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Midwives' practices and knowledge about fear of childbirth and postpartum posttraumatic stress disorder

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ABSTRACT

Background: Women suffering from fear of childbirth and postpartum posttraumatic stress disorder are often not recognised by health care professionals.
Aim: To evaluate practices, knowledge and the attitudes of midwives towards women with fear of childbirth and postpartum posttraumatic stress disorder.
Methods: A cross-sectional study was performed amongst midwives who work in community practices and hospitals in the Netherlands with the use of a questionnaire purposefully designed for this research aim.
Findings: 257 midwives participated in the study, of whom 217 completed all items in the questionnaire. Midwives were better equipped to answer knowledge questions concerning fear of childbirth than posttraumatic stress disorder (regarding symptomatology, risk factors, consequences and treatment). When tending to women with fear of childbirth or (suspected) postpartum posttraumatic stress disorder, most midwives referred to another caregiver (e.g. psychologist). Most midwives expressed a positive and compassionate attitude towards women with fear of childbirth and postpartum posttraumatic stress disorder.
Discussion: The majority of midwives are well informed with respect to fear of childbirth, but knowledge of important aspects of postpartum posttraumatic stress disorder is often lacking. Midwives report no crucial issues related to their attitudes towards women with fear of childbirth and posttraumatic stress disorder. Most midwives provide adequate organisation of care and support.
Conclusion: Midwives should acquire more in depth knowledge of fear of childbirth and postpartum posttraumatic stress disorder. This can be achieved by including the two conditions in the program of midwifery education.

Statement of significance

Problem or issue

Fear of childbirth and postpartum posttraumatic stress disorder are often not recognised by health care professionals.

What is already known

Substantial research has been published on the prevalence, symptomatology, risk factors, consequences and treatment of these conditions. However, no research has been conducted which examines the knowledge of the midwives on the subject matter, if they are keeping up-to-date, nor the implementation of their knowledge in their daily practice to provide adequate care to women who (potentially) suffer from these conditions.

What this paper adds

Midwives' knowledge of fear of childbirth is adequate with room for improvement on risk factors and consequences. Knowledge on postpartum posttraumatic stress disorder is

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often lacking, indicating a need for more awareness in midwifery education programs. Care provided to women is adequate in most cases. The majority of midwives have an open attitude towards women with fear of childbirth and postpartum posttraumatic stress disorder.

1. Introduction

A small group of women may experience anxiety and stress during pregnancy and related to birth. Perinatal and postpartum psychiatric disorders are often under-diagnosed.[1] Historically, the main focus has been on postpartum depression and puerperal psychosis. Recently, however, pregnancy related anxiety disorders have received an increase in attention due to findings indicating that it is one of the strongest predictors of postpartum mental health. Nonetheless, fear of childbirth (FoC) and postpartum posttraumatic stress disorder (PTSD) are poorly recognized conditions and because FoC are PTSD are closely related to one another[1–5] it is essential that obstetric health care providers have sufficient knowledge about these conditions and uphold a constructive attitude towards women who display the symptoms. Moreover, if the conditions are detected it is critical that referral and treatment of these women is adequately organised. This study investigated midwives' knowledge, attitudes and organisation of care as crucial aspects related to the management of FoC and postpartum PTSD.

1.1. Fear of childbirth

While many women have a healthy degree of anticipatory stress related to the upcoming delivery, some women are especially afraid. In 7.5% of these cases, distress was so severe it impaired women in their daily life, it affected their mental and physical wellbeing, it impacted their relationships and it negatively influenced them during pregnancy and labour, which can be seen as features of clinical FoC.[6–8] Wijma and Wijma[9] divided FoC into four categories, ranging from low childbirth anxiety to phobic childbirth anxiety. Currently, there is no official consensus on the criteria of clinical FoC, although recommendations for screening and diagnosing severe and phobic FoC have been formulated. In the most severe cases, women meet some of the criteria for a specific phobia according to the Diagnostic and Statistical Manual for Mental Disorders, 5th edition (DSM-5).[9,10]

Multiple studies identified a preference or a demand of an elective caesarean section as being a common manifestation of FoC.[11–13] Several risk factors have been reported to be associated with FoC which include socio-demographic characteristics (e.g. young age, lacking a social network), mental health problems, negative previous birth experiences and low self-efficacy (woman's perspective on her own capability to give birth).[14–21] Finally, several studies have reported severe FoC as a risk factor for the development of PTSD (symptoms).[3,22]

1.2. Postpartum posttraumatic stress disorder

PTSD is defined in the DSM-5 as a trauma and stressor related disorder.[10] A 'traumatic event' is described as "an exposure to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence which a person experienced, witnessed or was confronted with"; some women would classify and experience childbirth as such a traumatic event. Symptom clusters obtained in the DSM-5 are intrusion symptoms, persistent avoidance of stimuli associated with the trauma, negative alterations in cognitions, mood and hyper arousal. The estimated prevalence of PTSD due to childbirth was 3.1% in community samples.[23] A recently conducted meta-analysis divided the risk factors for childbirth-related PTSD into vulnerability factors (e.g. psychological comorbidity, medical complications in pregnancy and a psychological history), birth-related factors ((subjective) birth experience, operative birth, a lack of support and dissociation) and postpartum influencing factors (depression, stress and poor coping strategies).[24] The consequences of postpartum PTSD were substantial and seen as effects on the wellbeing of women, potential difficulties with mother-infant interactions, effect on woman-partner relationship and an increased risk of FoC in a subsequent pregnancy.[25–27] Psychological interventions such as eye movement desensitisation and reprocessing (EMDR) and (trauma focused) cognitive behavioural therapy ((TF-)CBT) are the two recommended therapeutic options for PTSD.[29] Small sample studies[29,30] have also found positive effects of these therapeutic options on postpartum PTSD which are therefore increasingly researched within this population.[31,32]

1.3. Aim of the study

International literature suggests that FoC and postpartum PTSD are often not recognised by health care professionals.[4,5] This may be due to lack of knowledge, positive attitude or adequate organisation of care. The objective of this study was to evaluate awareness of midwives and their knowledge with respect to FoC and postpartum PTSD, while also assessing their attitudes towards women with these conditions and evaluating the multidisciplinary organisation of follow-up and treatment.

2. Methods

2.1. Research design and settings

A cross-sectional study design was conducted among midwives with the use of questionnaire specifically designed for this study aim. In the Netherlands, obstetric care has a unique echelon system; healthy women with a low risk profile enter primary care system and their deliveries are assisted by community midwives at home, in free-standing birthing centres or in hospitals. Most independent midwives work in a group practice, often in cooperation with other nearby practices and a local hospital, but they do not work under the supervision of an obstetrician-gynaecologist. When complications arise or women have a medical indication to deliver in a hospital setting, they are referred to an obstetrician/gynaecologist in general hospitals (secondary care) and/or academic referral centres (tertiary care). These deliveries are primarily assisted by clinical midwives or residents in obstetrics and gynaecology, under direct or indirect supervision of an obstetrician/gynaecologist.

As a general rule, in case midwives or obstetricians see an indication to involve a psychologist or psychiatrist, they will refer women themselves or in case of midwives to their general practitioner to get a referral. Recently, most Dutch hospitals have an outpatient clinic specifically designed for pregnant women with mental health problems called Psychiatric-Obstetric-Paediatric-outpatient clinics, commonly known as POP-outpatient clinics. Women who are referred to the POP-clinic by their midwife, gynaecologist or general practitioner are supervised during their pregnancy and the postpartum period by a multi-disciplinary team which consists of a gynaecologist, psychiatrist, paediatrician, and often also midwife, psychologist and social worker.

2.2. Sample and recruitment

In April 2016, Dutch midwives associated with the Committee of Clinical Midwives of the Dutch Society Obstetrics and

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Gynaecology (NVOG) (199 members), Talmor B.V. (1100 members), midwifery practices in the Leiden/the Hague region (181 community midwives) and OLVG hospitals in Amsterdam (42 clinical midwives) received an invitation by e-mail to participate in the study. Additionally, an announcement was made in the newsletter of the Royal Dutch Organisation of Midwives (KNOV) (3561 members) requesting midwives to participate. Due to an overlap between members of various groups, it was only possible to estimate the number of midwives who received the invitation, and this was set at 1400 midwives. The response rate was solely calculated based on the estimated number of midwives who received an invitation by e-mail (e-mail deliverability), the estimate did not include readers of the KNOV newsletter because no reliable estimate could be made on the number of midwives who read the actual invitation to participate.

The email contained information concerning the Screening for Trauma and Anxiety Recognition (STAR)-study (similar to the study objectives described under 'Aims of the study') and a link to the online questionnaire, inviting midwives to participate in the study. A reminder email was sent two weeks after the first one in order to increase response rate.

2.3. Instrument

The first STAR-study was first conducted in 2015, investigating the understanding/knowledge of FoC and postpartum PTSD amongst Dutch gynaecologists and residents in obstetrics and gynaecology by the same research group (article has been submitted and is currently under review). A 27-item questionnaire was specifically designed for the 2015 study. Current study is the second STAR-study and due to a similar research aim (though with a different group), the same questionnaire was used albeit with minor alterations primarily as a result of a different work environment (i.e., midwives working in community practices or hospitals vs. gynaecologists always working in hospitals) and responsibilities (i.e., clinical midwives working under supervision of a gynaecologist vs. gynaecologists always carrying final responsibility). The questionnaire consisted of multiple choice and open questions investigating the knowledge, organisation of care and attitude of Dutch midwives on FoC and postpartum PTSD. Eight demographic questions were also included. Table 1 demonstrates the four domains of the questionnaire with further explanation on the content.

The questionnaire started with three statements in order to distinguish different types of work executed by midwives (the same approach was used in the STAR-study amongst gynaecologists). Based on their answers, midwives received a shortened version of the questionnaire tuned to their individual daily practice. Midwives who performed at least five half days of pregnancy check-ups a month would be asked questions on antenatal care. Similarly, midwives performing at least five half days of postpartum check-ups would be asked questions on postpartum care. Finally, midwives who assisted at least five deliveries a month would be asked to complete the questions on intrapartum care. In practice, the work of many midwives consists of two out of three types of work (e.g. pregnancy check-ups and assisting at deliveries) or all three duties, hence there is overlap between the groups. As such, the number (N) of responses varies per item.

2.4. Statistical analysis

Survey Monkey was used to distribute the questionnaire. The Statistical Package for Social Sciences (SPSS) version 22 was used to conduct statistical analyses. Multiple choice questions were analysed using descriptive statistics. Open questions were categorised; general categories and sub-categories were created, analysed and revised by research fellows CS, MP and NV. Table 2 shows the main and sub-categories of the knowledge questions on FoC and PTSD. Two research fellows (NV and LS) performed the classification in these categories. A Cohen's kappa score (k) was calculated measuring the inter-observer agreement (interpretation: $k < 0$ indicating no agreement, 0–0.20 'slight', 0.21–0.40 'fair', 0.41–0.60 'moderate', 0.61–0.80 'substantial' and 0.81–1 'almost perfect').

Answers of incomplete questionnaires were taken into account, because most participants who abandoned the questionnaire, did so at the end of a section (e.g. knowledge questions regarding FoC). Therefore we decided to use this data but as a result the denominator (N) varies.

Differences between community and clinical midwives groups for categorical variables were evaluated with Chi-square tests. A p-value (two-sided) ≤ 0.05 was considered to be significant. In the *Supplementary information*, percentages and p-values identifying differences between community and clinical midwives can be found. Additionally, the classification of the open questions into subgroups was clarified with their corresponding k in the *Supplementary information.*

3. Results

Over a period of three weeks a total of 257 midwives started the questionnaire of whom 217 completed all items. Table 3 displays the demographic characteristics. We estimated that around 1400

Table 1
Domains of the questionnaire.

Part 1. Knowledge questions regarding FoC and postpartum PTSD	Open questions on recognising symptomatology, risk factors, consequences and treatment of FoC and PTSD. • *'Which signs, symptoms and/or signals have you encountered in you daily practice indicating FoC/postpartum PTSD?'* • *'What risk factors have you encountered that enhance the chances of developing FoC/postpartum PTSD?'* • *'What negative consequences of FoC/postpartum PTSD have you encountered in your daily practice?'* • *'Which effective treatment for postpartum PTSD do you know?'*
Part 2. Organisation of care	Assessment of the actions taken when women are suffering from FoC/PTSD or are suspected to do so during prenatal check-ups, after birth and postpartum check-ups. • Do midwives actively asses/asked women about their fears of traumatic experiences. • Do midwives provide standard or additional care themselves or consult other health care professionals. If so, which specialists are consulted. • Which actions are taken to prevent fear and/or trauma.
Part 3. Attitudes towards women with FoC and postpartum PTSD	Options were given about feelings evoked when caring for affected women, with the opportunity to add emotions of their choosing.
Part 4. Demographic characteristics	Closed questions on gender, age, current position, number of half days spent on prenatal/postpartum check-ups/assisting deliveries and years of work experience.

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Table 2
Categories of questions on symptomatology, risk factors, consequences and treatment of FoC and postpartum PTSD: main groups with sub-categories.

Signs and signals of FoC	
Psychological prenatal:	Anxiety, mood, personality traits, negative pregnancy experience, discrepancy in expectations
Psychological intrapartum:	Fear of maternal and/or infant complications, difficulty to relax during the birthing process
Psychological postpartum:	Delaying or deciding against future pregnancy
Social:	Impaired functioning in daily life, difficulties confiding in social system and/or partner
Physical:	Sleeping problems and nightmares, somatic (unexplained) complaints
Medical:	Request elective CS[a] or induction without medical indication, (primary) request for medical pain relief, increase in demand of care and/or information, avoidance, extensive delivery plan
Risk factors of FoC	
Psychological:	History of psychological complaints, personality traits, (non-childbirth related) trauma, discrepancy in expectations
Social:	Poor social system, demographic characteristics, bad experiences/stories in media or from social network, cultural differences, language barrier, work/financial problems
Physical:	Somatic (unexplained) complaints including sleeping problems
Medical during pregnancy:	Infant complications, complications during pregnancy, primi gravida, macrosomia
Care giver related:	Inadequate guidance during birth, no continuity in care and support, high workload caregiver, inadequate preparation or provision of information
Secondary to prior pregnancy:	Complicated birth/obstetric history, traumatically experienced labour, infant complications
Consequences of FoC	
Psychological during pregnancy:	Discrepancy in expectations, avoidance or increase need of care, low self-esteem, trust issues, psychological complaints, not eyeing the pregnancy, inadequate preparation for birth
Psychological intrapartum:	Fear of birthing process, not being able to relax, dissociation or reliving previous childbirth
Psychological postpartum:	Delaying or deciding against future pregnancy, negative feelings, psychological complaints, negative (subjectively traumatic) experience
Social:	Impaired functioning in daily life, relationship problems
Physical:	Somatic (stress related) complaints, sleeping problems
Medical during pregnancy:	Request elective CS[a] or induction without medical indication
Medical during labour:	(Primary) request for pain relief, unnecessary interventions/medicalization, false start of labour, abnormal labour progression
Signs and signals of postpartum PTSD	
DSM-V symptoms:	Intrusion symptoms, avoidance, negative cognitions and mood, alterations in arousal and reactivity, feeling that life of self or child is in danger
Psychological comorbidity:	Depression, psychosis, obsessive thoughts/behaviour
Secondary to future pregnancy:	Fear of childbirth, delaying/deciding against pregnancy, negative pregnancy experience
Social:	Relationship and/or sexual problems, impaired functioning daily life
Physical:	Unexplained complaints
Medical:	Request CS[a] or induction without medical indication, (primary) request for pain relief
Risk factors of postpartum PTSD	
Psychological:	Psychiatric history, personality traits, (non-childbirth related) trauma, discrepancy in expectation, fear of childbirth
Social:	Poor social system, demographic characteristics, bad experiences/stories in media or from social network, cultural differences, language barrier
Physical:	(Fear of) pain during labour, physical complaints
Care(giver) related:	Prenatal (inadequate preparation), intrapartum (inadequate support/guidance/communication), postpartum (inadequate postpartum care/evaluation of birth experience)
Secondary to previous pregnancy:	Traumatically experience labour, complicated labour, operative labour, failed pain relief medication/request, infant complications, subjective birth experience
Consequences of postpartum PTSD	
Psychological:	Avoidance, secondary fear of childbirth, negative feelings, mental problems postpartum, not enjoying postpartum period, low self-esteem, inadequate understanding of emotions by caregiver
Social:	Overburdening social system, relationship problems, isolation
Physical:	Sleeping problems, somatic complaints
Medical and care:	Request elective CS[a] or induction without medical indication, (primary) request for pain relief, increase demand/provision care
Disturbed mother-infant bonding:	Disturbed attachment, breastfeeding problems
Treatment of postpartum PTSD	
Specific treatments:	EMDR[a], CBT[a], psychotherapy, regression therapy, psychoeducation
Caregiver:	Psychologist, psychiatrist, gynaecologist, coach/mama-kits, POP-clinic[a], social worker
Midwifery care:	Involving social network/religion, birth plan
Complementary alternative medicine:	Mindfulness, yoga, hypnobirthing, hypnotherapy, holistically massage

[a] Caesarean section (CS) — eye movement desensitisation and reprocessing (EMDR) — psychiatric obstetric paediatric-outpatient clinic (POP) — cognitive behaviour therapy (CBT).

midwives received an invitation to participate in the study by e-mail resulting in a response rate of around 18.0% for midwives who partially completed the questionnaire and 16.0% for midwives who finished the questionnaire.

3.1. Knowledge questions regarding FoC

A total of 257 respondents completed the knowledge questions on FoC (see Table 4). All midwives had cared for women with FoC, 82.8% (N = 207/250) of the midwives saw >5 women with FoC in a given a year. Inter-observer agreement (with $k > 0.61$) was reached in 82.4% of categorisation regarding the knowledge questions of FoC.

Of the signs and signals encountered in daily practice, 77.8% (N = 200/257) of midwives described psychological signals, 59.5% (N = 153/257) reported recognising physical complaints and more than half of the midwives mentioned medically related signs (56.0%, N = 144/257). No statistically significant difference was found between community and clinical midwives with regard to symptomatology of FoC.

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Table 3
Demographic characteristics.

	Number of respondents	%
Gender (N = 217[a])		
Female	214	98,6
Male	3	1,4
Age (years) (N = 217[b])		
20–24	4	1,8
25–34	73	33,6
35–44	73	33,6
45–54	42	19,4
55–64	25	11,5
65	0	0,0
Current position (N = 217[b])		
Community midwife (practice owner)	78	35,9
Community midwife (paid employee)	15	6,9
Community midwife (substitute)	11	5,1
Clinical midwife (secondary care)	89	41,0
Clinical midwife (tertiary care)	14	6,5
Researcher/teacher/sonographer	4	1,8
Retired	1	0,5
Non-practicing/management position	5	2,3
No. of half day's spend on prenatal check-ups (per month) (N = 196[a,b])		
Rarely or never	3	1,5
1–5	57	29,1
4–6	59	30,1
>6	77	39,3
No. of half day's spend on postpartum check-ups (per month) (N = 94[a,b])		
Rarely or never	2	2,1
1–5	53	56,4
4–6	23	24,4
>6	16	17,0
No. of deliveries assisted (per week) (N = 180[a,b])		
Rarely or never	0	0,0
1–3	120	66,7
4–6	49	27,2
>6	11	6,1
No. of years practicing (N = 217[b])		
0–5	30	13,8
6–10	54	24,9
11–15	60	27,6
16–20	32	14,7
21–25	17	7,8
>25	24	11,1

[a] Differentiation took place based on respondents answers to opening statements about the nature of their work, therefore *N* varies per question.
[b] Answers of incomplete questionnaires were taken into account. Demographic questions were answered in the last section of the questionnaire, hence these are the number of midwives who fully completed the questionnaire.

When reviewing risk factors associated with FoC, 56% (N = 144/257) of the midwives described psychological factors.

Mental health concerns during or before pregnancy and psychological symptoms were recalled as possible result of FoC by a total of 38.5% (N = 99/257) of the surveyed midwives. Medically related consequences of FoC during the pregnancy accounted for 23.3% (N = 60/257), of which a request for a caesarean section (16.0%, N = 41/60) was described significantly more by clinical midwives compared to community midwives (8.7%, $N_{community}$ = 9/104 vs. 20.4%, $N_{clinical}$ = 21/103, p = 0.018). Medically related consequences during the birthing process were named by 49.8% (N = 128/257) of the participants. Significantly more community midwives mentioned a request for medical pain relief (21.8%, N = 56/257; 26.9%, $N_{community}$ = 28/104 vs. 14.6%, $N_{clinical}$ = 15/103, p = 0.039). All of the participants had seen consequences of FoC in their daily practice.

3.2. Knowledge questions regarding postpartum PTSD

A total of 225 participants completed the knowledge questions on PTSD (see Table 4). Most midwives had seen 1–5 women with diagnosed postpartum PTSD over the course of a year (67.0%, N = 146/218). Substantial inter-observer agreement (with $k > 0.61$) was reached in 92.7%.

When asked about signs and signals seen in daily practice, 69.8% (N = 157/225) participants named one or more DSM-5 symptoms/criteria whereas 18.2% (N = 41/225) could not name any signs nor signals of PTSD. No statistical significance was found between clinical and community midwives for the subcategories with regard to symptomatology of PTSD.

Psychological risk factors were mentioned by 46.2% (N = 104/225) of the participants. Midwives' mentioned risk factors secondary to previous pregnancy in 58.2% (N = 131/225). In this group, a statistically significant difference between community and clinical midwives was found for describing a history of traumatic birth experiences (21.8%, N = 49/225; 15.4%, $N_{community}$ = 16/104 vs. 21.4%, $N_{clinical}$ = 22/103, p = 0.009) and previous operative birth(s) (20.0%, N = 45/225; 13.5%, $N_{community}$ = 14/104 vs. 27.2%, $N_{clinical}$ = 28/103, p = 0.016). Of all respondents, 13.8% (N = 31/225) could not name any risk factors of PTSD following childbirth.

Of all respondents, 18.7% (N = 42/225) could not name any consequences due to postpartum PTSD; no statistical significance was found between clinical and community midwives.

When asked about effective treatments, 79.6% (N = 179/225) of midwives named a specific therapy. Referral to another caregiver (32.0%, N = 72/225) was described significantly more by community midwives (37.5%, $N_{community}$ = 39/104 vs. 24.3%, $N_{clinical}$ = 25/103, p = 0.050). Of all respondents, 8.9% (N = 20/225) could not identify any therapy for (postpartum) PTSD.

3.3. Care provided for women with fear of childbirth

Table 5 displays an overview of care provided by midwives. A total of 203 midwives answered the question whether or not they actively reviewed the presence of FoC during prenatal check-ups. In 57.6% (N = 117/203) of the cases midwives always asked and 40.9% (N = 83/203) of the participants only addressed it in specific situations, depending on history and signals or risk factors of FoC. No difference between clinical and community midwives was found.

3.4. Care provided for women with (suspected) PTSD following childbirth and traumatic birth experiences

Caring for pregnant women with PTSD due to a previous birth frequently resulted in referral to another caregiver (57.0%, N = 114/200). Clinical midwives more frequently referred to a psychologist (63.8%, $N_{community}$ = 37/58 vs. 82.7%, $N_{clinical}$ = 43/52, p = 0.033) and/or a social worker (12.1%, $N_{community}$ = 7/58 vs. 32.7%, $N_{clinical}$ = 17/52, p = 0.011). Community midwives more often referred to life coaches or midwives with additional coaching training (27.6%, $N_{community}$ = 16/58 vs. 9.6%, $N_{clinical}$ = 5/52, p = 0.027) and complementary and alternative therapies (15.5% $N_{community}$ = 9/58 vs. 0.0%, $N_{clinical}$ = 0/52, p = 0.003) compared to clinical midwives. Ten participants said they did not have any experience with these women (5.0%, N = 10/200). Substantial agreement ($k > 0.61$) was reached in 90.1% for open questions on prenatal care.

Midwives were asked whether they were used to asking women about their birth experience in the postpartum period; 81.1% (N = 150/185) confirmed to do so directly or within one week after the birth (100%, $N_{community}$ = 78/78 vs. 66.7%, $N_{clinical}$ = 68/102, p = <0.001). During the six weeks postpartum check-up all midwives confirmed asking women about their birth experiences.

Midwives referred to a different caregiver in 71.1% (N = 69/97) when women reported being traumatised and 62.9% (N = 61/97) when they suspected PTSD. Substantial or almost perfect agreement ($k > 0.61$) was obtained in 95.0% of the cases when reviewing open questions on postpartum care.

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Table 4
Knowledge questions on fear of childbirth and postpartum posttraumatic stress disorder.

Fear of Childbirth[a]	Number of respondents	%	Postpartum PTSD[a]	Number of respondents	%
No. of women seen (N = 250)[b]			No. of women seen (N = 218)[b]		
None	1	0,4	None	34	15,6
1–5	42	16,8	1–5	146	67,0
6–10	71	28,4	6–10	27	12,4
11–20	77	30,8	>10	11	5,0
>20	59	23,6			
Signs and signals (N = 257)[b]			Signs and signals (N = 225)[b]		
Psychological prenatal	200	77,8	DSM-V symptoms	157	69,8
Psychological intrapartum	16	6,2	Psychological comorbidity	37	16,4
Psychological postpartum	9	3,5	Secondary to future pregnancy	31	13,8
Social	13	5,1	Social	13	5,8
Physical	153	59,5	Physical	18	8,0
Medical	144	56,0	Medical	18	8,0
Disturbed mother-infant bonding	5	1,9	Disturbed mother-infant bonding	40	17,8
Remaining	21	10,9	Remaining	32	14,2
None	1	0,4	None	41	18,2
Risk factors (N = 257)[b]			Risk factors (N = 225)[b]		
Psychological	144	56,0	Psychological	104	46,2
Social	150	58,4	Social	42	18,7
Physical	10	3,9	Physical	14	6,2
Medical during pregnancy	11	4,3	Care (giver) related	65	28,9
Care (giver) related	52	20,2	Secondary to previous pregnancy	131	58,2
Secondary to previous pregnancy	186	72,4	Remaining	26	11,6
Remaining	19	7,4	None	31	13,8
None	3	1,2			
Consequences (N = 257)[b]			Consequences (N = 225)[b]		
Psychological before/during pregnancy	99	38,5	Psychological	124	55,1
Psychological intrapartum	63	24,5	Social	72	32
Psychological postpartum	55	21,4	Physical	22	9,8
Social	22	8,6	Medical and care related	14	6,2
Physical	35	13,6	Disturbed mother-infant bonding	112	49,8
Medical during pregnancy	60	23,3	Remaining	11	4,9
Medical intrapartum	128	49,8	None	42	18,7
Care (giver) related	19	7,4	Treatment (N = 225)[b]		
Disturbed mother-infant bonding	20	7,8	Specific therapies	179	79,6
Remaining	25	9,7	>EMDR-therapy[c]	170	75,6
None	0	0,0	>CBT[c]	33	14,7
			Caregiver	72	32,0
			Psychotropic medication	22	9,8
			Midwifery care	27	12,0
			Complementary and alternative medicine	13	5,8
			None	20	8,9

[a] Classification of open questions by researchers prior to analysation (see *Supplementary information* for subgroups).
[b] Participants with incomplete questionnaires were taken into account hence the variation in N.
[c] Eye movement desensitisation and reprocessing (EMDR) — Cognitive Behaviour Therapy (CBT).

3.5. Midwifery care during childbirth

185 midwives who attend deliveries were asked if they consciously undertook certain actions or had specific attitudes towards women with the purpose of reducing anxiety or the likelihood of a traumatic birth experience (see Table 6). Of these midwives, 86.5% (N = 160/185) reported taking measures during labour and birth. The importance of continuity in care and continuous accompaniment by caregivers (21.6%, N = 40/185) was named more often by community midwives (30.8%, $N_{community}$ = 34/78 vs. 14.7%, $N_{clinical}$ = 15/102, p = 0.011). Only 7.0% (N = 13/185) of all participants reported good postpartum care as a preventative action.

3.6. Attitudes towards women with FoC and postpartum PTSD

The most frequently evoked emotions in midwives by women with FoC and PTSD were positive in nature (e.g. empathy, sympathy and compassion) as seen in Fig. 1. Overall, negative emotions were experienced more when caring for women with postpartum PTSD (e.g. sadness, guilt, frustration). The majority of midwives considered caring for women with FoC and PTSD a positive challenge (FoC 83.0%, N = 176/212 and PTSD 74.2%, N = 158/213).

4. Discussion

This study aims to quantify the knowledge of midwives about FoC and postpartum PTSD, their attitudes towards women with these conditions and the care provided to these women.

4.1. Knowledge of FoC and postpartum PTSD

The knowledge and awareness of FoC was greater than the knowledge and awareness of PTSD since more midwives were able to answer knowledge questions on FoC. A potential explanation is the reduced exposure to women suffering from PTSD due to lower prevalence (3.1% in community samples) [23], although the incidence of FoC (20.0%, of which 7.5–15.0% severe)[6–8] and traumatic experience due to childbirth (9.0–21.0%) [33,34] is comparable. An additional explanation may be that the upcoming birth (and fear related to it) is a more common topic of conversation during prenatal check-ups than a previous (potentially traumatic) birth experience. Additionally, symptoms must exist for at least one month before PTSD can be diagnosed; a number of these women will no longer be in midwifery care and therefore signs could be unnoticed by caregivers, while others may not experience all symptoms during the post-partum at the time of

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Table 5
Care provided in the prenatal and postpartum period by midwives.

	Number of respondents	%
Prenatal care		
Asking about FoC (N = 203)[b]		
Always	117	57,6
Sometimes ([a]e.g. history, risk factors of FoC)	83	40,9
Never	3	1,5
Action when FoC is suspected (N = 200)[b]		
No elaboration on the topic and generalisation	4	2,0
No elaboration on the topic and generalisation + pain counselling	5	2,5
Figure out underlying reason for distress and make a plan together	169	84,5
Figure out underlying reason for distress and advice relaxing complementary therapies	119	59,5
Figure out underlying reason for distress and refer to a specialist	169	84,5
I don't have experience with these women	0	0,0
Action when caring for patients with PTSD symptoms after a previous birth (n = 200)		
Standard care	2	1,0
Provide extensive care myself	74	37,0
Referral to another care giver	114	57,0
I don't have experience with these women	10	5,0
Postpartum care		
Action for women who experienced childbirth as traumatic (N = 97)		
Referral to another caregiver	69	71,1
Asking about the complaints after labour	67	69,1
Reassuring and/or soothing	10	10,3
Planning an extra check-up	35	36,1
Asking about the experience, clarify and answer questions	89	91,8
Assess and discuss next steps (if necessary referral)	16	16,5
Referral to book/website or advice to write experience down	3	3,1
I never see these women	2	2,1
Remaining	1	1,0
Action when postpartum PTSD is suspected (N = 97)		
Referral to another care giver	61	62,9
Asking about the complaints after labour	63	64,9
Reassuring and/or soothing	9	9,3
Planning an extra check-up	33	34,0
Asking about the experience, clarify and answer questions	79	81,4
Assess and discuss next steps (if necessary referral)	9	9,3
Referral to book/website or advice to write experience down	5	5,2
I never see these women	7	7,2
Remaining	2	2,1

[a]Classification of open question by researchers prior to analysation (see Supplementary information for subgroups).
[b]Participants with incomplete questionnaires were taken into account hence the variation in N.

check-up. Avoidance is a symptom of PTSD, hence women suffering from this disorder may evade the subject during their visit, or they may choose not to come for the postpartum check-up at all. Finally, not all midwives encounter women with postpartum PTSD in their daily practice. Therefore, these midwives would have had to obtain their knowledge on postpartum PTSD during their training to become a midwife or through refresher courses regarding perinatal and postnatal mental health.

Table 6
Actions and attitudes to reduce the chance of anxiety and traumatic birth experiences.[a]

	Number of respondents (N = 185)	%
Prenatal	53	28,6
Discuss expectations/delivery plan	50	27,0
Good provision of information/preparation	10	5,4
Intrapartum	160	86,5
Creating peaceful environment/listening/gaining trust	82	44,3
Positive support/coaching	35	18,9
Open communication	20	10,8
Explanation (about actions)/informed consent	106	57,3
Patient in the lead	43	23,2
Pain counselling/organising pain relief	19	10,3
Postpartum	13	7,0
Organiation of care	64	34,6
Continuity care giver/one on one or continuous care	40	21,6
Involve partner/inner circle	31	16,8
Remaining	19	10,3
None	10	5,4

[a] Classification of open questions by researchers prior to analysation.

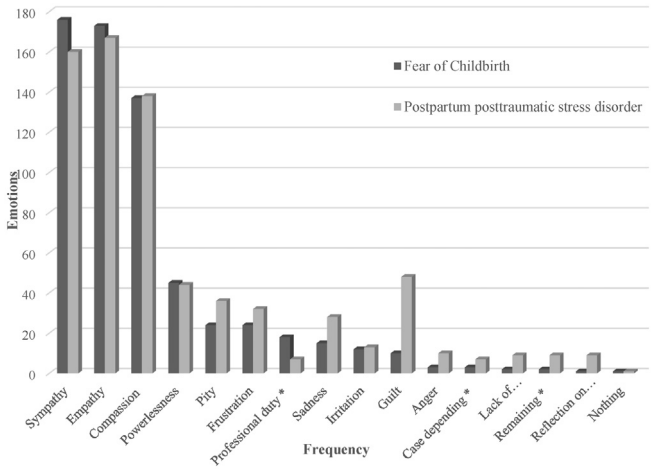

Fig. 1. Attitudes towards woman with FoC and PTSD.
Multiple answers were possible. Additionally, midwives were given the opportunity to give a notification of a feeling and/or attitude themselves (* with $k > 0.61$ for all categories).

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Knowledge about FoC and PTSD can be obtained and preserved in various ways, starting with students of Midwifery. In the Netherlands, current students in programs of midwifery gain substantial knowledge on perinatal mental health disorders, including FoC and postpartum PTSD. This, however, is a recent addition to the curriculum, largely because research and clinical awareness about these conditions originates from the last two decades. Additionally, to remain up to date on their knowledge and skills one should participate in ongoing training on perinatal and postpartum mental health issues. This should be stimulated and organized by existing regional collaborations between community midwifery practices and hospitals.

Currently, Dutch regional collaborations between community midwifery practices and hospitals are working on improvement of referral pathways for women with these mental health issues, where also psychosocial caregivers are involved (e.g. awareness and referral to POP-clinics).

4.1.1. Fear of childbirth

Despite the fact that Wijma and Wijma[9] formulated clear recommendations for screening and diagnosing severe FoC, it could be argued that the lack of consensus on the definition of severe FoC poses an issue for the recognition and diagnoses of the condition. In our study many of the participants were well informed on the symptomatology of FoC. As expected, midwives primarily identified women with FoC through psychological symptoms such as anxiety and mood changes, as well as new physical complaints such as headaches and sleeping problems. This is in accordance with signs and symptoms of FoC described in literature.[4] An important finding was that in daily practice, most midwives also suspect FoC based on medically related signs, such as requests for caesarean sections. Research has revealed that requests for a caesarean section without a medical indication is an crucial indicator of FoC.[12,13] Requests for a caesarean section were mentioned significantly more by clinical midwives, most likely due to higher exposure to the request for and/or performance of elective caesarean sections in their specific work settings.

Although midwives were aware that psychological status and history of women is an important risk factor for developing FoC, a higher recognition rate was expected. For instance, the relationship between FoC and psychiatric comorbidity was widely noted and known to have an important association.[18] On the contrary, negative sexual experience or sexual abuse were scarcely mentioned as risk factors, despite their proven impact.[35] Interestingly, frightening stories told in the media and/or by relatives were often reported as social risk factors primarily by community midwives. The effects of negative experiences shared in social networks have not yet been examined in quantitative research, but have been found influential in the degree of FoC.[36] Although a traumatically experienced previous childbirth was often mentioned as a risk factor for FoC in a subsequent pregnancy, none of the participants pointed out an increased risk of developing PTSD (symptoms) amongst the possible consequences of FoC, while there is an association between the two conditions.[3,37] The failure to relax during the birthing process was reported as a consequences of FoC in the intrapartum period. Remarkably, when reviewing the medically related consequences, prolonged labour was described most often which is known to occur in women with FoC.[6,38] We could further speculate that failure to relax during childbirth may contribute to prolonged labour, but further research is required. Literature has revealed a connection between FoC and requests for pain relief,[39–41] which was also expressed in this study as an intrapartum medical consequence. The same literature reports it is preferred to address the fear of birth over providing pain relief.

4.1.2. Postpartum PTSD

Although the majority of the participants were able to recall at least one of the DSM-5 symptoms or criteria for PTSD, none of the participants could name all four. When asked about risk factors for the development of postpartum PTSD, midwives focused solely on psychological complaints, psychiatric history and experiences during previous pregnancies and deliveries, these findings are in line with recently conducted meta-analysis.[24] However, other components (such as FoC, prior counselling for birth and pregnancy-related factors, not enough support from caregivers, dissociation during labour, stress and poor coping skills) reported in this meta-analysis were not or moderately alluded to by midwives in the current study.

Even though some participants could not identify any specific consequences of PTSD, the respondents who did were adequately informed on the negative impact such as: effects on the wellbeing of women, mother-child bonding and secondary FoC.[25,27]

Encouragingly, the majority of midwives were aware of EMDR-therapy as a therapeutic option for PTSD due to childbirth, which is one of the two internationally recommended treatments for PTSD.[42,43]

4.2. Care provided

Maternity care for women with (suspected) FoC and pregnant women with PTSD after a previous birth or suspected PTSD, was found to consist primarily of providing additional care by the midwives themselves and/or referral to another specialist. The majority of women with (suspected) PTSD would be referred to a caregiver who could provide or organise appropriate care. However, some women were referred to complementary and alternative therapies such as mindfulness, although no studies have been published on the efficacy of such therapies in childbirth related PTSD and FoC.

While midwives have an individual responsibility to provide up-to-date and optimal care, they should be supported by an accessible and clear infrastructure for appropriate care (e.g. guidelines) and referral pathways. In the Netherlands this is often organized on a regional level in collaboration with local hospitals. We believe there is room for improvement, since there are many recent developments in this field, most of which have not been thoroughly evaluated and not in all cases midwives are directly involved.

In the current study, a minor percentage of midwives concluded that they do not undertake any additional measures with the intention to reduce FoC or the likelihood of women developing PTSD. No effective interventions for preventing traumatic birthing experiences have been identified thus far,[44] but it is reassuring that the majority of the midwives in this research do take additional actions to reduce fear. The importance of this is confirmed by a recent study among 2192 Dutch women who had a traumatic birth experience, in which women indicated that if caregivers would have provided proper explanations, more support and better communication, they may not have experienced the birthing process as traumatic.[45]

A minor percentage of midwives stated the importance of continuous supportive care. Bohren et al.[46] have shown decreased negative feelings about childbirth experience for women who received continuous support in labour. One study showed a potential benefit specifically for women with severe FoC, but it was unclear whether the effect was only from continuous support or also from the psychological treatment that those women received during pregnancy.[47] Randomised control trials with larger sample sizes are required to confirm these finding in women with FoC.

Few participants indicated good postpartum care and evaluation of the birth experience as preventative actions. However,

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many reported discussing the experience directly or within the first week after birth and all reported addressing it during postpartum check-ups when asked through multiple choice questions. Interestingly, this contradicts the reports of women with a traumatic birth experience, of whom 26% say the birth experiences was not discussed at the postpartum check-up.[45] The effects of formal debriefing postpartum have been found inconclusive and shown inconsistencies in PTSD literature.[28,48,49] However, the same research reveals that women appreciate midwives asking about their experience and feelings concerning the birthing process because it offers them validation and helps them to cope better.

4.3. Attitudes

Most midwives expressed positive emotions, attitudes and opinions towards (caring for) women suffering from FoC and postpartum PTSD. This is an important finding since previous studies have shown that midwives who are open minded and have positive attitudes towards women in distress, are more prone to provide (extra) supportive care and are more aware of the value of good screening.[50] Slightly more negative emotions (e.g. guilt and sadness) were scored for postpartum PTSD. To our knowledge, no research has been published thus far about why this might be. Hypothetical explanations for this phenomenon could be: (1) Midwives may find it uncomfortable and confrontational when women accuse caregivers of their traumatic experience, possibly causing them to doubt their own capabilities. (2) Midwives may find it difficult to show compassion when through their eyes and/or from a purely medical viewpoint the birth was uneventful. (3) Midwives may find it more satisfying to assist women in reducing fear prospectively (FoC) than retrospectively (PTSD).

4.4. Limitations and strengths

We believe the current study is a unique contribution to the further understanding of FoC and postpartum PTSD since no other research exists with a similar research aim. The findings help distinguish between factors (knowledge, attitudes, organisation) that may currently prevent optimal identification and referral for women with FoC and postpartum PTSD. The lack of a validated questionnaire is one of the limitations in this study, but we did use a specifically designed questionnaire created by researchers highly experienced in drafting questionnaires. As with all self-report questionnaires, using this instrument increases the risk of socially desirable answers and rules out the opportunity of clarifying questions creating an in-depth understanding of the responses given. However, the study was meant to be an inventory and could serve as a mechanism for further quantitative research.

Due to the overlap in members of the various networks used to distribute the questionnaire, no exact response rate could be calculated. Although our estimated response rate of 18.0% is moderate and likely to be lower as it is only based on the approximated number of midwives who received an invitation to participate in the study by e-mail, we considered it acceptable because a considerable portion of the questionnaire consisted of open questions and therefore the midwives were given ample opportunity to elaborate on their answers. Nonetheless, it is possible that midwives who find caring for women with psychological problems during pregnancy and childbirth a positive challenge would be more inclined to participate in the study. If this were the case, it could have caused a sampling bias, undermining the external validity.

Negatively influencing the generalisability of the study is the fact that some answers contained small sample sizes.

The inter-observer agreement analyses showed high resemblances between the research fellows. Most Cohen's kappa were >0.61 (substantial to almost perfect). When k was scored lower, in most cases this included k between 0.41–0.61 (modest). Therefore, we can conclude that the categorisation of open questions were adequate and can be used for interpreting the data.

5. Conclusion

The majority of midwives who participated in the survey were able to answer knowledge questions on FoC. This suggests that particularly their understanding of symptomatology is up-to-date. However, midwives are less aware of the impact of FoC (relationship with PTSD and request for caesarean section) and would prefer to be more conscious of risk factors. In comparison, our research indicates that a large proportion of the midwives is ill informed on PTSD postpartum, unable to answer any knowledge questions on the subject matter. Nonetheless, midwives who are, show an understanding in accordance with literature on the risk factors and consequences of PTSD. Even though they are familiar with some symptomatology, their knowledge about signs and symptoms can be improved.

No crucial issues relate to midwives' attitudes towards women with FoC and/or PTSD. Overall the organisation of care is suggested to be adequate, with the exception of a small portion of the midwives who refer women with (suspected) PTSD to caregivers who are not specialised and/or authorised to provide appropriate mental health care.

Ensuring that (future) midwives gain substantive knowledge on perinatal mental health disorders such as FoC and postpartum PTSD is a crucial the task of programs of midwifery education. Additionally, next to a professional responsibility of midwives themselves, hospitals as well as regional health care collaborations have to ensure that midwives are able to gain up-to-date knowledge and should organize adequate referral pathways.

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Conflicts of interest statement

All authors have declared that there are no conflicts of interest in connection with this article.

Ethical statement

Due to the nature of the research design, we waived ethical approval from the medical ethics committee being that the instrument used for the study was a questionnaire. Midwives received information regarding the STAR-study and were asked to (anonymously) fill in the online questionnaire.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.wombi.2018.11.014.

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