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Potentially traumatic events, fear of childbirth and posttraumatic stress disorder during pregnancy in Stockholm, Sweden: A cross-sectional study

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ABSTRACT

Objectives: To estimate the prevalence of potentially traumatic events (PTEs), fear of childbirth (FOC), and support for it as well as posttraumatic stress disorder (PTSD) among pregnant women attending maternal care in Stockholm, Sweden.

Methods: A cross-sectional study was conducted. Pregnant women attending lectures in preparation for childbirth at the major hospitals in Stockholm were asked to complete questionnaires anonymously. Main outcome measures were the prevalence of PTEs, FOC, support for FOC and PTSD.

Results: One thousand one hundred fifty-seven women in late pregnancy attending lectures in preparation for childbirth at hospitals in Stockholm, Sweden, were asked to participate, 945 chose to participate, resulting in a response rate of 81.7 percent. Most pregnant women, 78.5 percent (95% confidence interval (CI) 75.6–81.3), reported having experienced at least one PTE. The prevalence of having experienced different types of violence is presented. FOC was found among 28.8 percent (95% CI 25.7–32.0) of pregnant women, while only 10.9 percent (95% CI 10.5–11.2) received support for FOC. The prevalence of current PTSD was 4.1 percent (95% CI 2.8–5.8).

Conclusions: The majority of pregnant women had experienced PTEs, and experiences of violence were common, as was FOC. Approximately one in 25 women attending general maternal care in Stockholm, Sweden, was estimated to have current PTSD. This highlights the need to prevent violence, find pregnant women suffering from FOC or PTSD, to develop an evidence-based treatment for FOC and to provide such treatment for PTSD.

Introduction

Childbirth and other obstetric events, eg miscarriages, can be perceived as traumatic, and may be followed by the development of fear of childbirth (FOC) and posttraumatic stress disorder (PTSD) [1]. Other potentially traumatic events (PTEs), eg sexual abuse, may also be followed by PTSD [1]. PTEs, FOC, and PTSD have been reported to be associated with each other [2] as well as adverse obstetric outcomes, eg PTEs in the form of abuse with a negative birth experience [3] and low birth weight [4], FOC with a negative birth experience [3] and prolonged labour [5], and PTSD with preterm birth and low birth weight [6].

Abbreviations: PTE(s), potentially traumatic event(s); FOC, fear of childbirth; PTSD, posttraumatic stress disorder; SPR, Swedish Pregnancy Register; LEC-5, Life Events Checklist for DSM-5 Extended Self-Report (LEC-5); W-DEQ, Wijma Delivery Expectancy/Experience Questionnaire version A; PCL, PTSD Checklist; PCL-C, PTSD Checklist – Civilian Version

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Potentially traumatic events

Globally, most people, 70.4 percent, are estimated to experience traumatic events [7]. Similarly, in Sweden, 77.1 percent of women in the general population are estimated to experience such events [8,9]. Among pregnant women in six European countries, 34.6 percent are estimated to have experienced emotional, physical or sexual abuse, types of PTEs [10], while Swedish cross-sectional data show an estimated lifetime prevalence of 15.9 percent for emotional abuse, 14.2 percent for physical abuse and 15.5 percent for sexual abuse among pregnant women [11].

Fear of childbirth

FOC includes "experiences of fear, anxiety, or worry related to giving birth"[12]. FOC can be categorised as primary when preceding first pregnancy, and secondary when subsequent to a traumatic obstetric event [1]. Varying definitions of FOC and severe FOC are used [13,14]. The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) (15) is often used to measure FOC and scores of 85 or more taken to indicate FOC [16] as well as severe FOC [13,14]. Severe FOC has been estimated to occur among 6.3–14.8 percent of pregnant women globally, 12 percent in Scandinavia and 14.3 percent of childbearing women in Sweden, according to a recent meta-analysis and systematic reviews [13,14]. There is an effective treatment for FOC [17]. However, such treatment does not reach all of those afflicted. In 2018, only 8.9 percent of women who gave birth in Sweden received support for FOC [18].

Posttraumatic stress disorder

Having experienced a PTE, some individuals subsequently develop PTSD, a debilitating disorder characterised by re-experiencing the event, avoidance, negative changes in cognitions and mood as well as arousal and reactivity [19]. A 2017 World Mental Health Survey reported an estimated lifetime prevalence of PTSD of 3.9 percent globally, and 5.0 percent in high-income countries [20], such as Sweden. The estimated lifetime prevalence of PTSD among women in Sweden is higher at 7.4 percent [8]. Among pregnant women surveyed in Sweden, 12.0 percent reported posttraumatic stress symptoms [11]. A later, 2017, systematic review and meta-analysis estimated the prevalence of PTSD to be 4.6 percent among pregnant women globally [21]. Access to evidence-based treatment for PTSD in Sweden is low [22].

Aims

This study was conducted to provide current estimates of PTEs, including experiences of violence, FOC, support for it, and PTSD among pregnant women attending maternal care in Stockholm, Sweden.

Methods

A cross-sectional study was conducted. The Strengthening the reporting of observational studies in epidemiology (STROBE) checklist [23] was perused to guide the report of the study.

Settings and data collection

Maternal care is free of charge in Sweden and, in Stockholm, Sweden, includes lectures in preparation for childbirth at the major hospitals. Pregnant women (typically in pregnancy week 25 or later) attending such lectures, in 2017–2018, were asked to participate. They were given brief verbal and written information in conjunction with the lecture and asked to fill out relevant forms anonymously and return them in a sealed envelope to the researcher at the end of the lecture. Women choosing not to participate were asked to return unanswered forms in sealed envelopes. All women who were pregnant, understood Swedish, and attended a lecture were asked to participate.

The Swedish Pregnancy Register (SPR) holds information on pregnancy and childbirth in Sweden, from the first to the last antenatal care visit, typically from pregnancy week 9 to 8–16 weeks postpartum [24]. The register covered more than 90 percent of all deliveries in 2017 and aimed to include all deliveries in Sweden before the end of 2018[24]. The SPR collects data mainly from medical charts documenting pregnancy and childbirth. The reliability and validity of the information in the register is good [25]. We drew data on having received support for FOC from the SPR for all pregnancies and births in Region Stockholm, where the pregnancies occurred in the same period as those of our anonymous respondents'.

Instruments

Demographic data (age, pregnancy week, number of children, and the highest level of completed education) was collected using a simple form.

The Life Events Checklist for DSM-5 Extended Self-Report (LEC-5) [26] was used to investigate whether respondents had experienced any PTEs, ie if they had experienced them themselves, witnessed them, learned about them happening to a close family member or a friend or experienced them as part of their job. The worst event experienced was also captured by the LEC-5[26]. In addition, grouping LEC-5[26] items into broader categories allowed for analyses of the prevalence of having experienced violence. We grouped items into categories capturing physical, sexual and any type of violence: physical (physical assault and assault with a weapon), sexual (sexual assault and other unwanted or uncomfortable sexual experience), and any (physical assault, assault with a weapon, sexual assault, other unwanted or uncomfortable sexual experience, combat or exposure to a war-zone, captivity and sudden violent death). The reliability and validity of the LEC-5 are currently unknown, but the reliability and validity of an earlier, highly similar version were deemed satisfactory [27].

The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) version A [15] measured fear of childbirth during pregnancy. The form has a range of 0–165[15]. Scores of 85 or more indicate fear of childbirth [16]. The reliability and validity of W-DEQ were initially found satisfactory [15]. Later research indicated that the scale is multidimensional, and suggested that a subset of the W-DEQ items, labelled the Negative emotions subscale, represent FOC and that a mean subscale score of 2.5 or more warrants follow up [28]. We administered W-DEQ [15] in its entirety, and used the Negative emotions subscale [28] as our primary outcome and the much-used cut-off of 85 or more [16] as a secondary outcome.

The PTSD Checklist (PCL)[29] was used to assess PTSD. Scores range from 17 to 85, and a score of 44 or more indicates PTSD [30]. We used the LEC-5 and PCL in conjunction to indicate current PTSD so that PTSD was considered present when a respondent reported experiencing at least one PTE on the LEC-5 and symptoms fulfilling the diagnostic criteria for PTSD on the PCL, ie at least one symptom of re-experiencing the event, three symptoms of avoidance, and two symptoms of increased arousal, all of these were rated 3–5 in the past month on the PCL response scale of 1–5, and the respondent's total PCL score was 44 or more. The psychometric properties of the PCL have been found satisfactory [30]. We used the PCL – Civilian version (PCL-C) for DSM-IV as the PCL for DSM-5 was not available in Swedish when data collection began.

Bias

Recall, response and selection biases may affect our results. It is conceivable that women who have developed PTSD remember and perceive PTEs as stressful or traumatic to a greater extent than women who have not developed PTSD after such events. Furthermore, PTSD

symptoms such as avoidance and shame may affect one's willingness to report PTEs. We chose to recruit participants at lectures rather than in conjunction with individual visits to maternal care as it allowed for swifter recruitment of larger numbers of participants. A majority of those attending lectures were about to have their first child. Our results may, therefore, generalise best to groups of pregnant women with a large proportion of primiparas. We have no data on those who chose not to participate, nor do we have data on those who did not attend lectures in preparation for childbirth. We can therefore not investigate potential differences between those who answered anonymous questionnaires and those who did not.

Sample size

The general maternal care sample size was based on previous studies by the authors and is similar to those in other studies on experiences of PTEs among pregnant women (eg [11]). The SPR sample included all available data on women in Region Stockholm who were in pregnancy week 25 or later at the same time as our anonymous respondents.

Statistical analyses

Statistica, version 13.3 (TIBCO Software Inc.), was used for all analyses. We calculated prevalence and 95 percent confidence intervals (CIs), mean scores, and standard deviations. Missing values were the results of respondents not having provided answers, and, in very few instances, of the researchers not being able to read the respondents' handwriting. Those who had left one or more items of the instrument in question unanswered were excluded from analysis, eg data from respondents who had answered all but one PCL item were not included in the analysis of the prevalence of PTSD.

Ethical approval

The Regional Ethical Review Board in Stockholm, Sweden, gave the study ethical approval.

Results

One thousand one hundred fifty-seven women in late pregnancy attending lectures in preparation for childbirth at hospitals in Stockholm, Sweden were asked to participate, 945 of them chose to participate, resulting in a response rate of 81.7 percent. SPR data on pregnant women giving birth within Region Stockholm was extracted (n = 40 344). See Table 1 for an overview of data available for analysis and Table 2 for participant characteristics.

Potentially traumatic events

Having experienced one or more PTEs was reported by 78.5 percent (95% CI 75.6–81.3) of the pregnant women. On average, the women reported experiencing 3.7 types of PTEs (SD 3.5). Having experienced life-threatening illness or injury (43.5%, 95% CI 40.1–46.9), a transportation accident (35.9%, 95% CI 32.7–39.2) or physical assault (32.4%, 95% CI 29.3–35.7) were the most frequently reported types of PTEs, while life-threatening illness or injury (21.0%, 95% CI 17.3–25.1), any other very stressful event or experience (11.6%, 95% CI 8.8–14.9) and a transportation accident (10.9%, 95% CI 8.2–14.2) were reported as the worst event most often. Of those who reported having experienced at least one PTE, 30.3 percent (95% CI 26.1–34.8) reported having experienced their worst PTE before the age of 18. Personal experience of sexual violence was reported by 22.7 percent (95% CI 19.9–25.7) of the pregnant women. See Tables 3 and 4 for more on PTEs, and experiences of violence.

Table 1
Participant data available for analysis.

	Anonymous respondents	Swedish Pregnancy Register
	Percent (number)	
Demographic data		
Age	98.9 (9 2 6)	–
Pregnancy week	98.5 (9 2 2)	–
Number of children	97.5 (9 1 3)	99.5 (40 138)
Highest level of education completed	98.6 (9 2 3)	93.2 (37 612)
Types of PTEs experienced (LEC-5)	89.6 (8 3 9)	–
FOC (W-DEQ)		
Negative emotions subscale	86.5 (8 1 0)	–
Total score	82.8 (7 7 5)	–
Received support for FOC	–	77.0 (31 059)
PTSD (PCL-C)	78.3 (7 3 3)	–

PTEs, Potentially traumatic events; LEC-5, Life Events Checklist for DSM-5 Extended Self Report; FOC, Fear of childbirth; W-DEQ, Wijma Delivery Expectancy/Experience Questionnaire version A; PTSD, posttraumatic stress disorder; PCL-C, PTSD Checklist – Civilian Version.

Table 2
Participant characteristics.

Participant characteristics	Anonymous respondents	Swedish Pregnancy Register
Age in years, mean (SD)	31.1 (4.4)	–
Pregnancy week, mean (SD)	32.2 (3.9)	–
Number of children (%)		
0	84.9	44.1
1	13.7	–
2	1.1	–
3	0.3	–
4	0.0	–
Highest level of education completed (%)		
Primary school	1.1	4.7
Secondary school	22.1	25.4
Tertiary education	76.8	61.4

SD, standard deviation; %, percent.

Table 3
Prevalence of potentially traumatic events.

Potentially traumatic event	Percent	95% CI
Life-threatening illness or injury	43.5	40.1–46.9
Transportation accident	35.9	32.7–39.2
Physical assault	32.4	29.3–35.7
Other unwanted or uncomfortable sexual experience	32.1	28.9–35.3
Sudden violent death	27.0	24.1–30.2
Sudden accidental death	27.0	24.0–30.1
Sexual assault	26.8	23.8–29.9
Any other very stressful event or experience	26.4	23.4–29.5
Severe human suffering	23.3	20.5–26.3
Serious accident	22.7	19.9–25.7
Assault with a weapon	19.0	16.4–21.8
Fire or explosion	18.9	16.4–21.7
Natural disaster	18.0	15.5–20.8
Combat or exposure to a war-zone	6.4	4.8–8.2
Exposure to toxic substance	6.0	4.5–7.8
Captivity	4.3	3.0–5.8
Serious injury, harm, or death you caused to someone else	2.1	1.3–3.3

95% CI, 95 percent confidence interval.

Fear of childbirth

Of the pregnant women in maternal care, 28.8 percent (95% CI 25.7–32.0) had subscale scores of 2.5 or more on the Negative emotions

Table 4
Prevalence of experiences of violence.

Type of violence	Percent	95% CI
Physical violence		
Happened to me	13.8	11.5–16.3
Experienced in some form	36.6	33.4–40.0
Sexual violence		
Happened to me	22.7	19.9–25.7
Experienced in some form	39.3	36.0–42.7
Any violence		
Happened to me	31.0	27.8–34.2
Experienced in some form	58.7	55.2–62.0

95% CI, 95 percent confidence interval; Happened to me, happened to the respondent herself; Experienced in some form, happened to the respondent herself, was witnessed by her, she learned about it happening to a close family member or friend or it was part of her job.

subscale, suggesting FOC. When applying the W-DEQ [15] cut-off score of 85 or more to indicate FOC [16], the prevalence of FOC was 17.8 percent (95% CI 15.2–20.7). SPR data indicate that 10.9 percent (95% CI 10.5–11.2) of pregnant women in Stockholm, Sweden received support for FOC.

Posttraumatic stress disorder

Current PTSD, based on diagnostic criteria and severity, was reported by 4.1 percent (95% CI 2.8-5.8) of the pregnant women.

Discussion

Most participants reported experiencing at least one PTE, which is similar to previous findings [7,8], yet, having experienced PTEs was more common than in earlier Swedish studies [8,9]. Having experienced violence was about as common as previously reported in a European study of experiences of abuse among pregnant women [10]. The prevalence of physical violence was similar to that in an earlier Swedish study [11], but we found sexual violence to be more common, with more than one in five pregnant women having experienced sexual violence. Also of note is that approximately 60 percent of the pregnant women report having experienced violence.

When using the W-DEQ [15] Negative emotions subscale [28] to indicate FOC, the prevalence of FOC was estimated to be 28.8 percent. The widely used cut-off score of 85 [16] yielded a lower rate of 17.8 percent and a rate closer to, but still higher than, the global prevalence of 6.3–14.8 percent, Scandinavian 12 percent and Swedish 14.3 percent reported in a recent meta-analysis and systematic reviews [13,14]. These findings may indicate that FOC is more common today than previously, although a definitive conclusion is challenging to draw as researchers have used different methods when studying FOC. Should further research indicate that the Negative emotions subscale [28] provides a better measure of FOC than the W-DEQ cut-off score of 85 [16] and our findings are replicated, it would indicate that FOC is considerably more common than previously estimated. These findings, in turn, highlight the need for evidence-based treatment for FOC and access to such treatment. According to SPR data on pregnant women attending maternal care in Stockholm, Sweden 10.9 percent of pregnant women received support for FOC, which is higher than the national figure, at 8.9 percent, in 2018 [18], but indicates that support for FOC only reached about 38 percent of the afflicted. FOC has been shown to occur in similar amounts of pregnant women in the Nordic countries [10], and therefore our results on FOC may generalise to pregnant women attending lectures in preparation for childbirth in Sweden as well as the other Nordic countries.

Our results are similar to those previously reported [21] in that approximately four in 100 pregnant women in general maternal care reported current PTSD, indicating that it is a widespread disorder. PTSD is more common in high-income countries, such as the Nordic countries, rather than in middle-income countries [20], and our results may generalise to pregnant women attending lectores in preparation for childbirth in Sweden and the other Nordic countries. As PTSD has been reported to be associated with adverse obstetric outcomes [6], screening for it and other mental disorders, during pregnancy, and referring those in need to other health-care providers offering evidence-based treatment is likely to be beneficial. Although PTSD is common, the availability of evidence-based treatment is low [22], and access to such treatment may need to be improved.

The strengths of this study include high response rates among anonymous respondents and current estimates of the prevalence of PTEs, FOC, support for it, and PTSD among pregnant women in Swedish maternal care.

The main limitations are the use of self-report data sensitive to bias and questionnaires rather than structured clinical interviews to estimate the rates of PTSD. However, a recent meta-analysis found that PTSD prevalence did not differ by the use of questionnaires vs clinical interviews [21]. Thus, our use of the PCL-C rather than a clinical interview may not have affected results substantially.

Conclusions

In Stockholm, Sweden, most pregnant women in maternal care had experienced PTEs, and more than one in five had experienced sexual violence themselves. FOC was estimated to be common, but support for FOC was scarce. Approximately 1 in 25 had current PTSD. These findings highlight the need to prevent violence, find pregnant women suffering from FOC or PTSD, develop an evidence-based treatment for FOC, and provide such treatment for PTSD.

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