

Emotional, physical, and sexual abuse and the association with symptoms of depression and posttraumatic stress in a multi-ethnic pregnant population in Southern Sweden

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Objectives To describe the prevalence of emotional, physical, and sexual abuse and analyze associations with symptoms of depression and posttraumatic stress (PTS) in pregnancy, by ethnic background.

Study design Cross-sectional study of the Swedish data from the Bidens cohort study.

Ethnicity was categorized as native and non-native Swedish-speakers. Women completed a questionnaire while attending routine antenatal care. The NorVold Abuse Questionnaire (NorAQ) assessed a history of emotional, physical or sexual abuse. The Edinburgh Depression Scale-5 measured symptoms of depression. Symptoms of Posttraumatic Stress (PTS) included intrusion, avoidance and numbness.

Results Of 1003 women, 78.6% were native and 21.4% were non-native Swedish-speakers. Native and non-native Swedish-speakers experienced a similar proportion of lifetime abuse. Moderate emotional and physical abuse in childhood was significantly more common among non-native Swedish-speakers. While sexual abuse in adulthood was significantly more prevalent among native Swedish-speakers. Emotional and sexual abuse were significantly associated with symptoms of depression for both natives and non-natives. Physical abuse was significantly associated with symptoms of depression for non-natives only. All types of abuse were significantly associated with symptoms of PTS for both native and non-native Swedish-speakers. Adding ethnicity to the multiple binary regression analyses did not really alter the association between the different types of abuse and symptoms of depression and PTS.

Conclusion The prevalence of lifetime abuse did not differ significantly for native and non-native Swedish-speakers but there were significant differences on a more detailed level. Abuse was associated with symptoms of depression and PTS. Being a non-native Swedish-speaker did not influence the association much.

Keywords: Ethnicity; depression; emotional abuse; physical abuse; sexual abuse; Post Traumatic Stress

Abbreviations:

CI = Confidence Intervals

EDS-5 = Edinburgh Depression Scale, short version

EPDS = Edinburgh Postnatal Depression Scale

IPV= Intimate Partner Violence

OR = Odds Ratio

PTS = Posttraumatic Stress

NorAQ = the NorVold Abuse Questionnaire

Highlights

- The prevalence of lifetime abuse did not differ significantly for native and non-native Swedish-speakers.
- Moderate emotional and physical abuse in childhood was more common among non-native Swedish-speakers.
- Sexual abuse in adulthood was more common among native Swedish-speakers.
- Abuse was associated with symptoms of depression and PTS.

- Ethnicity had little influence on the association between abuse and symptoms of depression and PTS.

Introduction

Violence against women is a serious human rights' problem with public health implications worldwide [1]. Abused women have higher rates of abortion, complicated pregnancy, worse neonatal and infant outcomes, and more mental health problems, such as depression, anxiety, sleep, and eating disorders, compared to non-abused women [2]. The United Nations Declaration of the Elimination of violence Against Women, from 1993, defined violence in a broad sense as: "...any act of gender-based violence that results in, or is likely to result in physical, sexual or psychological harm or suffering of women" [3]. Other terms used for describing different forms of violence against women include, domestic or interpersonal or intimate partner violence (IPV), gender based violence, battered women, or simply abuse [4]. In 1999 to 2001, a cross-sectional study of women visiting gynecology clinics used the NorVold Abuse Questionnaire (NorAQ) including descriptive statements on severity of emotional, physical and sexual abuse as a child, as an adult, or both [5]. The lifetime prevalence of abuse across the five Nordic countries, was 19-37% for emotional, 38-66% for physical, and 17-33% for sexual abuse by any perpetrator [6]. In a recent cross-sectional study from southern Sweden, which also used NorAQ, 39.5% of the pregnant women reported a history of violence while only 1.0% reported domestic violence during pregnancy [7]. The rates of reported violence during pregnancy are usually much lower than lifetime abuse, also shown in the study by Devries et al who reported a prevalence of IPV during pregnancy of 1.8% in Denmark [8].

A history of physical, psychological and sexual abuse is an established risk factor for mental disorders such as depression and posttraumatic stress in women whether pregnant or not [2, 7, 9, 10]. In addition, research indicates that being an immigrant is associated with an increased risk for mental health problems [11-13]. In a population-based study in Sweden, Rubertsson et al. found that an increased risk for depressive symptoms in early pregnancy was associated with lack of social support, stressful life events, and being an immigrant [11]. A recent study of approximately one thousand women at mid-term pregnancy identified a higher risk of depressive and posttraumatic stress symptoms in those having another mother tongue than Swedish [12]. The results could not be explained by socioeconomic differences. Other factors, such as experiences of abuse may play a role. Not only the prevalence of abuse, but also the impact of abuse on mental health might vary between native and non-native pregnant women [14]. If the impact of abuse on mental health varies for natives and non-natives this should have implications for care.

Few studies, and none European, have investigated the role of immigrant status or ethnicity in the relationship between a history of abuse and mental health among pregnant women [15, 16]. A Canadian cross-sectional study of around five thousand pregnant women concludes that immigrant status does not change the association between violence and depression [15]. They provide no information on the ethnic background of the women. A number of studies exist providing the prevalence and impact of IPV among ethnic minority groups, without investigating if ethnic background influenced the impact of violence [14, 16].

We had the unique opportunity to investigate this, using the Swedish data from a European six-country cohort study [17]. At the time of the study, the Swedish city where women were recruited held a population of almost 300 000 people, with one third of its total population being foreign born [18].

The first aim of this study was to describe the prevalence of emotional, physical, and sexual abuse by ethnic background, including the level of severity and occurrence as a child or adult. Secondly, we analyzed the association between the different types of abuse and symptoms of depression and posttraumatic stress (PTS) by ethnic background. Thirdly, we explored the impact of ethnicity on the association between different types of abuse and symptoms of depression and PTS.

Material and methods

The study has a cross-sectional design and uses the Swedish data from the Bidens study, a 6-country, European cohort study investigation of lifetime experiences and delivery expectations and outcomes [17]. The sample size of the Swedish part comprised 1025 women. An unselected sample of pregnant women at six public and two private antenatal clinics within the catchment area of the University Hospital were recruited to a questionnaire-based study, between 1 March and 30 November 2008. Eighty percent of the women attending these clinics also deliver at this university hospital, which had 4500 births in 2008. The Regional Ethics Committee of Stockholm, Sweden, approved the study (Dnr2006/354-31).

The inclusion criterion was the ability to speak and read Swedish. Consecutive and eligible women who spoke Swedish when in contact with their midwife were given written information about the study during a scheduled routine visit. The questionnaire was administered to consenting women on the occasion of their routine oral glucose tolerance test at approximately 28 gestational weeks. The woman was seated in an adjacent room separated from her partner and other women. Each woman was asked to complete the questionnaire

while at the clinic and place it in a sealed envelope together with the signed informed consent form. The questionnaires were scanned and computerized into a data file.

The eight-page questionnaire (Suppl. File 1) included questions about socio-demographic background, general health and obstetric history [17]. Information on abuse, depression and symptoms of posttraumatic stress disorder was also collected [17]. Where available and possible, we used the Swedish version of the applied items used by others [5, 11]. Level of education was coded for total years of completed education (≤ 13 years or >13 years). Potential financial problems were investigated by asking, “If you received a bill of SEK 20 000.00, how easy would it be for you to pay it within a week?”[19]. Those indicating having no difficulties or had missing data were coded ‘No’ before statistical analyses. Others indicating having some difficulties or that it would be “very difficult” were defined as Yes, some or Yes experiencing financial distress, respectively. Ethnicity was addressed by asking, “Is your mother tongue other than Swedish? If so, please state the language.” Those reporting a language other than Swedish were categorized as non-natives.

Main exposure

Main exposure variables were experience of three types of abuse, emotional, physical and sexual, which women could report as experienced either as a child, as an adult, both, or not at all. The descriptive questions of abuse corresponded to different levels of severity of the abuse as validated in the Norvold Abuse Questionnaire (NorAQ) [5]. As the questionnaire in some of the other participating countries of the Bidens study was sent home to women, the questions about the perpetrator were not included, to avoid exposing women to increased risk for abuse by filling out the form. In this study we used, all four items of sexual abuse (mild, mild humiliation, moderate, and severe); all three items of emotional abuse (mild, moderate and severe) but only two out of three items of physical abuse (moderate and severe) (Fig. 1). Abuse was recoded into abuse as a child (< 18 years of age) and abuse as an adult (≥ 18 years of age). Mild physical abuse was excluded because it has shown low validity [5]. This means that women who only reported mild physical abuse were classified as not having suffered any abuse. Abuse experienced within the past 12 months was recoded into recent abuse. Those reporting emotional, or physical, or sexual abuse at any age or level of severity (except mild physical), were recoded as having experienced lifetime abuse of the respective abuse reported. Women who failed to respond to a particular abuse questions (three women) or reported no abuse were code as “No abuse” for that question. The additional question “Have you

experienced any of this during the last 12 months” was posed only to those reporting some type of abuse. The response was coded Yes, recent abuse, or No.

Outcome and definitions

The Edinburg Postnatal Depression Scale (EPDS), yielding a score between 0 and 30, has been validated in Swedish, and for the detection of symptoms of depression during pregnancy, with an optimal cut-off at ≥ 13 [20, 21]. We used the Swedish questions corresponding to the short version of the EPDS, EDS-5 [22]. It includes five items rated on a 0 to 3 scale, yielding a range of 0 to 15, with higher scores indicating more symptoms of depression for the week prior to filling in the questionnaire. Compared to the full version containing 10 items, the correlation has been estimated at 0.96 [22]. Having moderate symptoms was defined with a cut-off at ≥ 7 and ≥ 8 for severe symptoms of depression. For the purpose of logistic regression, ≥ 7 was chosen. The EDS-5 score was computed only for those responding to all five items (missing = 22).

Information about posttraumatic stress (PTS) symptoms during the last 12 months were collected using three questions from the Nordic study [5, 6]. Women answering “sometimes” or “often” to at least one of the three symptoms of intrusion, avoidance and numbness were defined as suffering from PTS symptoms [23]. Women indicating “no” or “rarely” and missing values of the three items were coded No. This is a slightly more restrictive coding than in our previous study in which we also categorized women who responded “rarely” to one of the three questions as suffering from symptoms of PTS [12].

Statistical analyses

We used Pearson’s chi-square test or Fisher’s exact test for categorical variables for differences between groups. We used multivariate logistic regression analyses to assess the association between the dependent variables of symptoms of depression and PTS and the independent variables of lifetime emotional, physical and sexual abuse. First we performed stratified analyses by ethnicity. The three types of lifetime abuse were applied one-by-one to the multivariate logistic regression model controlling for the a priori selected covariates: age (in years), education, marital status and financial distress. Secondly, we performed binary multiple logistic analyses assessing the association between the different types of abuse and symptoms of depression and posttraumatic, testing two models. In model one; we adjusted for ethnicity and age. In model two, we additionally adjusted for financial distress, marital status

and education. We tested for interaction by adding the variable “abuse by ethnicity” into the binary multiple regression analyses. There was no significant interaction, so we removed the product term from the analyses. All *p*-values were two-tailed. We present *p*-values and 95% confidence intervals (CI) of crude and adjusted odds ratios (OR, aOR). We used the statistical software package IBM SPSS version 22. Comparison group for all analyses in table 3 and 4 was women not reporting any abuse.

Results

Of the total 1025 women who filled in the questionnaire, 22 (2.1%) did not indicate their mother tongue, resulting in 1003 records for the analyses. Swedish as mother tongue was indicated by 788 (78.6%) women, 215 (21.4%) checked “not native Swedish” (in all 41 different languages). Ethnic language to be other than Swedish was as follows: other Nordic (2.8%); West Germanic/Northern European (4.8%); Slavic and Central European (6.0%); Arabic, Turkish, and Kurdish (4.5%); Asian or unspecified languages (3.4%). The women filled out the questionnaire during gestational weeks 27 to 30 (mean 28.61, SD ± 1.73).

Table 1 shows some background characteristics of the study sample. Non-native Swedish-speakers were of younger age ($p < 0.001$), more had ≤ 13 years of education ($p < 0.001$), and experienced more financial distress ($p = 0.002$), compared to native Swedish-speakers. The prevalence of symptoms of depression (EDS score ≥ 7) was higher among non-native Swedish-speakers ($p < 0.001$) than in native speakers (21.9% vs. 11.5%, respectively). Having at least one of three PTS symptoms was more frequent in non-natives (17.7%) than in native Swedish speaking women (10.4%) ($p = 0.004$).

The prevalence of lifetime emotional abuse was 15.9%, physical 14.2%, and sexual 15.5% (Table 2). There were no significant differences between native and non-native Swedish-speakers for lifetime emotional, physical and sexual abuse. There were differences on a more detailed level (Table 2). Moderate emotional abuse in childhood was significantly more common in non-native Swedish-speakers ($p = 0.002$) compared to native Swedish-speakers. Moderate and severe physical abuse as a child was significantly more common among non-native Swedish-speakers, ($p = 0.024$). Sexual abuse as an adult was significantly more common among native Swedish-speakers ($p = 0.012$).

Non-native Swedish-speakers had a fivefold increased adjusted odds of symptoms of depression in association with emotional abuse and an almost fourfold increased adjusted

odds in association with physical abuse (Table 3). Native Swedish-speakers had twofold adjusted odds of symptoms of depression in association with emotional and sexual abuse (Table 3). All types of abuse were associated with increased odds of PTS for both native and non-native Swedish-speakers (Table 3). All types of abuse remained a significant predictor for symptoms of depression and posttraumatic stress after adjustment for age, ethnicity, financial distress, marital status and education (Table 4). Adding ethnicity to the multiple binary regression analyses did not really alter the association between the different types of abuse and symptoms of depression and of PTS. Being a non-native Swedish-speaker was an independent predictor for symptoms of depression but not for symptoms of PTS (Table 4).

Discussion

There were no statistically significant differences between natives and non-natives for the prevalence of lifetime emotional, physical and sexual abuse. However, on a more detailed level there were significant differences. Emotional and sexual abuse was significantly associated with symptoms of depression for both natives and non-natives alike. Physical abuse was significantly associated with symptoms of depression for non-natives only. All types of abuse were significantly associated with symptoms of PTS for both native and non-native Swedish-speakers. Adding ethnicity to the multiple binary regression analyses did not really alter the association between the different types of abuse and symptoms of depression and PTS.

There were differences in the prevalence of abuse when the categories were broken down for level of severity and age. Compared to native Swedish speakers, non-native Swedish-speakers were significantly more likely to report having experienced that someone systematically and by threat or force tried to limit their contact with others, or totally controlled what they could or could not do as a child. While this behavior, in our study defined as moderate emotional abuse, it may be viewed as part of appropriate parenting in certain cultures [24, 25]. In some cultures sexual expression is permitted only in the context of marriage [26]. In addition, the practice of familial arranged marriage may be traditional [27]. Parents may therefore attempt to restrict their daughter's freedom to ensure adherence to their own strict moral- religious- and cultural code.

Compared to non-natives significantly more native Swedish-speakers reported sexual abuse as an adult. Research shows that misinterpretation of cues, sexual attitudes and alcohol

consumption are associated with sexual violence [28, 29]. Sexual attitudes vary from a restricted (low sociosexuality) to an unrestricted willingness (high sociosexuality) to engage in uncommitted sexual relationship [23]. Cultural values (such as chastity or freedom of self-expression), traditions and institutions (marriage systems) influence the degree of sociosexuality in populations [30]. Higher sociosexuality together with alcohol consumption increases women's risk of sexual violence [28]. This could be a contributing factor in explaining the differences in prevalence observed in our study.

In contrast to native Swedish-speakers, more non-natives reported having experienced physical violence as a child. The practices and laws concerning corporal punishment of women and children have evolved over time but still vary greatly between countries [31, 32]. Physical discipline of children has been forbidden in Sweden since 1979. Our findings may be partly explained by legal and customary differences.

The city where this study was performed has a largely multi-ethnic population, varying between twelve to 60% in the ten municipal boroughs, representing 174 nationalities. Municipal data, of year 2008, showed that more than 30% of the childbearing women were born in a foreign country, with one third of Arabic origin [18]. This makes comparison with other studies difficult. However, a recent, larger cross-sectional study among pregnant women in southern Sweden also used the NorAQ [7]. They presented the prevalence of each of the types of abuse in their total sample and not by linguistic background. Their findings are strikingly similar to ours [7]. They furthermore report that women's mother tongue or country of origin was not significantly associated with the prevalence of abuse reported, when categorized as any lifetime abuse. This is in agreement with our findings, where the categories of lifetime abuse did not differ significantly between native and non-native Swedish-speakers.

The proportion of non-native Swedish-speakers reporting physical- and other violence in our study is much lower than what is reported by women in some of the countries of origin of our participants [1, 8, 33]. This suggests that violence decreases in immigrant families as they establish into a new country where there is less cultural and legal tolerance for violence. Alternatively, women do not disclose experienced violence as they become aware of the new country's norms.

A history of abuse was associated with depressive symptoms for both native and non-native Swedish-speakers for most types of abuse. Adding ethnicity to the multiple binary regression analyses did not really alter the association. This finding is in agreement with a recent large cross-sectional Canadian study, which found that violence is associated with depression and immigration has little influence on the association [15]. The same researchers investigated the prevalence and risk factors for antenatal depressive symptoms among Canadian-born and immigrant pregnant women in Quebec [13]. Similar to our study they found a significantly higher prevalence of antenatal depression among immigrant pregnant women compared to natives. Furthermore, they reported that immigrant women were significantly more exposed to adverse contextual risk factors such as high marital strain, lack of social support and poverty [13]. Our finding of more financial distress and more women not living with their partner among non-natives suggest a similar situation in our study.

We found a significant association between a history of abuse and posttraumatic stress symptoms. This is in agreement with research so far [34]. Non-native Swedish-speakers were more likely to report symptoms of PTS, but ethnicity was not an independent predictive factor for symptoms of PTS in the association between the different types of abuse and these symptoms. We do not know which traumatic event(s) caused the post-traumatic symptoms among our participants. Very likely, a number of the non-native Swedish-speakers originated from countries with high levels of conflict. An alternative explanation of the greater symptom-load in non-native Swedish speaking women could be a higher threshold for seeking psychiatric health care. This has been found among immigrants in an interview study of a similar population [35].

Our study has several strengths. Firstly, data was collected from women attending routine antenatal care and not at any specialized clinics. Secondly, data was collected prospectively with very few missing data. Finally, our study used validated instruments to measure both abuse and depression [5, 22]. In addition, the city where this study took place is unique in the Nordic setting as it has a greater proportion of immigrants than the national average of 19% foreign-born residents, 8% having one foreign-born parent, and 4% with two foreign-born parents [18]. A possible limitation of our study is that we used the term “mother tongue”, as other has done before us as a proxy variable for ethnicity, nationality, cultural background [7, 36]. Data of birth-country or nationality was not available. A certain level of misclassification can exist in women being grouped as non-native Swedish-speakers since they could have been

immigrant themselves or daughters of immigrants, i.e. second or third generation immigrants. Since the inclusion criterion was ability to read and speak Swedish it is fair to assume that the “non-native” women would have lived in Sweden for several years. Due to ethical considerations we were not allowed to register the non-participants. Another limitation is the use of a non-validated set of questions to measure PTS symptoms. However, several previous studies have been published using the exact three questions and coding we have used [12, 23]. We had no power-calculation for this particular study and failure to find significant associations could be due to lack of power. Finally, the cross-sectional design does not allow inferring causality.

In our study, all non-native speakers were grouped together in one heterogeneous group that was too small for the investigation of sub-groups. American research has shown that the rate of IPV and the associated health effects vary for different groups of ethnic minorities [16]. Knowing these differences would allow for more targeted care. In the light of this, there are several “large” minority groups in Sweden, which could benefit from further study. Further research is also needed to assess whether the care required by non-native speakers is the same as that for native speakers.

In conclusion, clinicians need to be aware that a history of abuse is common both among their native and non-native clients. There may be some differences as to the type, severity and timing of the abuse, i.e. as a child, adult or both. When caring for non-native women, antenatal care workers need to remember that while these women may face particular challenges due to being a non-native, they may share some of the same problems as native women, such as a history of abuse or ongoing violence. Midwives and obstetricians need to remember that symptoms of depression and PTS can be due to a history of violence for native and non-native speakers alike. Appropriate care for pregnant women with these symptoms includes enquiring about a history of violence.

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Table 1. Characteristics of the study sample, comparing native and non-native Swedish-speaking pregnant women in Southern Sweden (N=1003)

	All N = 1003 (%)	Native n = 788 %	Non-native n = 215 %	p-value ^a
Age in years				
< 25	112 (11.2)	8.4	21.4	0.001
25–29	321 (32.0)	31.5	34.0	
30–35	443 (43.2)	46.1	32.6	
> 35	137 (13.7)	14.1	12.1	
Education (n = 990)				
≤ 13 years	339 (34.2)	30.8	47.1	< 0.001
> 13 years	651 (65.8)	69.2	52.9	
Marital status				
Married or co-habiting	963 (96.0)	97.1	92.1	0.001
Not married or co-habiting	40 (4.0)	2.9	7.9	
Financial distress (n = 977)				
No	701 (69.9)	77.5	50.5	
Yes, some	186 (18.5)	16.4	28.8	
Yes	90 (9.0)	6.1	20.7	0.002
Symptoms of depression EDS-5 (n= 981)				
≥ 7 points	138 (13.8)	11.5	21.9	< 0.001
≥ 8 points	89 (9.1)	6.7	18.4	< 0.001
Symptoms of PTS				
No, PTS	883 (88.0)	89.6	82.3	
Yes, PTS	120 (12.0)	10.4	17.7	0.004

^a Comparing native and non-native Swedish-speaking women by Pearson Chi-square or Fisher's exact

Table 2. Prevalence and severity (mild, moderate or severe) of emotional, physical and sexual abuse, comparing native and non-native Swedish-speaking pregnant women in Southern Sweden (N=1003)

	All women N = 1003		Native n=788	Non-native n=215	<i>p</i> -value ^a
	n	%	%	%	
Emotional abuse					
<i>Mild</i> (n = 999)					
< 18 years	78	7.8	7.4	9.3	.346
≥ 18 years	74	7.4	7.7	6.0	.399
<i>Moderate</i> (n = 987)					
< 18 years	45	4.5	3.4	8.4	.002
≥ 18 years	51	5.1	4.8	6.0	.469
<i>Severe</i> (n = 966)					
< 18 years	41	4.1	3.4	6.5	.043
≥ 18 years	34	3.4	3.2	4.2	.467
Emotional abuse < 18 years	98	9.8	8.9	13.0	.070
Emotional abuse ≥ 18 years	98	9.8	9.6	10.2	.797
Recent emotional abuse ^b	21	2.1	2.0	2.3	.789
Lifetime emotional abuse ^c	159	15.9	15.2	18.1	.300
Physical abuse					
<i>Moderate</i> (n = 999)					
< 18 years	72	7.2	6.2	10.7	.024
≥ 18 years	74	7.4	7.4	7.4	.968
<i>Severe</i> (n = 998)					
< 18 years	22	2.2	1.6	4.2	.024
≥ 18 years	45	4.5	4.6	4.2	.810
Physical abuse < 18 years	79	7.9	6.9	11.6	.021
Physical abuse ≥ 18 years	91	9.1	9.3	8.4	.687
Recent physical abuse ^b	17	1.7	1.4	2.8	.160
Lifetime physical abuse ^d	142	14.2	14.0	14.9	.730
Sexual abuse					
<i>Mild</i> (n=997) ^e					
< 18 years	65	6.5	6.5	6.5	.983
≥ 18 years	52	5.2	6.1	1.9	.013
<i>Moderate</i> (n = 1000)					
< 18 years	69	6.9	7.0	6.5	.810
≥ 18 years	45	4.5	4.9	2.8	.175
<i>Severe</i> (n = 996)					
< 18 years	36	3.6	3.8	2.8	.478
≥ 18 years	41	4.1	4.7	1.9	.063
Sexual abuse < 18 years	97	9.7	9.8	9.3	.837
Sexual abuse ≥ 18 years	72	7.2	8.2	3.3	.012
Recent sexual abuse ^b	3	0.3	0.3	0.5	.515
Lifetime sexual abuse ^c	155	15.5	16.5	11.6	.080

^a Comparing

native and non-native Swedish-speaking women by Pearson Chi-square or Fisher's Exact

^b During the past 12 months

^c Grouped variable, any severity of the abuse at any age

^d Grouped variable, included only moderate or severe physical of abuse at any age

^e Grouped mild humiliation and mild without genital contact into one variable

Table 3 The crude and adjusted association between lifetime emotional, physical and sexual abuse and symptoms of depression and posttraumatic stress for native and non-native Swedish-speaking pregnant women in Southern Sweden (N=1003)

Symptoms of depression						
Lifetime	Crude OR All women (95% CI)	Crude OR Native (95% CI)	Crude OR Non-native (95% CI)	aOR ^a All women (95% CI)	aOR ^a Native (95% CI)	aOR ^a Non-native (95% CI)
Emotional abuse	3.06 (1.98–4.72)	2.56 (1.48–4.42)	4.40 (2.01–9.64)	2.61 (1.66–4.13)	1.92 (1.07–3.43)	5.09 (2.19–11.85)
Physical abuse	2.57 (1.61–4.10)	2.12 (1.18–3.81)	4.11(1.76–9.59)	2.00 (1.21–3.29)	1.55 (0.81–2.96)	3.94 (1.63–9.49)
Sexual abuse	2.41 (1.53–3.79)	2.67 (1.58–4.51)	2.20 (0.85–5.71)	2.01 (1.25–3.25)	1.97 (1.12–3.45)	2.91 (1.03–8.22)
Symptoms of posttraumatic stress						
Lifetime	Crude OR All women (95% CI)	Crude OR Native (95% CI)	Crude OR Non-native (95% CI)	aOR ^a All women (95% CI)	aOR ^a Native (95% CI)	aOR ^a Non-native (95% CI)
Emotional abuse	5.38 (3.42–8.48)	4.56 (2.64–7.89)	7.79 (3.32–18.25)	4.49 (2.77–7.38)	3.42 (1.88–6.24)	8.26 (3.30–20.71)
Physical abuse	5.73 (3.59–9.13)	4.41 (2.51–7.76)	11.42 (4.65–28.04)	4.58 (2.77–7.60)	2.96 (1.55–5.65)	12.14 (4.56–32.36)
Sexual abuse	4.74 (2.98–7.56)	4.90 (2.89–8.31)	4.74 (1.72–13.01)	3.95 (2.40–6.49)	3.74 (2.09–6.71)	3.69 (1.20–11.34)

^a Adjusted for increasing age in years, education, marital status and experiencing financial distress, comparison group for all analyses are women not reporting any abuse
CI = Confidence Intervals

Table 4. The crude and adjusted association between lifetime emotional, physical and sexual abuse and symptoms of depression and posttraumatic stress among pregnant women in Southern Sweden (N=1003)

	Symptoms of Depression			Posttraumatic stress symptoms		
	Crude OR (95% CI)	Adjusted ^a OR (95% CI)	Adjusted ^b OR (95% CI)	Crude OR (95% CI)	Adjusted ^a OR (95% CI)	Adjusted ^b OR (95% CI)
Any emotional abuse						
No	1	1	1	1	1	1
Yes	3.06 (2.00–4.72)	3.09 (1.98–4.83)	2.70 (1.71–4.27)	5.38 (3.42–8.48)	5.36 (3.38–8.48)	4.55 (2.81–7.38)
Swedish-speakers						
Native	1	1	1	1	1	1

Non-native	2.31 (1.56–3.42)	2.48 (1.59–3.86)	1.97 (1.24–3.14)	1.85 (1.22–2.81)	1.69 (1.02–2.79)	1.37 (0.81–2.32)
Financial distress						
No	1		1	1		1
Yes	3.95 (2.72–5.72)		2.52 (1.60–3.97)	3.09 (2.09–4.56)		2.10 (1.26–3.51)
Marital status						
Married/Cohabiting	1		1	1		1
Not married/Cohabiting	2.36 (1.12–4.99)		1.62 (0.67–3.87)	5.51 (2.83–10.70)		5.15 (2.28–11.61)
Education						
≤ 13 years	1.45 (1.01–2.12)		0.96 (0.60–1.54)	1.44 (0.97–2.14)		0.83 (0.48–1.41)
> 13 years	1		1	1		1
<hr/>						
Any physical abuse						
No	1	1	1	1	1	1
Yes	2.57 (1.62–4.10)	2.51 (1.55–4.05)	2.10 (1.27–3.47)	5.73 (3.59–9.13)	5.67 (3.53–9.11)	4.78 (2.88–7.95)
Swedish-speakers						
Native	1	1	1	1	1	1
Non-native	2.31 (1.56–3.42)	2.48 (1.57–3.93)	1.95 (1.20–3.17)	1.85 (1.22–2.81)	1.99 (1.20–3.31)	1.67 (0.96–2.89)
Financial distress						
No	1		1	1		1
Yes	3.95 (2.72–5.72)		2.23 (1.37–3.65)	3.09 (2.09–4.56)		1.69 (0.96–2.95)
Marital status						
Married/Cohabiting	1		1	1		1
Not married/Cohabiting	2.36 (1.12–4.99)		1.35 (0.55–3.30)	5.51 (2.83–10.70)		5.68 (2.57–12.57)
Education						
≤ 13 years	1.45 (1.01–2.12)		1.06 (0.66–1.73)	1.44 (0.97–2.14)		0.71 (0.40–1.24)
> 13 years	1		1	1		1
<hr/>						
Any Sexual abuse						
No	1	1	1	1	1	1
Yes	2.41 (1.53–3.79)	2.55 (1.61–4.05)	2.17 (1.34–3.52)	4.74 (2.98–7.56)	4.83 (3.02–7.75)	3.95 (2.39–6.53)
Swedish-speakers						
Native	1	1	1	1	1	1
Non-native	2.31 (1.56–3.42)	2.10 (1.32–3.61)	1.69 (1.03–2.77)	1.85 (1.22–2.81)	1.39 (0.81–2.40)	1.01 (0.56–1.82)
Financial distress						
No	1		1	1		1
Yes	3.95 (2.72–5.72)		2.67 (1.66–4.30)	3.09 (2.09–4.56)		2.31 (1.34–3.97)
Marital status						
Married/Cohabiting	1		1	1		1
Not married/Cohabiting	2.36 (1.12–4.99)		0.91 (0.32–2.60)	5.51 (2.83–10.70)		5.76 (2.46–13.51)
Education						
≤ 13 years	1.45 (1.01–2.12)		0.96 (0.59–1.55)	1.44 (0.97–2.14)		0.75 (0.43–1.30)

> 13 years	1	1	1	1
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^a Adjusted for age (as a continuous variable not shown), and native and non-native Swedish-speakers

^b Adjusted for age (as a continuous variable not shown), native and non-native Swedish-speakers, financial distress, marital status and education.

