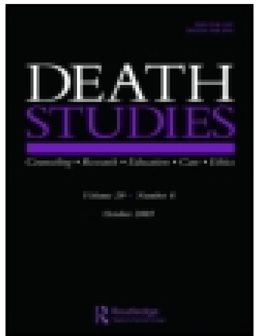

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Parents' religious/spiritual beliefs, practices, changes and needs after pregnancy or neonatal loss—A Danish cross-sectional study

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ABSTRACT
This study describes religious/spiritual beliefs, practices, changes, and needs among parents bereaved by pregnancy or neonatal loss, and assess gender differences in religiosity/spirituality, in this population. A cross-sectional study using data from the Danish cohort *Life After the Loss* was conducted. Data were gathered from a questionnaire survey collected between January 2016 and December 2019. Among 713 respondents, several answered in the affirmative to items related to religious/spiritual beliefs and practices. Some experienced changes in religious/spiritual beliefs and practices, and some wished to talk to someone about these questions. Women reported higher levels of religiosity/spirituality than men.

In Denmark, approximately 1,810 children die every year in the 2nd or 3rd trimester of pregnancy, during birth or in the neonatal period (4 weeks post-partum) (Statistik, 2018a, 2018b; TiGrAB, 2018). Consequently, about 3,620 parents are affected annually. Pregnancy and neonatal loss often generate immense and long-lasting grief (Bakker & Paris, 2013) and are related to high rates of emotional and psychological distress and diagnoses (Badenhorst & Hughes, 2007; Burden et al., 2016; Cacciatore, 2012; Michon et al., 2003). Facing pregnancy or neonatal loss, bereaved parents often have their core beliefs shattered and their meaning of life challenged, sometimes leading to existential and spiritual struggle (Alvarenga et al., 2019; Bakker & Paris, 2013; Krosch & Shakespeare-Finch, 2017; Nuzum et al., 2017). The complexity of the psychological crisis experienced by parents increases in line with gestational age at the time of loss (Daugirdaitė et al., 2015) and is also greater among parents bereaved by the termination of pregnancy due to fetal anomaly (Korenromp et al., 2007; Maguire et al., 2015).

In a study of 103 women who had experienced pregnancy loss, Cowchock et al. (2010) concluded that neither intrinsic nor extrinsic religiosity or positive religious coping predicted less severe grief in perinatally bereaved parents. However, religious struggle and negative religious coping were associated with more severe grief.

Some parents with affiliated religiosity experienced a period of religious disorientation after pregnancy or neonatal loss. Many felt that the higher power did not meet their expectations, since "He" did not protect the baby, and prayer was not effective. These parents felt betrayed, cursed, abandoned or punished by God (Bakker & Paris, 2013; Nuzum et al., 2017), and the tension between believing in a divine power and yet still facing suffering challenged some parents (Nuzum et al., 2017). Bakker and Paris (2013) also found that many religiously unaffiliated parents experienced a period with similar existential disorientation just as profound as parents with affiliated religiosity.

In contrast, many bereaved parents found religiosity/spirituality helpful in coping with the crisis and seemed to draw on their religiosity/spirituality to make meaning and to sustain them emotionally (Bakker & Paris, 2013; Robinson et al., 2006). Furthermore, religious/spiritual resources can be helpful for the bereaved when adjusting to the loss (Rubin et al., 2012), and the death of a baby can lead to a deeper reliance on faith as a supportive anchor in the turbulence of grief (Cacciatore & Ong, 2012). Thus, although religiosity/spirituality can be the locus of struggle for some parents bereaved by pregnancy or

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neonatal loss, it can be a source of support for others in similar circumstances (Alvarenga et al., 2019).

Bereaved parents may need spiritual/religious support when coping with grief (Rubin et al., 2012), and many express a need for spiritual/religious care (Meert et al., 2005; Petro, 2015; Sadeghi et al., 2016). However, some parents report that their deeper spiritual needs were not adequately addressed while in hospital, although most parents valued and availed of chaplaincy services during their time in hospital (Nuzum et al., 2017). Several researchers call for a culture of acceptance and integration of spiritual perspectives and care when working with parents experiencing pregnancy or neonatal loss (Cacciatore & Bushfield, 2007; Cowchock et al., 2010; Meert et al., 2005; Nuzum et al., 2017; Robinson et al., 2006).

Denmark is considered by some to be the most secular country in the world (Zuckerman, 2008). Much of the existing research concerning religious/spiritual struggles and needs has been conducted in more religious societies and thus potentially transfers poorly into a secular context (Hvidt et al., 2017). However, studies from a secular Danish context indicate that Danes experience intensified existential and religious considerations when facing major life events such as birth, severe illness or death (Ausker et al., 2008; Hvidt et al., 2018; la Cour, 2008; Prinds et al., 2018), and this may be especially true for women (Ausker et al., 2008). In general, several studies globally have found that women are more religious than men (Hvidtjorn et al., 2014; Trzebiatowska & Bruce, 2012; Voas et al., 2013).

There is a risk that, when living in a secular culture, patients may step into a crisis religiously/spiritually unprepared and untrained in expressing religious/spiritual considerations; consequently, the need for clinicians attentive to religious/spiritual needs and struggle would be warranted even in secular populations (Hvidt et al., 2017, 2018). Therefore, it is important to consider whether religious/spiritual care would be relevant in a secular society. Patients' spiritual needs and how to take care of these aspects in Danish healthcare is described as a "taboo-related clinical blind spot" (Hvidt et al., 2018, p. 276). It has been disregarded in Danish healthcare through decades but there has been a demand for it in recent years (Hvidt et al., 2018; Prinds et al., 2018).

To our knowledge, no previous studies have investigated if religious/spiritual beliefs, practices, changes, and needs exist among parents experiencing pregnancy or neonatal loss in Danish secular society. Therefore, mapping the field is crucial to improve care offered to these parents. Furthermore, possible gender differences concerning religiosity/spirituality in this population appear to warrant further examination. The aims of this study were twofold: first, to describe religious/spiritual beliefs, practices, changes, and needs among parents bereaved by pregnancy or neonatal loss in a Danish context; and second, to assess gender differences in religiosity/spirituality in this population of bereaved parents.

Material and methods

Design and data collection

The study was performed using data from the Danish cohort *Life after the loss* (Hvidtjørn et al., 2018). This cohort includes parents who have lost a child during pregnancy (from gestational week 14), during birth, or in the neonatal period (4 weeks postpartum). Included were parents bereaved by miscarriage, termination of pregnancy due to fetal anomaly, stillbirth or neonatal death (Hvidtjørn et al., 2018). In Denmark, termination, for this reason, can be permitted by a regional counsel, usually until gestational age week 22 (Haekkerup, 2014). Stillbirth is defined as intrauterine fetal death from gestational age week 22 (DSOG, 2014). To simplify, the term child is used to cover any outcome of pregnancy throughout the manuscript, although legally in Denmark a child is defined as either live-born at any gestational age or stillborn born after 22 gestational weeks.

Data were collected from web-based questionnaires distributed to parents 4–8 weeks after the loss. However, later inclusion was also possible. Parents not responding received reminders 3 and 6 weeks after receiving the first questionnaire. Data were collected and managed in OPEN (OPEN, 2020) using the Redcap electronic data capture tool (Harris et al., 2009). The data collection began in January 2016 and is still ongoing. It commenced in the Region of Southern Denmark, was expanded in 2017 to the Central Denmark Region, and in the summer of 2018, all regions of Denmark were included. In the present study, data collected up to December 12, 2019, were used.

Ethics

The participating parents received verbal and written information about the study from healthcare staff before leaving hospital. After signing up with an email address, they received further information and a questionnaire. Access to the questionnaire was only

possible when the parents had consented to participation. Mothers and fathers were asked to reply to the questionnaire individually (Hvidtjørn et al., 2018).

Theoretical framework

The conceptual *Meaning Making Matrix* (MMM) grid was used as a framework to enable analysis of the complex concepts of religiosity and spirituality (la Cour & Hvidt, 2010). This grid has been used as a methodic and theoretic framework in previous Nordic research investigating existential meaning-making (Andersen et al., 2011; Hvidt, 2015; Prinds et al., 2014, 2016).

Using MMM, researchers interpret "existential" as an overarching concept covering secular, spiritual and religious meaning-making in human life (Hvidt et al., 2017; la Cour & Hvidt, 2010). We acknowledge that religiosity and spirituality are different phenomena. However, while the focus of this study was to assess if bereaved parents living in a secular society relate to something of transcendence (not specifically what), "religiosity" (interpreted as belief in God) and "spirituality" (interpreted as belief in something bigger/something divine) were used as one joint concept because they both cover some kind of transcendence in meaning-making (Andersen et al., 2011; la Cour & Hvidt, 2010). Likewise, prayer and meditation were combined to assess any religious or spiritual practices. As the focus of this study was religiosity/spirituality, the secular domain in the MMM was not considered.

MMM distinguishes between the three dimensions of knowing, doing and being. "Knowing" correlates to *cognition* (referring to beliefs and convictions); "doing" correlates to *practice* (referring to the practices affiliated with these beliefs); "being" correlates to *importance* (referring to the experienced implication these beliefs have in the life of a person) (Hvidt et al., 2017; la Cour & Hvidt, 2010). The grid was used to provide an overview of a complex topic by enabling differentiation between the *cognition*, *practice,* and *importance* dimensions in religious/spiritual meaning-making.

Data collection

The "Life after the loss" survey was constructed with a combination of basic information in relation to sociodemographics and obstetric variables, state-of-the-art psychometrical testing by validated questionnaires, and ad hoc questions specifically prepared for the study (Hvidtjørn et al., 2018). In the present study, questions concerning socio-demographic, obstetric and religious/spiritual topics were used.

Variables, generated from basic information (sociodemographic and obstetric data), are displayed in Table 1. The part of the "Life after the loss" questionnaire addressing parents' religious/spiritual meaning-making is displayed in Table 2. These 18 questions consist of questions from The European Value Survey (World Value Survey, 2006) supplemented by questions on existential values developed for a study exploring existential meaning and motherhood transition (Hvidtjørn et al., 2018; Prinds et al., 2014). In this study, each question concerning religiosity/spirituality was classified into the *cognition*, *practice,* and *importance* dimensions (Table 2). Since we interpreted religious/spiritual needs and change in religious/spiritual *cognition* and *practice* as an expression of religious/spiritual importance (the experienced implication of belief in the life of a person), questions concerning needs and change were classified into the importance dimension.

Statistical analysis

The proportion (*n*, %), mean and standard deviation (SD), or median of each obstetric, sociodemographic, and religious variable was calculated for the whole study population and for men and women, respectively. The categorical variable "gender" was the exposure, and data collected through the questions in Table 2 were the outcome variables in the hypothesis testing. Regarding the continuous outcome, linear regression with the robust Huber-White sandwich estimator for standard errors was applied to consider detected deviations from the normality assumptions. Coefficients with 95% confidence intervals (95% CIs) were estimated. Odds Ratios (OR) with 95% CIs were estimated for the categorical outcomes, applying logistic regression. Both regression models were conducted as crude and adjusted regressions, adjusting for educational level, marital status, type of loss, previous loss, and assisted fertilization.

Parents answering "do not know" were included in the descriptive statistic but excluded in the regression models. All missing values were also excluded from the analysis. In addition, categorical variables with more than two categories were dichotomized before the analysis. Unrealistic outliers were changed to missing.

In the Region of Southern Denmark, all invited parents were registered in a database enabling a calculation of the response rate in this region. The

Table 1. Study characteristics of parents experiencing bereavement, grouped by gender ($N = 713$).

	Total	Women	Men
Socio-demographic factors:			
	Mean (SD)	Mean (SD)	Mean (SD)
Age (years)	31.8 (5.1)	31.3 (5.0)	32.9 (5.1)
	N (%)	*N* (%)	*N* (%)
Marital status			
Living alone	18 (2.7)	18 (4.0)	0 (0.0)
Living with a partner	332 (50.4)	229 (50.2)	103 (50.7)
Married	309 (46.9)	209 (45.8)	100 (49.3)
Educational level			
Short education (<12 years of school attendance)	193 (29.3)	122 (26.8)	71 (35)
Bachelor's level (12–14 years of school attendance)	308 (46.8)	229 (50.3)	79 (38.9)
Master's level (>=15 years of school attendance)	157 (23.9)	104 (22.9)	53 (26.1)
Having other children			
Yes	365 (55.4)	261 (57.2)	104 (51.2)
No	294 (44.6)	195 (42.8)	99 (48.8)
Obstetric factors:			
Type of loss			
Termination of pregnancy due to fetal anomaly	185 (29.1)	126 (28.6)	59 (30.3)
Miscarriage	170 (26.7)	119 (27.0)	51 (26.2)
Stillbirth/Neonatal death	281 (44.2)	196 (44.4)	85 (43.6)
Previous loss			
Yes	45 (6.8)	31 (6.8)	14 (6.9)
No	614 (93.2)	425 (93.2)	189 (93.1)
Assisted fertilization			
Yes	117 (18.2)	83 (18.5)	34 (17.4)
No	526 (81.8)	365 (81.5)	161 (82.6)
Child alive at birth			
Yes	118 (18.4)	86 (19.4)	32 (16.2)
No	523 (81.6)	357 (80.6)	166 (83.8)
Time from bereavement to responding the survey	Days	Days	Days
Lowest numbers of days	31	31	31
Highest numbers of days	635	635	564
First quartile	32	32	34
Median	45	45	47
Third quartile	81	96	62

Note. The total of respondents in each characteristic varies from $n = 636$ to $n = 659$ due to missing information.

calculation of the response rate was based on these available data since this registration was not performed in the other four regions of Denmark. Data were analyzed using Stata Version 15.0 (StatCorp, Texas, USA).

Results

The response rate was 39%. The study included responses from 713 bereaved mothers and fathers from all five regions of Denmark, 456 (69.2%) were women and 203 (30.8%) were men (54 missing values). The mean age was 31.8 years (SD 5.1).

Men and women had different characteristics regarding educational level and having other children (Table 1). Responses showed similar levels of experience for men and women regarding previous loss, assisted fertilization, and type of loss. For type of loss, 29% of the parents were bereaved by the termination of pregnancy due to fetal anomaly, 27% by miscarriage, and 44% by stillbirth or neonatal death. Half of the parents completed the questionnaire within 45 days after bereavement and 75% within 81 days (Table 1).

Religious/spiritual characteristics

Religious/spiritual cognition

A substantial number of the parents answered in the affirmative to questions of religious/spiritual *cognition*. Almost 60% confirmed a belief in God or something bigger/something divine, and around 45% of the parents confirmed a belief in life after death. Around 50% expressed the belief that the dead child was in heaven or was nearby and/or believed that they would be reunited with the child after death (Table 3).

Religious/spiritual practice

Most parents (80%) either attended church or another religious session at religious celebrations (i.e., baptism). A small portion never attended church (14%). Asked if they practiced prayer or meditation, 42% of the parents answered in the affirmative. Of these, 72% prayed monthly or more than monthly (Table 4).

Religious/spiritual importance

On the 10-point scale (1 = "not at all" and 10 = "yes, a lot") to indicate if thoughts about meaning and purpose in life were changed after being bereaved, 25% of

Table 2. Survey questions about religious/spiritual meaning-making related to the structure of the conceptual meaning making grid (la Cour & Hvidt, 2010).

Religious/spiritual meaning-making

Cognition/knowing
- Which of these statements suits you best? (I believe in God, I believe in something bigger/something divine, I am not a believer, Other)
- Do you believe in life after death? (yes/no/do not know)
- I believe my dead child is in heaven (yes/no/do not know)
- I feel my dead child is nearby (yes/no/do not know)
- I believe to be reunited with my child when I die (yes/no/do not know)

Practice/doing
- How often do you attend church or another religious session? (weekly, monthly, at religious celebrations (i.e., baptism, Christmas etc.), never)
- Does it happen, that you are practicing prayer, meditation, or something alike? (yes/no/do not know)
- How often do you pray/meditate? (daily, weekly, monthly, less than monthly, never)

Importance/being
- Did your thoughts about meaning and purpose in life change after being bereaved? (continuous outcome measured on a ten-point scale. One = "not at all" and ten = "yes, a lot")
- Did your belief/not belief change after being bereaved? (yes/no/do not know)
- If yes, how did it change? (Strengthened/weakened)
- Do you experience your faith as a support? (yes/no/do not know)
- Did your belief in life after death change after being bereaved? (yes/no/do not know)
- Did it change, how often you attend church or another religious session after being bereaved? (yes/no/do not know)
- Did the frequency of prayer/meditation change after being bereaved? (yes/no/do not know)
- Did you talk to someone about life and faith questions after being bereaved? (yes/no/do not know)
- Have you been missing to talk to someone about life and faith questions after bereavement? (yes/no/do not know)
- If talking to someone about life and faith questions after bereavement, with whom? (Partner, family, friend, doctor, midwife, nurse, pastor/imam, undertaker, other) (the parents were able to state more than one answer)

the parents reported 2 or below, 50% 6 or below and 75% 8 or below. One-quarter (25%) experienced change in belief/not belief. Of those, 66% described belief as strengthened. Half of the parents experienced faith as supportive. Some confirmed change in belief in life after death (13%) and change in prayer practices (20%). Asked if they had been talking to someone about life and faith questions, 39% of the parents answered in the affirmative and 10% replied to have missed talking to someone about life and faith questions after being bereaved (Table 5). Among parents talking to someone about life and faith questions, the main part talked to their partner ($n = 166$), a pastor/imam ($n = 157$), family ($n = 111$), or a friend ($n = 88$). Fewer talked to a midwife ($n = 36$), a nurse ($n = 11$), or a doctor ($n = 11$).

Associations between gender and attitudes related to religious/spiritual cognition, practice, and importance

Differences between genders were found on all parameters in the religious *cognition*, *practice*, and *importance* dimensions. Women answered to a greater extent in the affirmative regarding questions related to the three dimensions.

Religious/spiritual cognition

Compared to men, women were more inclined to believe in God/something bigger/something divine (OR 2.17; 95% CI 1.50–3.15), to believe in life after death (OR 3.66; 95% CI 2.13–6.29), to believe the

Table 3. Attitudes related to religious/spiritual *cognition*, among all respondents and by gender ($N = 713$).

Cognition	Total *N* (%)	Women *N* (%)	Men *N* (%)
Faith			
Believe in God	112 (19.0)	92 (22.2)	20 (11.4)
Believe in something bigger/something divine	233 (39.5)	176 (42.4)	57 (32.6)
Not a believer	193 (32.7)	107 (25.8)	86 (49.1)
Other	52 (8.8)	40 (9.6)	12 (6.9)
Believe in life after death			
Yes	221 (45.9)	178 (51.3)	43 (31.9)
No	129 (26.8)	74 (21.3)	55 (40.7)
Do not know	132 (27.4)	95 (27.4)	37 (27.4)
Believe the dead child is in heaven			
Yes	309 (52.6)	242 (58.7)	67 (38.3)
No	168 (28.6)	97 (23.5)	71 (40.6)
Do not know	110 (18.7)	73 (17.7)	37 (21.1)
Believe the dead child is nearby			
Yes	278 (47.3)	214 (51.8)	64 (37.6)
No	226 (38.4)	140 (33.9)	86 (49.1)
Do not know	84 (14.3)	59 (14.3)	25 (14.3)
Believe to be reunited with the child after death			
Yes	284 (48.5)	218 (53.0)	66 (37.7)
No	160 (27.3)	85 (20.7)	75 (42.9)
Do not know	142 (24.2)	108 (26.3)	34 (19.4)

Note. The total of respondents in each characteristic varies from $n = 482$ to $n = 590$ due to missing information.

dead child was in heaven (OR 3.10; 95% CI 1.98–4.83), to believe the dead child was nearby (OR 2.07; 95% CI 1.36–3.15), and to believe that they would be reunited with the child after death (OR 3.24; 95% CI 2.06–5.08) (Table 6).

Religious/spiritual practice

More women reported practicing prayer (OR 2.08; 95% CI 1.40–3.07) and practicing prayer daily or weekly (OR 2.87; 95% CI 1.44–5.74), compared to men. Women were more likely to go to church (OR

Table 4. Attitudes related to religious/spiritual *practice*, among all respondents and by gender ($N = 713$).

Practice	Total *N* (%)	Women *N* (%)	Men *N* (%)
Attend church/another religious session			
Weekly	14 (2.4)	11 (2.7)	3 (1.7)
Monthly	27 (4.6)	20 (4.8)	7 (4.0)
At religious celebrations	469 (79.5)	334 (80.5)	135 (77.1)
Never	80 (13.6)	50 (12.1)	30 (17.1)
Practice prayer/meditation			
Yes	245 (41.5)	192 (46.3)	53 (30.3)
No	329 (55.8)	209 (50.4)	120 (68.6)
Do not know	16 (2.7)	14 (3.4)	2 (1.1)
How often practicing prayer/meditation			
Daily	40 (16.3)	36 (18.8)	4 (7.6)
Weekly	90 (36.7)	77 (40.1)	13 (24.5)
Monthly	46 (18.8)	33 (17.2)	13 (24.5)
Less than monthly	68 (27.8)	46 (24.0)	22 (41.5)
Never	1 (0.4)	0 (0.0)	1 (1.9)

Note. The total of respondents in each characteristic varies from $n = 245$ to $n = 590$ due to missing information.

Table 6. Associations between gender and attitudes related to religious/spiritual *cognition*.

	Crude OR	(95% CI)	Adjusted* OR	(95% CI)
Believe in God/something bigger/something divine ($n = 568$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	2.32	(1.62;3.33)	2.17	(1.50;3.15)
Believe in life after death ($n = 335$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	3.08	(1.90;4.98)	3.66	(2.13;6.29)
Believe the death child is in heaven ($n = 460$)				
Men	1(Ref)	–	1 (Ref)	–
Women	2.64	(1.76;3.98)	3.10	(1.98;4.83)
Believe the death child is nearby ($n = 484$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	2.05	(1.39;3.03)	2.07	(1.36;3.15)
Believe to be reunited with the child after death ($n = 428$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	2.91	(1.92;4.41)	3.24	(2.06;5.08)

Note. *Adjusted for educational level, marital status, type of loss, previous loss, and assisted fertilization.

Table 5. Attitudes related to religious/spiritual *importance*, among all respondents and by gender ($N = 713$).

Importance	Total Median	Women Median	Men Median
Thoughts about meaning and purpose in life has changed after being bereaved (10-point scale)			
First quartile	2	3	2
Median	6	7	4
Third quartile	8	8	7
	N (%)	*N* (%)	*N* (%)
Change in belief/not belief			
Yes	144 (24.5)	112 (27.0)	32 (18.4)
No	395 (67.1)	261 (62.9)	134 (77.0)
Do not know	50 (8.5)	42 (10.1)	8 (4.6)
If yes, how did it change			
Strengthened	94 (65.7)	74 (66.1)	20 (64.5)
Weakened	49 (34.3)	38 (33.9)	11 (35.5)
Faith is experienced as supportive			
Yes	170 (50.0)	144 (54.8)	26 (33.8)
No	109 (32.1)	71 (27.0)	38 (49.4)
Do not know	61 (17.9)	48 (18.3)	13 (16.9)
Change in belief in life after death			
Yes	76 (12.9)	61 (14.8)	15 (8.6)
No	432 (73.5)	293 (70.9)	139 (79.4)
Do not know	80 (13.6)	59 (14.3)	21 (12.0)
Church attendance/attendance to other religious sessions changed			
Yes	47 (8.0)	33 (8.0)	14 (8.0)
No	512 (86.9)	356 (86.0)	156 (89.1)
Do not know	30 (5.1)	25 (6.0)	5 (2.9)
Change in frequency of prayer/meditation			
Yes	116 (19.7)	99 (23.9)	17 (9.7)
No	453 (76.9)	299 (72.2)	154 (88.0)
Do not know	20 (3.4)	16 (3.9)	4 (2.3)
Talking to someone about life and faith questions			
Yes	229 (38.9)	166 (40.1)	63 (36.0)
No	351 (59.6)	242 (58.5)	109 (62.3)
Do not know	9 (1.5)	6 (1.5)	3 (1.7)
Been missing to talk about life and faith questions			
Yes	61 (10.3)	47 (11.3)	14 (8.0)
No	484 (82.0)	335 (80.7)	149 (85.1)
Do not know	45 (7.6)	33 (8.0)	12 (6.9)

Note. The total of respondents in each characteristic varies from $n = 340$ to $n = 590$ due to missing information.

Table 7. Associations between gender and attitudes related to religious/spiritual *practice*.

	Crude OR	(95% CI)	Adjusted* OR	(95% CI)
Attend church/another religious session weekly/monthly/at religious festivals ($n = 568$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.51	(0.92;2.47)	1.57	(0.93;2.63)
Practice prayer/meditation ($n = 554$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	2.08	(1.43;3.04)	2.08	(1.40;3.07)
Practicing prayer/meditation daily or weekly ($n = 236$)				
Men	1(Ref)	–	1 (Ref)	–
Women	3.03	(1.59;5.77)	2.87	(1.44;5.74)

Note. *Adjusted for educational level, marital status, type of loss, previous loss, and assisted fertilization.

Table 8. Associations between gender and attitudes related to religious/spiritual *importance*.

	Crude Coefficient	(95% CI)	Adjusted* Coefficient	(95% CI)
Change in thoughts about meaning and purpose in life ($n = 564$)				
Men	0 (Ref)	–	0 (Ref)	–
Women	1.46	(0.93;2.01)	1.40	(0.85;1.95)
	OR	(95% CI)	OR	(95% CI)
Change in belief ($n = 519$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.80	(1.15;2.80)	1.76	(1.11;2.78)
If yes, how did it change (Strengthened) ($n = 140$)				
Men	1(Ref)	–	1 (Ref)	–
Women	1.07	(0.47;2.46)	1.16	(0.48;2.78)
Faith is experienced as supportive ($n = 270$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	2.96	(1.67;5.26)	3.15	(1.70;5.82)
Change in belief in life after death ($n = 488$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.93	(1.06;3.51)	1.89	(1.00;3.56)
Change in church attendance ($n = 540$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.03	(0.54;1.98)	0.99	(0.50;1.93)
Change in frequency of prayer/meditation ($n = 549$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	3.00	(1.73;5.20)	2.89	(1.65;5.05)
Talking to someone about life and faith questions ($n = 558$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.19	(0.82;1.71)	1.15	(0.77;1.72)
Been missing to talk about life and faith questions ($n = 525$)				
Men	1 (Ref)	–	1 (Ref)	–
Women	1.49	(0.80;2.80)	1.41	(0.74;2.69)

Note. *Adjusted for educational level, marital status, type of loss, previous loss, and assisted fertilization.

1.57; 95% CI 0.93–2.63). However, this difference was not statistically significant (Table 7).

Religious/spiritual importance

Regarding the question "Did your thoughts about meaning and purpose in life change after being bereaved," women scored on average 1.40 (95% CI 0.85–1.95) higher than men on the 10-point scale. Women were more likely to find faith supportive (OR 3.15; 95% CI 1.70–5.82), to experience change in belief (OR 1.76; 95% CI 1.11–2.78), and a change in frequency of prayer (OR 2.89; 95% CI 1.65–5.05). Regarding "Change in belief in life after death," a small difference between genders was found in the crude analysis (OR 1.93; 95% CI 1.06–3.51). In adjusted analyses, the OR was reduced and was no longer statistically significant (OR 1.89; 95% CI 1.00–3.56). Women were more likely than men to talk to someone (OR 1.15; 95% CI 0.77–1.72) and to miss talking to someone about life and faith questions (OR 1.41; 95% CI 0.74–2.69), but the differences were not statistically significant. In addition, no difference of significance was found regarding the question "If yes, how did it [the belief] change?" [the belief strengthened] (OR 1.16; 95% CI 0.48–2.78) and in change in church attendance (OR 0.99; 95% CI 0.50–1.93) (Table 8).

Discussion

We found religious/spiritual beliefs and practices present among a substantial part of the bereaved parents, specifically among women where around 50% answered in the affirmative to most items related to religious/spiritual beliefs and practices. Compared to men, women reported a higher level of religiosity/spirituality and change herein after bereavement, especially about religious/spiritual beliefs and to prayer practices. In addition, women were more likely to find faith supportive.

This study, in accordance with conclusions from previous studies, indicates that religiosity/spirituality is present among a substantial part of the Danish population (Ausker et al., 2008; Hvidt et al., 2017; Prinds et al., 2016). Furthermore, the study findings indicating changes in religious/spiritual beliefs and practices among some of the bereaved parents seems to be in accordance with previous research finding a population of Danish patients to express intensified existential thoughts when experiencing severe illness (Ausker et al., 2008). Religiosity in Denmark has seemingly not disappeared, but might have changed to become more private and individualized throughout the last decades (Andersen & Lüchau, 2011). It has been called one of the biggest taboos in Denmark (Andersen & Lüchau, 2011; Hvidt et al., 2018). As a consequence, though speculative, the population of bereaved parents in this study could be untrained and feel uncomfortable in expressing attitudes related to religiosity/spirituality resulting in the relatively high proportion of "do not know" answers and the high proportion of missing information (on average, approximately 16%). Thus, acknowledging religiosity/spirituality as a taboo, we find it surprising that almost 39% of the responding parents and 34% of Danish patients (Ausker et al., 2008) had been talking to someone about life and faith questions. The question *"Did you talk to someone about life and faith questions after being bereaved?"* is broad including both *life* and *faith*. It could, by some, be interpreted as not related to religiosity/spirituality but to secular meaning-making. Nonetheless, these results indicate that bereaved parents and patients might wish to talk about these topics and find that it is possible to do so, even in a society dominated by a secular culture (Zuckerman, 2008), often in settings with family, a partner, a friend or a pastor/imam.

Ten percent of the parents reported that they missed talking to someone about life and faith questions after bereavement. Thus, the desire and need to talk about these topics are unfulfilled for some parents. The same trend is seen among Danish patients where 15% had been missing being able to talk to someone about life and faith questions (Ausker et al., 2008). It seems that the discrepancy described in literature between patients' demands for existential and spiritual care, and healthcare professionals' supply of the same (Hvidt, 2015), to some degree is confirmed by this study. Barriers hindering healthcare providers' ability to address existential issues appear to relate to lack of time, lack of education/knowledge and to the taboo concerning existential questions, followed by insecurity about patients' and their own existential meaning-making (Hvidt, 2015; Hvidt et al., 2018).

In the present study, differences in religiosity/spirituality among men and women were found. This resonates with findings from international and Danish studies concluding that women are more religious than men (Hvidtjorn et al., 2014; Trzebiatowska & Bruce, 2012; Voas et al., 2013) and experience a higher degree of intensified existential thoughts and practices when experiencing severe illness (Ausker et al., 2008) or crisis (Hvidtjorn et al., 2014) compared to men. The difference has been explained as either due to innate differences or to different socialization among genders (Trzebiatowska & Bruce, 2012; Voas et al., 2013).

Regarding prayer, 42% of parents responded affirmatively when asked if they were practicing prayer/meditation. For women, the percentage was 46% and thereby they were found to practice prayer/meditation to a lesser degree than first-time mothers giving birth to a living child (65%) (Prinds et al., 2016), and to female Danish patients (74%) (Ausker et al., 2008). This discrepancy calls for further studies to explore whether prayer is associated with hope since hope is not applicable when a child has died. Nearly half of the parents reported a belief in life after death (46%), which was less than Danish patients (aged 18–35 years) (67%) (Ausker et al., 2008). However, the parents in our study reported to a higher degree a change in belief in life after death after their loss (13%) compared to Danish patients (4%) (Ausker et al., 2008). These results indicating some difference in religious/spiritual beliefs and practices between different segments of the Danish population raise "why" questions relevant for further research.

The survey questions allowed us to investigate <u>if</u> religious/spiritual beliefs, practices, changes, and needs exist among parents bereaved by pregnancy or neonatal loss. However, details about what this meant to

the parents, in which direction religiosity/spirituality changed after being bereaved and relations of positive and negative psychological outcomes with religious/spiritual meaning-making, were not included. Consequently, this study raises several questions calling for further research in populations of parents bereaved by pregnancy or neonatal loss in secular societies.

Among the strengths of this study, we find the use of culturally sensitive questions regarding religiosity/spirituality in the questionnaire essential (Hvidtjørn et al., 2018; Prinds et al., 2014; World Value Survey, 2006). Thereby a culturally sensitive exploration of a tabooed topic was enabled. However, using web-based self-report questionnaires, the results could possibly be influenced by mendacity bias, neutral or extreme response bias, social desirable bias and items that can be misunderstood or unclear and not understood at all (Stone, 2000). According to Jones and Elliott, the most widely used scales of religiosity and spirituality are subject to over- or under-reporting and therefore should be used with caution in ascertaining their absolute levels (Jones & Elliott, 2017).

Regarding the limitations, changes over time cannot be determined in a cross-sectional design. A longitudinal design would be desirable to investigate long-term aspects of religiosity/spirituality in the population of bereaved parents. We omitted the "do not know" answers from the regression analyses, as including those would have required multinomial models, which are generally challenging to interpret. A response rate at 39% is at the lower end compared to similar studies (Ausker et al., 2008; Hvidtjorn et al., 2014; Prinds et al., 2016). As no analysis of non-responders was possible, we cannot assess the differences between respondents and non-respondents. However, limited bias due to nonparticipation was reported in a comparable cohort study (Nohr et al., 2006). Since the calculation of the response rate was based on available data from the Region of Southern Denmark only, we find it important to mention that the response rate could possibly be different in the four other regions of Denmark.

We notice that only 30% of the respondents were men. As women tend to relate more to religiosity than men when experiencing a crisis (Ausker et al., 2008; Hvidtjorn et al., 2014), this selection bias did potentially lead to a picture of the study population as more religious than the average Danish population of bereaved parents. Furthermore, it is plausible that parents with religious/spiritual interest would be most likely to answer questions about religiosity/spirituality also leading to an over-representation of parents with religious/spiritual interest and thereby a study population more religious/spiritual than the average population of bereaved parents. Because of these limitations, all findings must be considered with caution.

Evidence from this study indicates that religious/spiritual beliefs and practices exist among a substantial part of Danish parents bereaved by pregnancy or neonatal loss. A part of the responding parents found support in religiosity/spirituality, and some experienced change in religious/spiritual beliefs and practices after their loss. Some parents had spoken to someone about life and faith questions, and some experienced an unmet need to talk to someone about these topics after loss. Women reported a higher level of religiosity/spirituality compared to men.

Ethics approval and consent to participate

The data was enacted according to the recommendations for good scientific practice (Innovationsstyrelsen, 2009). Data collection was permitted by The Danish Data Protection Agency until January 2025 (permit number 2008-58-0035, October 7, 2014). Participation was voluntary, anonymous, and confidential. No incentives or compensations were offered.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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