through the perspective of van Deurzen, new ways of seeing and being in the world seem to appear in transition to motherhood, new ways articulated in paradoxical words or being difficult to articulate at all, but deeply meaningful and powerful. In a ‘technocratic’ model of health care one of these core values, is the understanding of motherhood transition as being primarily a risky event (Davis-Floyd, 2003). This understanding, together with the expectation of motherhood to be a joyful event (Miller, 2011b), is then interwoven in the rite of passage of childbirth, in a way, where experiences of aloneness or fragility, are difficult to integrate as part of an uncomplicated transition, and therefore easily interpreted as pathological (Davis-Floyd, 2003).

Furthermore, a core value is the exclusive focus on biomedical issues as being decisive for health in the health care services, which sets the arena for motherhood transition. Hence issues related to potentially existentially changing experiences, are not considered important. Both Davis-Floyd and Klassen criticise the organisation of maternity care for being concerned primarily with the ‘technocratic’ model of care (Davis-Floyd, 2003) or ‘the medicalised birth’ (Klassen, 2001), leaving out perspectives related to a more ‘holistic’ perception of birth and perspectives related to spirituality. Without an integrative approach where personal meaning-making issues are discussed, the potential for growth during existential authenticity is not utilised.

The aim in maternity care seems to provide medically safe care, whereas perspectives related to psychological, social, cultural, or spiritual issues are not in focus in the same way (Waldenstrom, 1996; Downe, 2008; Sundhedsstyrelsen, 2009). The findings in this review suggest that transition to motherhood is considered a pivotal and paradoxical life event. Through the lens of existential psychology it can be interpreted as an existentially changing event, reorganising values and what makes life worth living and to some women, also being interpreted as a spiritual experience. Transition to motherhood raises existential questions about mortality and
meaning of life, and we should explore this field in research and in clinical work. Future research should explore existential meaning making related to motherhood transition, both in relation to specific spiritual or religious outlook on life, but also in relation to more secular worldviews.

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Paper 2 Existential meaning among first-time full-term and preterm mothers: A questionnaire study
Existential Meaning Among First-Time Full-Term and Preterm Mothers

A Questionnaire Study

Christina Prinds, MSc, RM; Dorte Hvidtjørn, PhD, MPH, RM, MPH; Ole Mogensen, DMSc;
Axel Skytte, PhD, MSc; Niels Christian Hvidt, ThD

ABSTRACT
Research indicates that childbirth is a time when a woman might experience existential disruptions and gain new perspectives on life. The 2-fold aim of this study was to investigate whether attitudes related to existential meaning among first-time mothers intensified and whether they differ between mothers who gave birth at full term and those who gave birth preterm. All first-time mothers who gave birth in Denmark in 2010 before the 32nd week of pregnancy and twice that number of full-term mothers (randomly sampled) were invited to participate in a national cross-sectional survey. Five core items concerning meaning in life, vulnerability of life, responsibility, thoughts about life and death, and "something bigger than oneself" were analyzed to compare mothers' attitudes on existential meaning. The overall response rate was 57% (617/913). Contrary to the hypothesis, attitudes related to existential meaning intensified to the same degree among mothers of full-term and preterm infants, with no statistically significant differences in terms of age, marital status, educational level, or birth method. Danish first-time mothers' attitudes related to existential meaning measured in 5 core items were intensified and almost similar, regardless of whether they gave birth full-term or preterm.

Key Words: childbirth premature, life purpose, motherhood, structured questionnaire

Becoming a mother is a transitional life event,1,2 during which existential reflections regarding the meaning of life may be reviewed.3,4 Finding meaning in life has been shown to be important to health and well-being.5-8 The 2-fold aim of this article was to investigate the intensification of attitudes related to existential meaning among Danish first-time mothers and to investigate whether these attitudes differ between mothers who have given birth full-term (FT mothers) and mothers who have given birth preterm (PT mothers).

The existential meaning of life is challenged by childbirth. This has been explored in psychology, anthropology, and fiction: new ideas of what makes life worth living emerge, and the experience of childbirth is seen as a milestone in life.9-11 In healthcare research regarding childbirth, existential meaning of life is briefly explored and can be challenged both in relation to the period of childbirth itself and, perhaps even more pertinent, in relation to preterm birth.12-14

First, the period of childbirth—giving birth full-term—may intensify existential reflections. Pregnancy, birth, and the postpartum period might give rise to existential reflections due to the enormous bodily changes involved and changes in psychological and social relations.3,15 Existential reflections have been explored in different cultural settings. A Dutch mother explained: “It changed the way I look at the world.”16(475)
Or, as an Australian mother explained in an interview study: It is a "... loss and gain, a time of joy and grief and never again will the woman be the same."17p.1890 A scoping review from 2013, which differs from a systematic review by including a variety of literature and study designs,18,19 emphasized that becoming a mother is considered a pivotal and paradoxical life event and has the potential to change existential meaning.20 According to the French obstetrician Michael Odent,21 the moment of birth might act as an existentially transformative experience and be explained as a rebirth of self22 or a creator of nonordinary states of consciousness.23

Second, giving birth preterm can intensify existential reflections as well.24 Preterm birth often includes transfer to the neonatal intensive care unit (NICU). Having a preterm birth is experienced as traumatic and life changing.24-27 Having a preterm infant is described as an ambiguous loss, as the parents mourn the expected full-term infant while fearing for the life of their premature infant.28 Feelings of shock after birth, guilt, and also misunderstanding of actions in the NICU are described.29-31 A Danish qualitative study pointed out experiences of distance in the relationship between the mother and infant, and another study pointed to the longing to be regarded as a "real mother" in the NICU.32

Overall, research in the area of childbirth as an existential intensifying process is still sparse, and there is hardly any research focusing on whether giving birth preterm brings about existential reflections to a greater extent than giving birth full-term. This investigation is descriptive and also explorative, since matters of existential meaning have not previously been addressed directly among first-time mothers in Denmark. Five core questions from a Danish national questionnaire survey from 2011 are used in the study. They were designed to provide descriptive information about the different types of existential meaning found in the 2 groups of mothers, which hypothetically would differ. The questions concern attitudes related to changes of meaning in life, life and death, the vulnerability of life responsibility, and thoughts about something bigger than oneself (see Table 1).

METHODS

Population and sample

In Denmark, there are excellent conditions for retrieving information about pregnancy and birth, since the free-of-charge antenatal care encompasses almost all pregnant women, and thereby makes the national registration of all pregnancies and births complete (99%).39 Information from the Danish Health and Medicines Authority was retrieved for all first-time mothers who gave birth in Denmark before the 32nd week of gestation between January 1, 2010, and January 1, 2011. First-time mothers who gave birth full-term (>37 completed weeks of gestation) in the same period were also included, because healthcare research about attitudes on existential meaning related to full-term childbirth and motherhood is sparse.40 Thus, to obtain the necessary power, twice as many full-term mothers, randomly sampled, were included.41 The group of PT mothers included both very preterm children (before 32 completed weeks of gestation) and extremely preterm

BACKGROUND

Existential meaning is a broad concept. The study is founded in European existential tradition stressing man's obligation to take a stand in life. In contrast to more religious countries, nothing is given per se in relation to concepts such as identity, the meaning of life, and responsibility.35 In this study, the understanding of existential meaning as explored and defined by the Austrian researcher Tatjana Schnell is used. Building on previous research on meaning, she has assessed mean-
Table 1. The 5 core questions

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Have your thoughts on the meaning and purpose of life changed in connection with having a baby? (10-point Likert scale)</td>
</tr>
<tr>
<td>39, 6</td>
<td>Battery of questions concerning the experience of becoming a mother, where respondents had to commit themselves to statements (4-point Likert scale):</td>
</tr>
<tr>
<td>39, 7</td>
<td>Having a baby had me realizing the vulnerability of life</td>
</tr>
<tr>
<td>39, 8</td>
<td>Having a baby had me thinking more about life and death</td>
</tr>
<tr>
<td>39, 9</td>
<td>Becoming a mother had me realizing my responsibility for myself and my child</td>
</tr>
<tr>
<td>39, 9</td>
<td>Becoming a mother had me thinking about something bigger than myself</td>
</tr>
</tbody>
</table>

children (before 28 completed weeks of gestation). Mothers experiencing perinatal loss (stillbirth after 22nd week of gestation or death within the first week of life) and mothers of twins were also included.

The initial retrieval of patient data from the Danish Health and Medicines Authority (n = 1291) was prepared, and a total of 921 mothers were evaluated for eligibility: 258 mothers had a preterm birth and 663 mothers a full-term birth. Eight mothers were excluded because of emigration or termination of pregnancy before the 10th week. The final sample assessed was thus 913 mothers, wherein PT mothers accounted for 28% and FT mothers accounted for 72%. A total of 517 mothers responded. The overall response rate was 57%, PT mothers accounting for 26% and FT mothers accounting for 74%. See the dropout flowchart (see Figure 1).

Survey development and scale construction

The questionnaire used for this study was developed in 2010-2011 to measure dimensions of existential meaning among Danish first-time mothers who gave birth full-term or preterm. In the field of psychology of religion, researchers propose detailed ways of measuring underlying dimensions of existential meaning. Attitudes and reflections of these underlying dimensions might not be captured in more global indicators of existential meaning and religiosity, as, for example, church attendance, which is used in the recurring European Value Survey or the International Social Survey Programme. Generic measures of meaning, spirituality, or religiosity are not culturally fitted to capture underlying elements of motivation, experiences, or beliefs and thus questions being developed in an American setting might not be applicable in the Danish culture, deemed among the most secular in the world.

The study was structured to investigate 2 underlying presumptions: first, the understanding of pregnancy, birthing, and the postpartum period as 3 successive periods, which both individually and as a whole may provoke reflections related to existential meaning; and, second, to differentiate between different forms of existential meaning.

The initial pool was comprised of items from various other surveys, for example, the European Value Survey (2008), the Views and Values Survey from the Danish Twin Registry (2009), and the third edition (2008) of the survey concerning religion from the International Social Survey Programme. Topics were furthermore identified on the basis of a qualitative pilot study (2008) concerning existential and religious reflections among Danish mothers of preterm children. In addition, topics were identified from healthcare research and sociological and psychological research, as well as from clinical experience and the expertise of members of the project group, colleagues in Denmark and abroad, particularly from Bowling Green State University. Draft questionnaires were tested among midwifery and public health researchers. On the basis of their review, the questionnaire was revised, then pilot-tested through face validation in 1 focus group interview and 6 individual interviews (n = 9), and further and final revisions were made. The final version of the questionnaire comprised 46 overall items categorized into 7 sections (see Table 2).
Table 2. Structure of the questionnaire survey in 7 overall sections

<table>
<thead>
<tr>
<th>Section</th>
<th>No. items in section</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>Demographic information</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>Pregnancy and birth in 2010—obstetric focus</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Meaning and purpose in life</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>Religious and spiritual questions and the general significance of such matters in the women's life</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>Experiences and perceptions related to pregnancy, focusing on dimensions related to existential secular, religious, or spiritual considerations</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>Experiences and perceptions related to birth, focusing on dimensions related to existential reflections of a secular, religious, or spiritual nature</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>Experiences and perceptions related to the postnatal period and being a mother, focusing on reflections of a secular, religious, or spiritual nature</td>
</tr>
</tbody>
</table>

The 5 core questions
The 5 core questions represent the dimensions of existential meaning when becoming a mother and thus they were all taken from 2 batteries of questions addressing this. As pointed out in the introduction, earlier research indicates that reflections and attitudes about existential meaning differ between FT and PT mothers, and the hypothesis was that the 5 core questions could shed light on whether and how these attitudes were present. The 5 core questions analyzed in this study are located in sections 3 and 7 in the questionnaire. One item was categorized as meaning and purpose in life, related directly to the life change when becoming a mother (Item 16). Four items were related to the experience of being the mother of a child: an item on thinking more about life and death, an item about responsibility, an item focusing on the vulnerability of life, and an item focusing on “thinking about something bigger than myself” (Item 39, subitems 6-9).

Procedures
The questionnaire survey was conducted between July and October 2011, 6 to 18 months after the mothers had given birth in 2010. Questionnaires were sent with a cover letter explaining the overall aim and content of the survey, ensuring protection of confidentiality of participants’ responses, and also providing the exact registration number from the Danish Data Protection Agency. The voluntary nature of participation was explained, including respondents' right to withdraw at any time. No incentives for participation were offered.

The questionnaires were returned in a sealed envelope with a code number, unique for each mother. Those who did not reply within 10 weeks were sent 1 reminder letter together with a new questionnaire. Data from the respondents were scanned by a private consultancy company (UNI-C), to minimize typing errors, and supplied to the researchers mainly in STATA and SPSS formats (for handling the long accounts related to the open-ended questions of experiences and reflections). The Regional Research Ethics Committee approved the study.

Statistical analysis
Results were analyzed using STATA (version 13.0). Categorical data were analyzed using the \( \chi^2 \) test of independence to generate \( P \) values. A \( P \) value of less than .05 was considered statistically significant.

The 5 core questions analyzed in this article were all statements on either a 10-point or 4-point Likert scale, anchored by “very much so” and contrasted by “not at all.” The respondents had to either approve or dismiss the statement. In the analysis, the Likert scales (“very much so” combined with “to some degree” vs “to a small degree” combined with “not at all”) were dichotomized to get a clearer picture of the answers and thus the differences between FT and PT mothers. Mothers of twins where 1 baby died and 1 survived were categorized as mothers of a living child. Results were presented as relative risks (RRs) with 95% confidence intervals. Analysis to adjust for confounding due to death of the infant (adjusted RR) was conducted.

RESULTS
Respondents compared with nonrespondents
This study had a response rate of 57%. There was no statistically significant difference in the response rate between FT mothers and PT mothers (FT = 58% vs PT = 53%). No statistically significant differences were found between respondents and nonrespondents related to cohabiting status, mode of birth, defined by cesarean birth versus vaginal birth (\( P = .88 \)), or neonatal outcome (\( P = .12 \)) (see Table 3).
Table 3. Characteristics of respondents versus nonrespondents of Danish first-time mothers invited to a cross-sectional survey on existential meaning in 2011

<table>
<thead>
<tr>
<th></th>
<th>Nonrespondents, n (%)</th>
<th>Respondents, n (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term mothers</td>
<td>396 (43)</td>
<td>517 (57)</td>
<td>.16</td>
</tr>
<tr>
<td>Preterm mothers</td>
<td>276 (70)</td>
<td>382 (74)</td>
<td></td>
</tr>
<tr>
<td>Married/civil partnership</td>
<td>120 (30)</td>
<td>135 (26)</td>
<td>.52</td>
</tr>
<tr>
<td>Not married, cohabiting*</td>
<td>688 (45)</td>
<td>217 (42)</td>
<td></td>
</tr>
<tr>
<td>Cesarean birth</td>
<td>277 (70)</td>
<td>145 (28)</td>
<td>.88</td>
</tr>
<tr>
<td>Vaginal birth</td>
<td>119 (30)</td>
<td>327 (72)</td>
<td></td>
</tr>
<tr>
<td>Mothers not experiencing perinatal death</td>
<td>38 (10)</td>
<td>38 (10)</td>
<td>.12</td>
</tr>
<tr>
<td>Mothers experiencing perinatal death</td>
<td>35 (10)</td>
<td>35 (10)</td>
<td></td>
</tr>
</tbody>
</table>

*Widows and divorced mothers not included (1.6%).

Full-term mothers compared with preterm mothers
A total of 517 participants responded, aged between 17 and 50 years, with a mean age of 29.6 years. Eighty-nine percent reported living with a partner (43% were married, 46% were cohabiting in a committed relationship), 57% had completed a bachelor's or master's degree, and 9% reported having no vocational education at all. A total of 28% had a cesarean birth, with statistically significant differences between the 2 groups (see Table 4).

Existential meaning
Overall, PT and FT mothers were found to have similar scores (see Table 5), although statistically significant differences were found in 2 items: the item concerning the vulnerability of life (item 39.6) showed a small marginal difference relative to FT versus PT mothers (RR = 1.07), whereas the item concerning intensification of thoughts about life and death (item 39.7) showed PT mothers to have these thoughts to a higher degree than FT mothers (RR = 1.14). More than 75% of the mothers responded affirmatively to the statement that becoming a mother changed meaning and purpose in life (item 16), with no statistically significant differences between PT and FT mothers. More than 90% of the mothers responded affirmatively to the item concerning responsibility (item 39.8), with no statistically significant differences between FT and PT mothers. Overall, 64% of the mothers responded affirmatively to the statement "thinking of something bigger than myself" (item 39.9).

Respondents who either did not answer (between 2% and 5%, mainly mothers experiencing perinatal death, data not shown) or answered "I don’t know" (<1%) were excluded from the analyses. Overall, 80% of the respondents answered "very much so" or "to some degree" to the 5 core questions. As a result, subanalyses including only these 2 options were conducted. There were no statistically significant differences between FT and PT mothers in these subanalyses (data not shown).

DISCUSSION
Contrary to the hypothesis, the search for a fundamental sense of meaning in life among Danish first-time mothers did not differ between FT and PT mothers. However, the similar attitudes related to existential meaning between FT and PT mothers presumably have different

Table 4. Characteristics of full-term mothers versus preterm mothers (N = 517)

<table>
<thead>
<tr>
<th></th>
<th>All N (%)</th>
<th>Term mothers, n (%)</th>
<th>Preterm mothers, n (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean, y</td>
<td>29.6</td>
<td>29.5</td>
<td>30.9</td>
<td>.44</td>
</tr>
<tr>
<td>Living with a partner</td>
<td>461 (89)</td>
<td>341 (89)</td>
<td>120 (88)</td>
<td>.72</td>
</tr>
<tr>
<td>Bachelor’s level</td>
<td>187 (32)</td>
<td>113 (31)</td>
<td>44 (35)</td>
<td>Ref.</td>
</tr>
<tr>
<td>No vocational education</td>
<td>47 (9)</td>
<td>38 (10)</td>
<td>11 (9)</td>
<td>.54</td>
</tr>
<tr>
<td>Short education</td>
<td>187 (34)</td>
<td>125 (34)</td>
<td>42 (33)</td>
<td>.55</td>
</tr>
<tr>
<td>Master’s level</td>
<td>122 (25)</td>
<td>52 (25)</td>
<td>30 (23)</td>
<td>.52</td>
</tr>
<tr>
<td>Cesarean birth</td>
<td>145 (28)</td>
<td>80 (21)</td>
<td>65 (48)</td>
<td>.00</td>
</tr>
<tr>
<td>Having experienced perinatal death</td>
<td>35 (7)</td>
<td>3 (0.3)</td>
<td>34 (25)</td>
<td>.00</td>
</tr>
</tbody>
</table>
Table 5. Questions about existential meaning-making among Danish mothers

<table>
<thead>
<tr>
<th>Items (item no.)</th>
<th>Full-term, n (%)</th>
<th>Preterm, n (%)</th>
<th>RR (95% CI)</th>
<th>Adjusted RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changed meaning (16)</td>
<td>273 (74)</td>
<td>101 (78)</td>
<td>1.05 (0.94-1.17)</td>
<td>1.05 (0.83-1.19)</td>
</tr>
<tr>
<td>Vulnerability of life (39.6)</td>
<td>320 (68)</td>
<td>112 (94)</td>
<td>1.03 (1.03-1.16)</td>
<td>1.07 (1.00-1.15)</td>
</tr>
<tr>
<td>Thinking more of life and death (39.7)</td>
<td>279 (75)</td>
<td>106 (88)</td>
<td>1.16 (1.06-1.27)</td>
<td>1.14 (1.03-1.26)</td>
</tr>
<tr>
<td>Responsibility for my child and myself (39.8)</td>
<td>360 (97)</td>
<td>107 (91)</td>
<td>0.94 (0.89-1.00)</td>
<td>0.99 (0.95-1.04)</td>
</tr>
<tr>
<td>Something bigger than myself (39.9)</td>
<td>231 (64)</td>
<td>72 (64)</td>
<td>0.99 (0.85-1.17)</td>
<td>0.98 (0.83-1.17)</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; RR, relative risk.
*RRs of preterm mothers more often agreeing to the 5 core questions, raw and adjusted for death of the infant.
†RR adjusted for death of the infant.

underlying explanations. The hypothesis of the study of PT mothers being existentially challenged by childbirth emerged from the pilot study and the body of literature on parenting preterm children.31,31,52 The assumption was, therefore, that PT mothers would have higher scores than FT mothers on the 5 core items due to the trauma they had experienced. Suprisingly, FT mothers responded to the core questions to the same degree. This supports the body of literature seeing the childbirth period itself as facilitating existential reflections, independent of such traumatic circumstances as giving birth preterm.1,9,17

Mothers who had preterm births the highest scores on the questions concerning vulnerability of life and thoughts about life and death, although FT mothers also had intensification of those thoughts. Perhaps, because giving birth in a very bodily way confronts one with life at its newest and strongest moment but at the same time with the risk of losing it.28 The difference in responses between FT and PT mothers relating to these 2 questions may be due to the very concrete experience of life being fragile, since the preterm infant is tiny and vulnerable.42

The item concerning "something bigger than myself" is the only statement among these 5 core questions pointing to something outside oneself (item 39.9). "Something bigger" can be interpreted in several ways, for example, as being part of a new unit, consisting of the child and the mother, which is more than being alone in the world.3,9 It could also be interpreted as an awareness of a transcendent dimension, either in a conventional religious sense or in a more spiritual, individualistic sense, as seen in an analysis of narrative data from culturally diverse women.53 A transcendent dimension has also been found to be present, but not articulated, due to the biomedical focus in today's healthcare system.34,55 The link between spirituality and childbirth has never been explored in a Danish secular context, and it is not the focus of this article. However, in light of this finding of first-time mothers thinking of "something bigger than themselves," it seems relevant to explore also spiritual and religious considerations among Danish first-time mothers.

The lack of differences in responses between FT and PT mothers can be interpreted as if both groups of mothers responding to the survey basically found transition to motherhood to be existentially transformative. The lack of difference cannot be explained because of age, educational level, civil status, mode of birth (defined by cesarean birth vs vaginal birth), nor to the death of the child. It can be due to the design of the questionnaire or the analytical procedures. Therefore, responses were stratified differently in subanalyses, and yet with similar results—the differences between FT and PT mothers regarding attitudes related to existential meaning are very few.

An explanation may be found in the timing of the survey postpartum. A recent Dutch interview study found parents of very preterm infants (<32 weeks) to have more negative perceptions and experiences than those of moderate preterm and full-term infants.96 This may be due to the timing of the interviews in that study, which were conducted 1 month postpartum, when many of these parents were still at the NICU.56 In contrast, in this study, the women had become mothers between 6 and 18 months prior to the survey, which may have affected the perception of being a mother and the childbirth period: The first critical period had then passed and a more secure attachment to the infant had probably been established.

Moreover, the lack of differences in responses could be due to the difference in maternity services. In Denmark, there is an extensive service offered to mothers and not just for mothers who have experienced traumatic childbirth, for example, postpartum sessions with a doctor or a midwife, focusing on experiences and perceptions of birth and becoming a mother. The importance of sharing the story of birth and becoming a mother, especially for first-time mothers, has been
stressed also in an Australian study. This difference in the existing maternity services may affect responses in this study, since PT mothers have already had the chance to share perceptions of becoming a mother.

The results of the study contrasted with the hypothesis. However, similarities between PT and PT mothers have been found elsewhere. In relation to the concept of hopelessness, a recent Polish study found equal levels of hopelessness between 2 groups of mothers who had also given birth either full-term or preterm. Also, more recent research has focused on posttraumatic growth being higher in relation to giving birth preterm than among PT mothers. In a longitudinal study on posttraumatic growth, the levels of posttraumatic growth were highest in the group of PT mothers, emphasizing both possible outcomes of stressful events and, at the same time, the need to acknowledge childbirth full-term to be existentially challenging.

Overall, this study suggests that becoming a mother is of profound significance and might act existentially transformative—also in a secular context. This needs to be addressed clinically, for instance, through facilitating questions during midwifery or obstetrical consultations, but most of all as an underlying acknowledgement of the existential significance of becoming a mother, which will then need to be reflected in guidelines and organization of maternity care.

Strengths and limitations

In the European Value Survey, last conducted in Denmark in 2008, the response rate was 51%, and in social sciences in general, respondent rates are often below 50%. The response rate in this study was 57%. Denmark is regarded one of the most secular countries in the world, which may affect both the character of reflections related to existential meaning and the articulation of such reflections, as they are considered private matters. Answering questions on existential or religious issues is found to be a very private matter, perhaps due to the fact that religion being very individualized. Therefore, the response rate was unexpectedly high.

The study may be limited by the explorative nature of the questionnaire, since it is not validated quantitatively but pilot-tested through face validation. Also, no power calculations were made beforehand, since the assumption was that a longer timespan from birth to answering questions could cause recall bias. Therefore, all first-time Danish mothers who gave birth preterm in a certain timespan of 1 year were included.

The study may be limited by the method used. Qualitative data would have provided nuanced and rich information, which is not available from using a questionnaire. A qualitative pilot study informed this investigation, where the aim was to describe the potential intensification of attitudes related to existential meaning. To explore the individual nuances of these attitudes, qualitative research is needed.

CONCLUSION

In this national survey, Danish first-time mothers responded affirmatively to 5 core items related to existential meaning. Becoming a mother for the first time is viewed as a significant and life-changing event, regardless of having a full-term or preterm birth. Questions of life, death, vulnerability, and responsibility are brought to the forefront.

More detailed research in this field is needed, taking into consideration parity, gestational age at birth, cultural expectations, personal experiences, and maternal religiosity/spirituality. Also, there is a need to investigate not only matters of secular existential meaning but also spiritual ways of making existential meaning, while using different research methodologies.

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Paper 3 Prayer and meditation among Danish first-time mothers – a questionnaire study
Prayer and meditation among Danish first time mothers – a questionnaire study

Submitted for Evidence-based complementary and alternative medicine (October 2014)

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Abstract
In transition to motherhood, women might experience disruption and new perspectives in bodily, psychological, social and existential ways. The aim of this study was twofold. First we investigated the existential dimension of motherhood transition in a secularized context, through practices of prayer and meditation. Second we described the relationship between time of birth (term/preterm) and the prayer/meditation practices of the mothers.

Data were gathered from a nationwide questionnaire survey conducted during the summer 2011. All Danish women who gave birth in 2010 before the 32nd pregnancy week, and double the number of mothers who gave birth at full term were included (total n=913). The questionnaire consisted of 46 overall items categorized in seven sections, which independently cover important aspects of existential meaning-making related to becoming a mother. The respondent rate was 57% (n=517).

Moments of praying or meditation 6-18 months post partum were reported by 65%, and mothers who responded affirmatively, practiced prayer more than meditation. We did not observe differences in terms of affirmative responses to prayer or meditation between mothers of full term or preterm born children, not even after controlling for perinatal or post partum loss, mode of delivery, age, status of cohabiting or education.
Introduction

In recent decades there has been an increasing amount of research on the manifold forms of making meaning at the end of life among patients and relatives. Some of this research addresses existential, spiritual or religious considerations and needs, and suggests that they intensify when facing the end of life. In despite of this, research suggests that such considerations are not met adequately in the health care system.

Spiritual ways of making meaning is a focus in the field of palliative care related to the end of life, but it is not addressed at all in maternity services in Denmark. In relation to the beginning of life, health care research related to existential meaning-making remains limited, even in the paradoxical situations where the beginning and end of life sometimes coincide, for example when giving birth preterm. Previous research suggests that the impact of considerations related to the beginning of life may be similar to those at the end of life. These events are gateways that encircle life, and both of them may facilitate considerations related to existential meaning making. This study concentrated on a specific practice of existential meaning-making, namely prayer and/or meditation when becoming a mother for the first time in a secular context.

Motherhood as an existentially transformative process has been explored in psychological and anthropological research. A recent literature review argues that the joy of birth has been neglected in literature, thus leaving out any spiritual or sacred meaning. Childbirth has been understood as a journey into motherland a miracle a religious act and even as a sacrament. In a society known to be the most secular in the world, it may seem provocative to study first time motherhood in such terms. Recent Danish research among other groups of patients, though, has found that they intensified reflections related to existential meaning-making during illness. In relation to cancer, a recent survey among patients with severe lung cancer showed that 64 % had some belief in God and/or a spiritual power. An interview study among young leukemia patients found that existing beliefs related to meaning-making (both religious and non-religious) prior to cancer were strengthened during illness. Ausker described one of her informants having experienced becoming a mother as a life threshold similar to her experience of leukemia. In their analysis of the religiosity of Danes in a life time perspective, Andersen et al found beliefs to be quite stable, independent of age, but sensitive to intense life events, as for example childbirth or serious illness.

Giving birth preterm may be even more existentially transformative since the period of the beginning of life is potentially confronted with the end of life. Mothers of preterm born children suffer from post-traumatic stress and anxiety, and are found to develop potentially problematic attachment styles in the mother-child relation. Preterm birth is the leading cause of perinatal mortality and morbidity globally, which, in many countries ensures special care of parents in maternity services. This is also the case in Denmark. The impact of preterm childbirth on motherhood was studied in Denmark among parents of 66 neonates in 2008. Among the mothers, 30% met the criteria for Post Traumatic Stress Disorder (PTSD) either clinically or sub-clinically. In relation to motherhood of preterm born children in general, practices of existential meaning-making have not previously been studied in Danish health care research. Other aspects of preterm childbirth in Denmark have been studied recently, for example the challenge concerning the construction of motherhood related to a moderate preterm child, or the potential significance of emergency baptism. On the basis of previous research related to preterm birth, we hypothesized the mothers of preterm born children would practice prayer/meditation more than mothers of full term born children.
Existential meaning is a multidimensional construct explored in different ways. Whereas religion in an earlier European context was an obvious and normal socio-cultural source of meaning during illness, it seems to have lost its importance in western medicine today. The increased focus on science-based and evidence-based medicine might also induce a more private process of making meaning, since issues of an existential character are not obviously important in medical research. To study existential meaning-making, Danish researchers, on the basis of a literature review, have proposed a new conceptual framework for existential meaning-making, consisting of three dimensions: cognition, practice and importance. In this study we focus on the practice dimension of existential meaning making, especially religious or spiritual practices, namely prayer and meditation.

Meditation practices have been studied in a randomized controlled trial among nulliparous women in Denmark, focusing on the effect of the practice of hypnosis during birth in relation to pain and the experience of childbirth. The study showed that overall, women randomized to hypnosis had a better childbirth experience than the two control groups. In antenatal education classes in Denmark, there has been a tradition of spiritually oriented practices like visualization and mindfulness and yoga, which made us hypothesize that meditation practices are more widespread than prayer among Danish first time mothers.

Prayer and/or meditation practices have been studied among other groups in Denmark. 480 hospitalized people and their relatives at Copenhagen University Hospital (Rigshospitalet) participated in a questionnaire survey about faith in 2006. Sixty-two percent replied affirmatively to the question: "Do you take some moments of prayer, meditation or contemplation or something like that?" When asked in population based values surveys, Danes don't pray that much. According to the last European Values Study (EVS) (2008) among 1507 Danes, 50% percent responded to the statement “How often do you pray to God outside of religious services?” with 9 options ranking from Every day to Never, the choices being dichotomized between less often and never. Of these answers, 55% were in the “A few times a year” or “Less often than a few times a year” options. 48% reported that they never prayed. When asked “Do you take some moments of prayer or meditation or something like that?” 48% replied affirmatively and 51% replied negatively. In a Danish questionnaire survey exploring familial resemblance in religiosity among 6707 twins from 2009, 48% gave a positive answer to the statement “How often do you pray to God outside of religious services?” 51% reported that they never prayed. The mean age in the twin study was 29 years, 60% of the respondents being women. There seems to be a difference between responses from hospitalized patients and relatives and the more population-based surveys on prayer, indicating that a practice such as prayer or meditation increases when being hospitalized.

Mothers in other countries highlight giving birth as something holy, a spiritual experience or blessed event. We have no knowledge as to whether Danish mothers turn to religious or spiritual dimensions of making meaning of life, including practices of prayer and meditation, or whether there are different practices between mothers giving birth at term or preterm. Hence we do not know if or how to address this dimension of life and health in the maternity service, or whether we should differentiate between care for mothers of preterm born children.
children or children born at term. The aim of this study was thus firstly to investigate practices of prayer and meditation among Danish first time mothers, and secondly to distinguish between mothers who gave birth at term (FT) or preterm (PT) in terms of their respective prayer/meditation practices.

**Materials and methods**

We used data from a cross sectional questionnaire survey among Danish first time mothers who gave birth in 2010. We retrieved information from the Danish Medical Birth Register about all mothers who gave birth before the 32nd week of gestation in Denmark and twice that number of women who gave birth at full term, randomly sampled. Mothers experiencing perinatal or post partum loss (stillbirth after the 22nd pregnancy week or death post partum, covering up till 100 days post partum) were also included. Mothers of twins, who lost one of them, were categorized as mothers of a living child. In the present paper, mothers who gave birth at full term will be called full term (FT) mothers, whereas mothers who gave birth before the 32nd pregnancy week go as preterm (PT) mothers. We included only first time mothers who had given birth in 2010, in order to reduce the risk of recall bias if the experience of becoming a mother was older than 18 months. The free of charge antenatal care in Denmark encompasses almost all pregnant women (99%) 39, which makes the national registration almost complete.

In July 2011, a postal questionnaire about existential meaning making in motherhood was sent to all participants along with a covering letter. Reminder letters were sent 10 weeks later 39. No incentives were given. The Regional Research Ethics Committee approved the study, and the exact registration number from The Danish Data Protection Agency was submitted in the covering letters as well. Responses were scanned by a consultancy company (UNI-C), and delivered to researchers in STATA-format and, for long accounts, in SPSS. We conducted random checks for consistency between scans and the original questionnaires. All questions from validated questionnaires are reported in an original translated version, and translation of the remaining questions into English were done firstly by the first author, and secondly by a professional translator (MC).

**Survey construction**

The questionnaire consisted of 46 general items categorized in seven sections, which independently cover the most important aspects of existential meaning-making related to becoming a mother and the pregnancy, birth and post partum periods respectively. The questionnaire was structured to differentiate between different forms of meaning-making. Existential meaning-making is not linked merely to religious or spiritual orientations. Especially in Northern Europe it is also derived from more secular viewpoints 30. As explained in the introduction, in 2010 the Danish researchers, la Cour and Hvidt, proposed a conceptualization in which the existential is the broader concept, encompassing both existential philosophical values and ideas without any transcendent foundation (secular), as well as meaning orientations related to spiritual and/or religious notions 30. They propose to apply the three domains: knowing, doing and being to the three dimensions of secular, spiritual and religious meaning-making within a “matrix”, to explore consistency between the concepts of cognition, practice and importance. The three concepts of knowing (cognition), doing (practice) and being (im-
portance) were introduced by the sociologist Fishman and have been found to have good explanatory power in the analysis of the Danish items related to meaning-making in the European Values Study.

The structure of the questionnaire was based on this “matrix”, as well as an underlying understanding of the pregnancy, birth and post partum periods as periods that may actualize existential reflections either partially or as a whole. As we have mentioned, we focused in this particular study on those items in the questionnaire that concerned the practice dimension, in particular prayer and meditation.

The items in the questionnaire were developed on the basis of a pilot study, a qualitative interview study among Danish mothers of preterm born children in 2008, as well as on the basis of various other surveys, for example items from the EVS (2008), the Views and Values Survey from the Danish Twin Registry (2009) and the third edition (2008) of the survey concerning religion from the International Social Survey Programme. Items were identified also from an extensive literature review focusing on the existential dimensions of the transition to motherhood among new mothers in other Western oriented countries. According to Nørregaard-Nielsen and Østergaard, draft questionnaires were tested among midwifery and public health researchers. On the basis of this process, the questionnaire was revised and then pilot-tested through face-validation with new mothers in one focus group interview and six individual interviews.

Core question

In this paper we focus on and differentiate the item “Do you take some moments of prayer, meditation or contemplation or something like that?” (See item 28 below). This item was designed to provide knowledge about religious and spiritual practices among Danish mothers. It has been used in the EVS 2008 and in a survey among hospitalized patients and their relatives at the Danish Rigshospitalet. In contrast to the previous use of the item, in this questionnaire the options for answering the question were specified, partly to distinguish between religious and spiritual practices and partly to explore how Danish mothers understand such practices. The respondents were allowed to select one or more of the different forms of praying or meditation. Furthermore, we looked into three supplemental items (18, 22 & 25), which were used previously in the EVS or ISSP to search for internal consistency between the dimensions of knowing, doing, and being. Consistency between the dimensions is represented when for example respondents who accept prayer as a dialogue with God (item 28), are also admitting to some kind of belief in a God (item 25). See table 1:

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Do you take some moments of prayer, meditation or contemplation or something like that? (no/yes)</td>
</tr>
<tr>
<td></td>
<td>If yes, please explain using the phrases below how you understand prayer or meditation:</td>
</tr>
<tr>
<td></td>
<td>• Prayer in church or at other religious gatherings</td>
</tr>
<tr>
<td></td>
<td>• Prayer as an inner dialogue addressed to God</td>
</tr>
<tr>
<td></td>
<td>• Prayer as an inner dialogue addressed to ‘something greater than myself’</td>
</tr>
</tbody>
</table>
- Prayer as a physical act, e.g. kneeling, folding your hands
- Prayer as music, e.g. hymns, spirituals
- Meditation as a physical activity
- Meditation as a spiritual activity
- Meditation as a means to maintaining or achieving good mental health
- Something else, please state what:

Three items concerning existential reflections in the knowing- and being dimensions:

18 (being) Independently of whether you go to church or not, would you say you are...
- A religious person
- A non-religious person
- A convinced atheist
- Don’t know

22 (doing) How often do you pray to God outside of religious services? Would you say...
- Every day
- More than once a week
- Once a week
- At least once a month
- Several times a year
- Less often
- Never
- Don’t know

25 (knowing) Which of these statements are closest to your own idea of God?
- I don’t believe in God
- I don’t know whether there is a God and I don’t believe there is any way to find out
- I don’t believe in a personal God, but I do believe in a Higher Power of some kind
- I find myself believing in God some of the time, but not at others
- While I have doubts, I feel that I do believe in God
- I know God really exists, and I have no doubts about that
- I don’t know

**Statistics**

Data was analyzed using Stata version 13.0. Categorical data were analyzed using the chi-square test of independence and binomial regression was used to control for confounding. Difference in age was tested using a two-sample t-test. $P < 0.05$ was considered statistically significant. Respondents answering, “don’t know” were included in all analyses, whereas missing or faulty answers were omitted in analyses.

We reduced the item concerning prayer to God outside religious services (item 22) into four subgroups. Firstly, one group praying regularly, divided between “at least once a month” and “several times a year”. Secondly, the biggest group of respondents, reporting prayer several times a year or less often than that, and thirdly, a group reporting “never”. We reduced the item concerning the idea of God (item 25) into four subgroups as well. The first three sub-
groups based on each of the first three possibilities of answers and the fourth subgroup based on a sum of the last three possibilities: first, one group of non-believers; second, a group of agnostics; third, (the biggest group) reporting belief in a higher power; and fourth, a group reporting belief in some kind of god.

**Results**

The initial retrieval of 1,291 mothers was reduced by 378, either because of a research or address protection (n=370), or caused by emigration or termination of pregnancy before the 10th week (n=8). Of the 913 mothers included, 517 responded, preterm mothers accounting for 26% and full term mothers accounting for 74%. See the dropout flow chart below (Figure 1).

**Figure 1**

**Dropouts**

In relation to differences between respondents and non-respondents, no statistically significant difference was found related to marital/cohabitant status or mode of birth, defined by caesarean birth versus vaginal birth ($p=0.88$) or neonatal outcome ($p=0.12$). Also there was no statistically significant difference related to time of birth (full term=58% vs. preterm=53%) (See table 2). Eighty-two percent of the respondents were members of the Evangelical Lutheran Church in Denmark compared to 72% of the non-respondents with a statistical significant difference between respondents and non-respondents ($p<0.001$).
Table 2. Characteristics of respondents versus non-respondents, numbers (column percentages) of Danish first-time mothers invited to a cross-sectional survey on existential meaning-making in 2011

<table>
<thead>
<tr>
<th></th>
<th>Non-respondents n(%)</th>
<th>Respondents n(%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term mothers</td>
<td>276 (70)</td>
<td>382 (74)</td>
<td>0.16</td>
</tr>
<tr>
<td>Preterm mothers</td>
<td>120 (30)</td>
<td>135 (26)</td>
<td></td>
</tr>
<tr>
<td>Age, years mean</td>
<td>396(27.9)</td>
<td>517(29.6)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Married/civil partnership</td>
<td>174 (44)</td>
<td>217 (42)</td>
<td>0.52</td>
</tr>
<tr>
<td>Not married, cohabiting*</td>
<td>214 (54)</td>
<td>294 (56)</td>
<td></td>
</tr>
<tr>
<td>Membership of the Danish national church: Yes</td>
<td>283(72)</td>
<td>423(82)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>113(28)</td>
<td>94(18)</td>
<td></td>
</tr>
<tr>
<td>Caesarean birth</td>
<td>119 (30)</td>
<td>145 (28)</td>
<td>0.88</td>
</tr>
<tr>
<td>Vaginal birth</td>
<td>277 (70)</td>
<td>372 (72)</td>
<td></td>
</tr>
<tr>
<td>Mothers not experiencing perinatal or post partum loss</td>
<td>358 (90)</td>
<td>482(93)</td>
<td>0.12</td>
</tr>
<tr>
<td>Mothers experiencing perinatal or post partum loss</td>
<td>38 (10)</td>
<td>35 (7)</td>
<td></td>
</tr>
</tbody>
</table>

* Widows and divorced mothers not included (n=14).

Respondents

A total of 517 participants with a mean age of 29.6 years returned a completed questionnaire. We did not find statistically significant differences between FT and PT mothers in relation to age, educational level or way of living. Eighty-nine percent reported living with a partner. Fifty-seven percent had completed a bachelor’s or master's degree, whereas 9% reported having no vocational education at all. However, we did find differences in the mode of birth and the experience of perinatal or post partum death, since the prevalence of caesarean births and loss of a child are higher among PT mothers. Overall, 28% had a caesarean section, and 7% experienced the loss of the child with statistically significant differences between the two groups (see table 3).

More than half (56%) of the mothers reported being a religious person (in the Danish version the wording is more similar to “a believing person”), and 33% reported some kind of belief in God, when asked what their own idea of God was. Belief in some kind of higher power was reported by 37%. Praying outside religious services once a month or more was reported by
21% and 39% reported prayer as rarely as less often than once a year. There were no statistical significant differences between FT and PT mothers in the three items concerning beliefs.

Table 3. Characteristics of full-term mothers versus preterm mothers, numbers and column percentages.

<table>
<thead>
<tr>
<th></th>
<th>All N(%) (n=517)</th>
<th>FT mothers N(%) (n=382)</th>
<th>PT mothers N(%) (n=135)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socioeconomic factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, years mean</td>
<td>29.6</td>
<td>29.5</td>
<td>29.9</td>
<td>0.44</td>
</tr>
<tr>
<td>Living with a partner</td>
<td>461 (89)</td>
<td>341 (89)</td>
<td>120 (88)</td>
<td>0.72</td>
</tr>
<tr>
<td>Bachelor level</td>
<td>157 (32)</td>
<td>113 (31)</td>
<td>44 (35)</td>
<td>0.88</td>
</tr>
<tr>
<td>No vocational education Short</td>
<td>167 (34)</td>
<td>125 (34)</td>
<td>42 (33)</td>
<td></td>
</tr>
<tr>
<td>Master level</td>
<td>122 (25)</td>
<td>92 (25)</td>
<td>30 (23)</td>
<td></td>
</tr>
<tr>
<td><strong>Obstetric factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caesarean section</td>
<td>145 (28)</td>
<td>80 (21)</td>
<td>65 (48)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Having experienced perinatal or post partum loss</td>
<td>35 (7)</td>
<td>1(0.3)</td>
<td>34(25)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td><strong>Spiritual basic factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious person</td>
<td>287 (56)</td>
<td>212 (56)</td>
<td>75 (56)</td>
<td>0.15</td>
</tr>
<tr>
<td>Prayer to God outside service, at least once a month</td>
<td>105 (21)</td>
<td>79 (22)</td>
<td>26 (20)</td>
<td>0.7</td>
</tr>
<tr>
<td>Prayer to God outside service, approx. once a year</td>
<td>195(39)</td>
<td>140(38)</td>
<td>55(42)</td>
<td>0.7</td>
</tr>
<tr>
<td>Idea of God, believing in higher power</td>
<td>181(37)</td>
<td>137(38)</td>
<td>44(34)</td>
<td>0.43</td>
</tr>
<tr>
<td>Idea of God, believing in God</td>
<td>162(33)</td>
<td>114(31)</td>
<td>48(38)</td>
<td>0.43</td>
</tr>
</tbody>
</table>
Prayer and meditation

Of the 517 respondents, 334 (65%) confirmed having prayed or meditated, with a difference between FT and PT mothers \( p=0.05 \) which vanished when controlling for perinatal or post partum loss and mode of delivery \( p=0.4 \). RR of prayer/meditation related to perinatal or post partum loss alone was 1.25 (data not shown). Of the mothers, 166 denied having prayed or meditated and 17 did not answer the question. The mothers preferred prayer rather than meditation (286 versus 89 mothers) See table 4 and 5.

Table 4: Core question: Do you take some moments of prayer, meditation or contemplation or something like that? Relative risk proportion (RR) of PT mothers 96(71%) versus FT mothers 238(62%).

<table>
<thead>
<tr>
<th>Item 28 (95%CI)</th>
<th>RR</th>
<th>Adjusted RR*</th>
<th>Adjusted RR**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prayer and/or meditation</td>
<td>1.14 (0.99-1.30)</td>
<td>1.08 (0.92-1.26)</td>
<td>1.06 (0.91-1.25)</td>
</tr>
</tbody>
</table>

* Adjusted for perinatal or post partum loss.
** Adjusted for perinatal or post partum loss and mode of delivery.

Table 5: Prayer or meditation among first time mothers in Denmark.

<table>
<thead>
<tr>
<th>Prayer</th>
<th>Meditation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
</tr>
<tr>
<td>Yes</td>
<td>234</td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
</tr>
</tbody>
</table>

When dichotomizing the options of prayer or meditation, we found no statistically significant differences between FT mothers and PT mothers in their choices of prayer \( p=0.86 \) or meditation \( p=0.30 \) (data not shown). Respondents could choose several of the different forms of prayer or meditation. 11 did not choose any of the options, even though they had said that they prayed or meditated in the introductory question. Among the different forms of prayer, most mothers responded to the option of “prayer as an inner dialogue addressed to God” (46%), followed by “prayer as an inner dialogue addressed to something greater than myself” (40%). In relation to meditation, most mothers responded to the option “meditation as a means to maintaining or achieving good mental health” (19%). We conducted sub-analyses by investigating every possibility of praying or meditation, and found no statistically significant differences in responses from FT and PT mothers in any the items. See Figure 2 below.
Figure 2: Preferred forms of prayer/meditation among Danish first time mothers. Percentages of the total number of mothers responding affirmatively to prayer/meditation respectively are listed in each bar. See full title of each bar in table 1.

**Forms of prayer or meditation**

<table>
<thead>
<tr>
<th></th>
<th>At term</th>
<th>Preterm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church etc.</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Dialogue God</td>
<td>47</td>
<td>44</td>
</tr>
<tr>
<td>Dialogue greater</td>
<td>39</td>
<td>42</td>
</tr>
<tr>
<td>Prayer physical act</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Prayer music</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Med. Physical</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Med. Spiritual</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Med. Mental health</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>Sthg else</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Discussion**

In the discussion, we address firstly the number of mothers responding affirmatively to prayer/meditation. Secondly, we address the differences when separating prayer and meditation in their answers, and thirdly, the lack of differences between FT and PT mothers.

In this cross-sectional survey among first time mothers in a secular society, we found that 65% of the mothers responded affirmatively when asked if they had prayed or meditated. This is higher than the 2008 EVS, where 48% women responded affirmatively to the same question, and even higher than the survey among patients and relatives at Rigshospitalet, where 62% participants responded affirmatively to the question. In relation to the analyses of data from the EVS, it is suggested that having a child may be one of those life events that intensify religiosity. This is found in a US longitudinal study focusing on lifelong religious development as well. Andersen and colleagues find the doing-dimension to be stable (measured by church attendance), whereas the dimension of “knowing”, for example the conviction that the church is where their spiritual needs are best met, is affected by significant life events. The first time mothers in this survey are not hospitalized, but seem to be engaged in existential meaning-making in a very concrete way. Prayer and meditation are concrete “doing” practices related to a transcendent dimension. The consent to such practices by the majority of the respondents challenges our understanding of these practices being mainly present in relation to traumatic life events such as sickness or death, including traumatic birth.

The respondents in this survey are mothers, not fathers, and perhaps mothers are more attuned to prayer and meditation? In 2012, the sociologists Trzebiatowska and Bruce proposed childbirth as one of the possible reasons for women being more religious than men. One
aspect is the focus on birth in most religions, which naturally brings women more in contact with religious reflections and rituals. Another aspect highlighted by Trzebiatowska and Bruce is the focus on the biological body in relation to pregnancy and childbirth, a focus seen in several religious settings, e.g. in relation to the regulation of food or sexuality. It is a focus likewise discernible in more spiritually oriented environments, as for example yoga or healing, where health-related benefits seem to be an important motivational factor for participating. This last aspect of the focus on the biological body fits the data in this survey, where the main motivational cause of meditation among respondents was the urge to achieve good mental health (19% reported this). In this perspective, meditation can be seen as a lifestyle activity in line with healthy food and a fit body in order to stay balanced and energetic. Perhaps Danish mothers pray or meditate due to the ostensibly natural connection between birth and religious rituals, but it seems that more women consent to prayer or meditation than actually participate in religious rituals. This points to an intrinsic and individualistic religious and spiritual orientation – prayer or meditation are not connected to a special community, but can also be practiced alone when pregnant or as a way of coping or caring when giving birth or in the postnatal period. An individualistic approach was also found in a Dutch nationwide survey comparing different kind of praying. Banziger et al argue likewise that their finding of a high affirmative response to what they describe as “meditative and impulsive prayer”, is characteristic in secularized society, because of the individualized and non-institutionalized forms of religiosity and spirituality.

When separating prayer and meditation, this individualism in a prayer- or meditation practice persists. The initial hypothesis of more mothers responding affirmatively to meditation than prayer, due for example to the focus on spiritually oriented practices in antenatal classes, was not supported. The majority of mothers reported having prayed (286 versus 89), and among them, most endorsed the statement of having addressed their prayer to a personal God. However, in the background question on prayer to God outside religious services, only 21% agreed, which supports the notion that questions loaded with a conventional understanding of religiosity as church attendance lead to more reluctant responses.

Andersen and Lüchau highlight the apparent paradox that religion has become more important to Danes, but individualized as well, when looking at religious data from the European Values Study. It seems that many contemporary Danes combine seeking answers in religion with doing this in their own individual way: there is a growing confidence in the church providing relevant answers to existential questions, but a receding belief in the church as a special authority. In line with this, Danish researchers suggest Danes have trouble finding comfort in traditional religious beliefs, as Rosen found in a qualitative study in 2008 among Danes in the Copenhagen area: “I’m a believer – but I’ll be damned if I’m religious” (Rosen 2009:161). When asked about their idea of God (the knowing dimension), more mothers in this survey reported belief in a higher power (37%) than belief in some kind of God (33%). “A higher power” is seen as a spiritual dimension of existential meaning-making. This points to some inconsistency according to “the matrix” structure of the questionnaire, since most mothers at the same time affirmed some practice of prayer (the doing dimension), which is interpreted as a religious way of existential meaning-making. When most mothers report praying, this finding clashes to some extent with the expected widespread move from religious to more spiritual practices, including from prayer to meditation, predicted, for example, by two sociologists claiming a “spiritual revolution” on behalf of belief in a personal God. After all, our findings fit in with other recent Danish data suggesting that Danes have not en-
tirely left religious beliefs and practices in favor of practices of a more spiritual nature, of which meditation is an example.\textsuperscript{56}

One reason for the preference for praying rather than meditating among these new mothers may be that people in life transitions are emotionally dependent on strong relations. On the basis of neuroscientific research, Danish researchers argue, that improvised prayer is comparable to normal interpersonal interaction.\textsuperscript{57} In prayer, the conceived relation to a God greater and beyond oneself may be a higher good than that gained in secular meditation practices, often characterized by contemplation within oneself.\textsuperscript{58} For the new mother, the relation to her child has already had immense impact on her life, and perhaps, therefore, relating not only to a transcendent dimension (as in meditation), but also to a transcendent relation (as in praying to someone outside oneself) becomes important.\textsuperscript{59}

So - at the same time as conventional religious beliefs are decreasing, women in this survey seem to practice praying as an inner dialogue with either a personal God or “something bigger than myself”. There seems to be a combination of the highly individualistic way of making existential meaning of life combined with a widespread use of religious and spiritual practice deriving from a conventional religiously affiliated way of making meaning.

We looked into prayer and meditation practices among first time mothers of both preterm and full term children. Research suggests that traumatic childbirth, for example giving birth preterm, may actualize existential reflections, including religious practices, which ought to be addressed clinically.\textsuperscript{60} Therefore we expected to find a statistically significant difference in the use of prayer and meditation practices. We found a difference (not statistically significant though) between FT and PT mothers, however it vanished when controlling for perinatal or post partum loss and mode of delivery. It seems that the loss of a child to a significant degree determined the finding related to prayer/meditation among PT mothers. When looking into specific ways of practicing prayer and meditation, we did not find any differences between FT and PT mothers either. The lack of difference contrasts with other findings from studies comparing experiences from FT and PT parents, showing PT parenthood to be traumatizing also in a long-term perspective.\textsuperscript{61-63} Some studies find no differences when comparing FT and PT mothers, for example in relation to hopelessness, where ways of coping after having given birth have been compared in a Polish study.\textsuperscript{64}

In relation to prayer/meditation, the impact of childbirth and of becoming a mother seem to affect the mothers in this study to equal extents. Although we did not find any statistically significant differences between FT and PT mothers in the study, it is obviously still possible that they differ in underlying motivations. Prayer and meditation practices may be motivated by a variety of feelings and experiences. Feelings of grief, loss and betrayal are described among mothers of preterm born children\textsuperscript{65,66}, and may motivate prayer and meditation practices, as well as the described feelings of gratitude and joy when becoming a mother.\textsuperscript{12,14}

**Limitations**

Of the 1291 mothers, only 71% could be contacted, mainly due to address and research protection. The final respondent rate of 57% may seem low, but is not unusual. The 2009 Views and Values Survey from the Danish Twin Registry had a respondent rate of 55%, even though twins are usually willing participants.\textsuperscript{67} We sought to resist selection bias through the drop-out analysis, thereby making the differences between respondents and non-respondents transparent.\textsuperscript{47}
The apparently high proportion of respondents replying affirmatively to prayer and meditation, and the lack of differences between preterm and full term mothers, may be due to the time frame, since the mothers in this study gave birth 6-18 months prior to the survey. Answers might have differed if mothers had been asked earlier in the post partum period, assumedly increasing the difference between FT and PT mothers. The use of prayer and/or meditation has been investigated earlier in Denmark among other groups of people, but not the distinction between different kinds of religious activities, which renders a comparison of the data impossible. Due to the cross-sectional design, changes over time in answers cannot be compared either. We still lack knowledge of the frequency of religious or spiritual practices among new mothers, of their motivation to practice prayer/meditation, and of the content or significance of prayer/meditation in relation to making meaning of having become a mother.

**Conclusion**

Firstly, we found that 65% of Danish first time mothers reported having had moments of prayer or meditation 6-18 months post partum. Secondly, when separating prayer and meditation in the core question, we found that mothers practiced prayer more than meditation. Amongst the five prayer options, most of the practicing mothers chose the option, "prayer as an inner dialogue addressed to God" (46%). Amongst the three meditation options, most mothers chose the option, "meditation as a means to maintaining or achieving good mental health" (19%). Thirdly, we found no differences in the frequency of prayer or meditation between full term and preterm mothers, even when controlling for perinatal or post partum loss or mode of delivery.

It seems that specific practices of existential meaning-making, namely prayer and/or meditation, are indeed found among Danish first time mothers, and yet we know only little about the character or importance of these practices. To do so, qualitative research is needed to supplement this explorative overview. Also more research is needed to include attitudes and the nature of existential meaning-making among new fathers.

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