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Breastfeeding in the context of domestic violence – a cross sectional study

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Conflict of interest

“No conflict of interest has been declared by the author (s)”

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Authors' Contributions

The first author conceived and planned the study, as well as performed the collection of the data. Both authors contributed to the analysis and interpretation of the data; both authors drafted the manuscript, read, and approved the final manuscript.

ABSTRACT

Aims: to determine the differences in breastfeeding among women who did and did not experience domestic violence during pregnancy and postpartum in a Swedish context. In addition, to identify possible differences regarding breastfeeding between groups with or without a history of violence. Further, determine the relationship between exclusive breastfeeding and symptoms of depression.

Background: History of violence may increase the risk of depression and a decrease in, or cessation of breastfeeding.

Design: The study has a cross-sectional design.

Methods: Data was collected prospectively from March 2012 to May 2015. A cohort of 731 mothers answered a questionnaire from a larger project (1.5 years postpartum).

Results: Breastfeeding was reported by 93.7 % of participants. Women exposed to domestic violence during pregnancy and/or postpartum (4.5 %) were just as likely to breastfeed as women who had not reported exposure to domestic violence. There were no statistically significant differences between the groups with or without a history of violence regarding exclusive breastfeeding. Women reporting several symptoms of depression, breastfed exclusively to a lesser extent than women who had a few symptoms of depression.

Conclusion: Domestic violence did not influence breastfeeding prevalence or duration. Breastfeeding did not differ in women with or without a history of violence. Symptoms of depression influenced duration of exclusive breastfeeding. Beyond recognising women who are exposed to violence, it is important to identify and support pregnant women and new mothers with symptoms of depression as their health and the health of their infants depends on the mothers' mental well-being.

SUMMARY STATEMENT

Why is this research needed?

- Knowledge regarding breastfeeding prevalence in relation to domestic violence and to depression is needed in order to identify where resources should be allocated for those who are in necessity of it.
- The health of new-borns depends on their mother's mental well-being.

What are the key findings?

- Domestic violence did not influence breastfeeding prevalence or duration negatively.
- Women with several symptoms of depression breastfed exclusively to a lower extent than those who had fewer symptoms.
- Exclusive breastfeeding continues to decline in Sweden during the first week of the child's life.

How should the findings be used to influence policy/practice/research/education?

- It is prudent to screen pregnant women and new mothers for symptoms of depression as their health and the health of their infants depends on the mother's mental well-being.
- There is a clear need to continue to improve the prevalence of breastfeeding in Sweden; its decline should be a warning to educators, midwives and paediatric nurses.
- A decrease in the prevalence of exclusive breastfeeding within the first week of the child's life should be a warning to all health care providers who are involved in the care of mothers-to-be and new mothers.

KEYWORDS

breastfeeding, domestic violence, depression, history of violence, nurses/midwives/nursing, postpartum

INTRODUCTION

Women and children who are exposed to domestic violence during pregnancy and the postpartum period are at risk for long-lasting health consequences (Sharps et al. 2007, Shah et al. 2010). Moreover, their predicament constitutes major public health- and human rights issues worldwide (World Health Organization 2016). Through a systematic review a statistical association between history of abuse and depressive symptoms in the perinatal period was found (Alvarez-Segura et al. 2014). Despite the relaxing and anti-depressive effects of breastfeeding (Uvnäs-Moberg et al. 1990), women with a previous history of anxiety and depression are at risk for early cessation of breastfeeding (Ystrom 2012). For those women, early cessation is an additional multiplicative risk for developing postpartum anxiety and depression (Ystrom 2012). It is already known that female adolescents with a history of childhood sexual abuse are reluctant to breastfeed due to being uncomfortable with intimacy (Bowman 2007). A Norwegian prospective cohort study reported an association between an exposure to abuse and early cessation of breastfeeding (Sorbo et al. 2015). In contradiction, an Australian pragmatic cluster randomised trial reported that women experiencing domestic violence were just as likely to breastfeed as women not exposed (James et al. 2014). In a Swedish context, there is limited knowledge regarding breastfeeding prevalence in relation to domestic violence and depression. The aim of this study was to explore the prevalence and duration of breastfeeding in women who have experienced domestic violence during pregnancy and postpartum in a Swedish context. In addition, we sought to identify possible differences regarding breastfeeding between groups with or without a history of violence. Finally, we explored the prevalence of exclusive breastfeeding and symptoms of depression.

Background

Domestic violence is a common, chronic and complex social problem found in all cultures and all strata of societies (Shadigian & Bauer 2004, Cook & Bewley 2008). Exposure to abuse is associated with adverse physical (Silverman et al. 2006, Sharps et al. 2007), psychological, sexual and reproductive health outcomes (World Health Organization 2016). Domestic violence is here defined as physical, sexual, psychological or emotional violence or threats of physical or sexual violence inflicted on a woman. The perpetrator can be a family member, an intimate or former partner, parents, siblings, as well as a person very well known to the family (Krug et al. 2002). According to this definition, intimate partner violence (IPV) is a part of domestic violence. Further, domestic violence can be initiated during pregnancy (Finnbogadottir et al. 2011), and it can be a continuum of existing violence (World Health Organization (WHO) 2005, Finnbogadottir et al. 2014a). It is important that midwives and other health care professionals pay attention to both pregnant women and new mothers at risk of exposure to domestic violence (Finnbogadottir et al. 2014a, Socialstyrelsen (The National Board of Health and Welfare) 2014a). The prevalence of domestic violence during pregnancy and post-partum is uncertain due to difficulties in obtaining reliable data (Fraga et al. 2014). A meta-analysis including studies from 23 high-income countries showed the overall prevalence of domestic violence to be 13.3% (James et al. 2013). The prevalence of domestic violence among pregnant women in Sweden is reported to be 1% in early second trimester, and 2.5 % in the third trimester (Finnbogadottir et al. 2014a, Finnbogadottir et al. 2016, Finnbogadottir & Dykes 2016). Worldwide, one in three women suffer partner or non-partner abuse during their lifetime, and an increasing body of research shows that a history of violence affects women's physical and mental health negatively (WHO 2013a). A history of violence is all sorts of violence experienced during a life course regardless of perpetrator or level of abuse (Swahnberg & Wijma 2003). A history of violence is a factor known to increase the risk of

developing anxiety and depression, which in turn can have a negative impact on sexual, reproductive and postpartum health, as well as a decrease in, or even premature, cessation of breastfeeding (Silverman et al. 2006).

Breastfeeding offers indisputable health advantages for the mother and her infant (Stuebe & Schwarz 2010, Victora et al. 2016). For the mother, breastfeeding can, in the short term, reduce the amount of postpartum bleeding, facilitate optimal mother-baby interaction and ease the return to pre-pregnancy weight (Heinig & Dewey 1997, Saxton et al. 2015). In the long term, breastfeeding improves birth spacing and reduces the risk of severe diseases (Gouveri et al. 2011, Scoccianti et al. 2015). For infants, breastfeeding is associated with a reduction in sudden infant death (Victora et al. 2016). The risk of contracting several serious and chronic diseases such as diabetes is significantly reduced; in addition, recent studies report positive effects on cognitive intelligence (Duijts et al. 2009, Horta et al. 2015, Victora et al. 2015). World Health Organisation recommends exclusive breastfeeding for six months, and thereafter complementary foods can be introduced alongside continued breastfeeding for up to two years or even longer (Kramer Michael & Kakuma 2012, World Health Organization (WHO) 2017). The National Food Agency in Sweden adopted the breastfeeding recommendation in 2003 (Hornell et al. 2013). Moreover, the Scandinavian countries and Japan – all known for their commitment to democracy and gender equality – report the highest prevalence of exclusive breastfeeding (Kristiansen et al. 2010, Ibanez et al. 2012, World Economic Forum 2013).

In Sweden, both the social and medical value of breastfeeding has been proclaimed and facilitated by the law with paid maternal leave for up to a year and a half year (Government offices of Sweden 2016), yet breastfeeding prevalence is declining in Sweden (Socialstyrelsen (The National Board of Health and Welfare) 2014b). Between 2004 and 2014, the rate of

exclusive breastfeeding declined by 11.5 % within the first week of life, i.e., from 89.4 % to 79.1. %. During the same period, exclusive breastfeeding up to four months of age declined by almost 19.0 % (63.8% - 51.8%) (Socialstyrelsen (The National Board of Health and Welfare) 2014b). The decline may be due to cultural, emotional, epigenetically, medical, physiological or social causes (Porta et al. 2016).

Stockdale, Sinclair, Kernohan and Keller (Stockdale et al. 2011) discuss breastfeeding psychology based on motivation theories: the woman's motivation to breastfeed is controlled by a balance between her values about how important breastfeeding is for her and her perceived sense of how she will succeed at breastfeeding (high self-esteem and sense of competence in the breastfeeding situation). The woman's knowledge, attitudes and feelings towards breastfeeding, and what is expected of her from her environment, are incorporated into her values. A woman not initiating breastfeeding or breastfeeding for only a short period can be a consequence of not evaluating breastfeeding highly. The best conditions for a long and positive breastfeeding experience are when a woman values breastfeeding highly and has high self-esteem with nursing and competency (Stockdale et al. 2011).

THE STUDY

Aim/s

The aim of this study was to determine the differences in breastfeeding among women who did and did not experience domestic violence during pregnancy and postpartum in a Swedish context. In addition, to identify possible differences regarding breastfeeding between groups with or without a history of violence. Further, determine the relationship between exclusive breastfeeding and symptoms of depression.

Design

The present study has a cross sectional design. The data used originates from a cohort of 1.939 pregnant women who participated in the project framed as “*Pregnant women and new mothers’ health and life experience*” (Finnbogadottir et al. 2014a).

Participants

Included were pregnant women ≥ 18 years enrolled at the antenatal clinic (ANC) who comprehended Swedish or English sufficiently to fill in a questionnaire. The participants were recruited in early second trimester and with an average age of 30 years (mean 30.1, SD 4.8; min 18-48 years).

Data collection

The ANC midwife gave to the participants’ individual verbal and written information about the purpose of the study. The recruitment and setting, which is multicultural, is described in detail elsewhere (Finnbogadottir et al. 2014a, Finnbogadottir & Dykes 2016). Data were collected using questionnaires and included participants who answered three questionnaires (Q-I to Q-III). The participants responded to the first Q-I in early pregnancy and the second Q-II in late pregnancy in gestational week 34 at ANC. Data collection was performed prospectively and longitudinally from March 2012 to May 2015. If, the participants required any additional help, health professionals were on hand to assist them. The available dataset used in the present study comprises a cohort of 731 mothers, all of whom answered the third and last questionnaire, (Q-III) 1-1.5 years postpartum, at routine visit to the Child Welfare Centre (CWC) (Fig 1).

Questionnaire

All data were based on self-administered questionnaires (Q-I to Q-III), which were grounded on validated instruments (Finnbogadottir *et al.* 2014a). Q-III (available dataset) included two questions regarding breastfeeding, which were not analysed previously. The two questions were posed as follows: *Do or did you breastfeed your child?* (with alternative answers either “yes” or “no”); and *How long time and how much do/did you breastfeed your child?* (with the request to mark the most accurate option). The following options were offered: “only breastfed”, “partly breastfed”, “not breastfed at all”, with the time intervals one week, two months, four months, six months, nine months, and twelve months. Further details of the questionnaire have been reported previously (Finnbogadottir *et al.* 2014a).

Ethical considerations

As recommended by the Declaration of Helsinki, the likelihood of advantages or disadvantages of the study was considered (WMA General Assembly: Fortaleza, Brazil 2013). Further, the entire project was performed in accordance with WHO’s ethical and safety recommendations for research on domestic violence against women (World Health Organization 2001). Additionally, information was given about the legalities of the National Data Inspection. The participants were promised confidentiality; and should any of them required help, professional assistance would be provided. Informed written consent was obtained before participation. Each answered questionnaire got a unique code number and were kept safely in a deposit box. In addition, approval was provided from the Regional Ethical Review Board in Southern Sweden (Dnr: 640/2008).

Validity and reliability

The main instrument used in the questionnaires was *NorVold Abuse Questionnaire* (NorAQ), which is constructed and validated in Nordic countries and has shown good reliability,

validity and specificity concerning the abuse variables (Swahnberg & Wijma 2003). The *Edinburgh Postnatal Depression Scale* (EPDS), designed to screen for risk of depression during the postnatal period, is validated and has a satisfactory sensitivity (85%) and specificity (77%) (Cox et al. 1987). The present study used the EPDS full scale with 10 items on a four-point scale from 0-3 (high scores = more symptoms of depression). SOC-13 (Antonovsky 1987) was included in Q-I. The SOC-scale is cross-culturally validated and reliable (Antonovsky 1993).

Classification of the Variables

Variables and their classification included in the socio-demographic characteristics were: Age as 18-25, 26-34 and ≥ 35 years. Language as a foreign language or Swedish spoken at home. Educational status as a compulsory school or less, high school or university. Employment status as employed (including parental leave and studying) or unemployed (including long-term illness). Financial distress was dichotomized as “no” (no problem) or “yes” (fairly or very difficult). Depression was calculated on EPDS scores with an cut-off ≥ 13 chosen as representing the presence of symptoms of postpartum depression (Cox *et al.* 1987). A low score on EPDS < 13 referred to having “few symptoms of depression” and high score ≥ 13 referred to having “several symptoms of depression”. Variables regarding maternal characteristics and lifestyle included parity, which was classified as primiparae or multiparae. Body mass index (BMI) was dichotomized as under-/normal weight or overweight/obese (WHO 2013b). Unintended pregnancy as “yes” or “no”. Breastfeeding as yes or no (regardless how long time). Alcohol consumption was dichotomized as “yes” (at least once a month) or “no”. Cohabiting status was dichotomized as being single/living apart, or as a common law spouse/married. Smoking/snuffing was dichotomized as “yes” versus “no”. The *Sense of Coherence Scale* (SOC-13) was dichotomized into $\text{SOC} \leq 64$ and $\text{SOC} > 64$ (Ekelin et

al. 2009). A high score of SOC indicates personal ability to maintain and improve health in stressful situations and low score of SOC indicates the opposite (Antonovsky 1987).

Data analysis

Descriptive statistics were utilized to show the prevalence of breastfeeding. Chi² analysis was used to investigate differences in socio-demographic, maternal characteristics, lifestyle and symptoms of depression among women who had reported a ‘history of violence’ versus “non-history of violence’. In addition, Chi² was utilized to investigate the prevalence of breastfeeding in relation to domestic violence during pregnancy and postpartum, as well as in relation to symptoms of depression. The EPDS scores were computed for only those responding to all ten questions. The SOC score was computed for only those responding to all thirteen items. A P-value of <0.05 was considered to indicate statistical significance. The Statistical Package for Social Sciences (SPSS) version 22.0 for Windows was used for performing the analysis.

RESULTS

There were no statistically significant differences in most socio-demographic characteristics in the investigated cohort (N = 731). The mean age (at recruitment) was 30 years (mean 30.0, SD 4.8; min 18 - 44 years); the majority of women had Swedish as a first language, had a university education and were employed. Almost half of the women reported financial distress regardless of experiencing a history of violence or not. Those women who significantly more often reported a history of violence also reported high scores on the EPDS (Table 1).

In the investigated cohort women who reported a history of violence were significantly more often single/living apart, as well as smoking/snuffing. Further, these same women had a low

score on the SOC-scale which indicates poor ability to maintain and improve health in stressful situations. Overall, among maternal characteristics and lifestyle in the investigated cohort, more women were multipara, of normal weight, and had planned pregnancies; moreover, 93.7 % reported that they had breastfed to some extent. Alcohol consumption did not differ between the women, regardless of having a history of violence or not (Table 2).

The prevalence and duration of exclusively breastfeeding in the first week to one year postpartum decreased from 72.4 % at the child's first week to 67.5 % at two months, 59.4 % at four months, 43.9% at six months, 12.0 % at nine months, and 5.1 % at 12 month's age (Histogram 1).

There were no statistically significant differences between the groups with or without a history of violence regarding exclusive breastfeeding. Women with a history of domestic violence reported to a higher rate exclusive breastfeeding up to six months although, this were not statistically significant (table 3). Among the investigated cohort, there were 4.5 % ($n = 33$) of women who reported domestic violence during pregnancy and/or postpartum (all reported a history of violence, not shown in table 3).

Women who reported several symptoms of depression breastfed exclusively to a lesser extent two months and four months postpartum than women who had a few symptoms of depression on the EPDS scale (table 4). Women with a low score on the SOC-scale breastfed exclusively less often at two and four months ($p = 0.013$ respectively $p = 0.006$, not shown in table).

DISCUSSION

The main finding in this study was that those women who were exposed to domestic violence during pregnancy and/or postpartum (all reported a history of violence) were just as likely to breastfeed as women who had not reported exposure to domestic violence. This finding is in accordance with findings in the RCT from Australia, which reported that women who were exposed to domestic violence were just as likely to breastfeed as women not exposed to domestic violence (James et al. 2014). This is in contrary to an American population-based study that included 118,579 women, where abused women were overrepresented among mothers who did not breastfed or ceased breastfeeding prematurely (Silverman et al. 2006). The results did not support the theory of Stockdale et al. (2011), which indicated that women with low self-esteem would initiate breastfeeding to a lower extent. On the whole, women with a history of violence report low self-esteem to higher extent than women who are not exposed. Reviews of 94 studies to examine if women abused by their partners were less likely to breastfeed than their non-abused peers were (Bair-Merritt et al. 2006). They found that the evidence is insufficient to draw any conclusions due to so few studies and a relative lack of data addressing breastfeeding and partner violence (Bair-Merritt et al. 2006). In this study, the prevalence of women reporting domestic violence during pregnancy, as well as during post-partum period, is in concordance with previous reported prevalence (Finnbogadottir et al. 2014a, Finnbogadottir et al. 2016, Finnbogadottir & Dykes 2016), indicating that the small number of women included in present study may not impact the result. In accordance to earlier research, the strongest risk factor for domestic violence during pregnancy and postpartum is having a history of violence (James et al. 2013, Finnbogadottir et al. 2014a, Finnbogadottir et al. 2016, Finnbogadottir & Dykes 2016).

Women included in the present study who reported a history of violence also reported exclusive breastfeeding to a higher extent than women who did not report a history of violence; however, this was not statistically significant. This finding contradicts earlier research describing new mothers' abilities to care for their infants during the postpartum period as being limited as a result of their partner's jealousy and unwillingness to decrease physical and sexual demands (Silverman et al. 2006). Rather, it has been reported that women who are exposed to IPV during their pregnancy are very aware of their unborn babies' health, as well as being very lonely in their vulnerable situation (Finnbogadottir et al. 2014b). Therefore, it can be assumed that women after birth do their very best for their new born despite having to struggle.

Another important finding was that the history of violence was not associated with an early cessation of any form of breastfeeding, which contradicts previous research (Wallenborn & Masho 2015, Sorbo et al. 2015). A North-American study reported that women exposed to violence before or during pregnancy were less likely to initiate breastfeeding; and if they initiated breastfeeding, they ceased to higher extent before the infant was five weeks old (Wallenborn & Masho 2015). Similar results were reported in the recent Norwegian prospective cohort study (Sorbo et al. 2015), which found that early cessation of any duration of breastfeeding was strongly associated with a history of violence. This discrepancy may be due to different definitions of exposure to violence as well as differences in study designs. The Lancet series on breastfeeding reports a difference in the prevalence of breastfeeding at 12 months in Norway (35%) and Sweden (16%) (Victora et al. 2016). Nevertheless, women in Sweden and Norway, in general, have quite similar socio-economic conditions regarding education, rate of employment and terms for parental leave (Hagelund, & Bryngelson, 2014). However, we cannot exclude that there might be cultural differences regarding the willingness

to disclose a history of violence in pregnant women, which, in turn, could account for the differences in outcomes. The literature supports the belief that shame and self-blame are an integral part of the experience of women exposed to violence (Edin et al. 2010, Engnes et al. 2012, Finnbogadottir et al. 2014b).

The present study confirms that exclusive breastfeeding continues to decline (in Sweden) during the first week of the child's life, with an eight-percent reduction since 2013. However, breastfeeding at aged four months increases by more than six percent compared to the national figures, and by almost ten percent in the region where the current study has been conducted (Scania) (Socialstyrelsen (The National Board of Health and Welfare) 2014b). At the age six months, exclusive breastfeeding is more than 28 % higher compared to both national and local levels, which is in line with the recommendations of WHO and The National Food Agency in Sweden (Hornell et al. 2013, World Health Organization (WHO) 2017). Nevertheless, there is a clear need to continue to improve breastfeeding prevalence in Sweden. Keeping in mind present results, health care providers involved in the care of soon-to-be and new mothers should be motivated to continue the important work of increasing the prevalence of breastfeeding.

Being single/living apart, as well as smoking/snuffing was significantly more prevalent among women reporting a history of violence. This result is supported by a recently published study (Sorbo et al. 2015). On the other hand, the research found that being exposed to abuse was increased in women who were older, were overweight or obese, and who reported drinking alcohol while pregnant – none of which was found in the present study (Sorbo et al. 2015). The discrepancy in findings is difficult to explain as living conditions in the two Scandinavian countries are very alike (Hagelund & Bryngelson 2014).

Moreover, an equally important result showed that women who had a history of violence had significantly more symptoms of depression than those without. Furthermore, women with more symptoms of depression significantly breastfed exclusively to a lower extent at two months and four months than women who had fewer symptoms of depression. This finding is in accordance with earlier research reporting early cessation of breastfeeding or no breastfeeding at all being associated with an increased risk of maternal postpartum depression (Silverman et al. 2006, Ystrom 2012, Bowen et al. 2012). In earlier studies using the same cohort as the present study, causality was shown between exposure to violence during pregnancy and postpartum to several symptoms of depression (Finnbogadottir et al. 2016, Finnbogadottir & Dykes 2016). The combination of domestic violence and depression interacts; depression may have a higher impact on breastfeeding initiation and duration than domestic violence alone.

This new knowledge could contribute to the discussion whether midwives should screen women in early pregnancy not only for domestic violence but also for depression. In Sweden the past decade, it has been debated if routine screening for IPV should be incorporated or not into the midwives' work at ANC, mostly because of inadequate scientific evidence for possible favourable or non-favourable effects of such screening (Rådestad et al. 2008). A Cochrane review has showed that the detection of violence increases significantly upon enquiry, particular at ANC's (Taft et al. 2013). The Swedish National Board of Health and Welfare distributed new guidelines in 2014 for health care providers; it was built on the best available knowledge – knowledge that emphasises the importance of asking women in early pregnancy about their present and past experiences of violence (Socialstyrelsen (The National Board of Health and Welfare) 2014a). In 2014, it was reported that the ANC midwife asked

almost 80 % of all pregnant women in Sweden if they had experienced any violence (Graviditetsregistret (The Swedish Pregnancy Register) 2015).

This cross-sectional study had both strengths and limitations. A positive aspect is our having used validated instruments in the questionnaires (Cox et al. 1987, Antonovsky 1993, Swahnberg & Wijma 2003). Moreover, collecting prospective data, having a clearly defined cohort, and having the possibility to compare women exposed to violence to those who were not exposed at baseline was beneficial. A further strength of this study was that the questionnaire was available in both Swedish and English, which may have increased the likelihood of reaching a representative sample of women. More than a quarter of the participants' was foreign born, which is in line with the prevalence of deliveries by immigrant women in Sweden (Socialstyrelsen (The National Board of Health and Welfare) 2015).

Limitations

The nature of cross sectional design does not allow inferring causality. In addition, the cohort has decreased considerable since the initial recruitment, which in the current study resulted in a lower number of women who reported having experienced domestic violence during pregnancy and postpartum.

CONCLUSION

Women with a history of violence breastfed to the same extent as women without a history of violence. However, women with several symptoms of depression breastfed exclusively to a lower extent. Considering the decreasing numbers of women breastfeeding in Sweden and the vital impact breastfeeding has on infant- and maternal health, it is fundamental to

continuously encourage and support high breastfeeding rates. Not only is it desirable to recognize women who are exposed to violence but also crucial to identify and screen for depression in early pregnancy to give suitable treatment and support to those with symptoms of depression as the health of new-borns depends on their mother's mental well-being.

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