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CROSS-CULTURAL DIFFERENCES IN PTSD SYMPTOMS TWO YEARS POST-CHILDBIRTH: A LONGITUDINAL STUDY OF BRITISH AND SAUDI MOTHER

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Abstract

Some women develop post-traumatic stress disorder (PTSD) following childbirth. To date, no studies have examined the prevalence rate of PTSD following childbirth among Saudi women. This study was aimed at estimating the prevalence of PTSD following childbirth and identifying the changing of symptoms of PTSD, depression, anxiety, throughout the post-childbirth period atup to twelve months (T1) and up to twenty-four months (T2) in Saudi and UK. A total of 532 (408 Saudi and 124 British) new mothers were recruited online and from clinics in Saudi and UK (T1). Only 55 (28 Saudi and 27 British) mother participated in (T2), who were recruitedfrom (T1) sample. The participants completed the Post Traumatic StressDiagnostic Scale (PDS) and the Hospital Anxiety and Depression Scale (HADS) when they were between 12 and 24 months post-partum. A total of 14.7% women displayed symptoms that met the clinical criteria for diagnosis of PTSD following childbirth (14.7% of the Saudi sample and 14.5% of the British sample). However, the Saudi women scored significantly higher on anxiety and depression as well as the symptoms of PTSD than the British women. Within the first year following childbirth, women experienced greater levels of anxiety in contrast to the second year. Saudi women were likely to be more anxious and depressed experiencing more PTSD symptoms two years after birth than British women. The findings of this study will aid in the development of a treatment strategy for new mothers who experience poor mental health following childbirth.

Keywords

PTSD, Postpartum, Childbirth, Saudi Women, British Women

Introduction

Childbirth is understood as a normative event in women's lives. Giving birth is a time that involves significant psychological and neural-hormonal changes that may present challenges to a woman that require substantial adjustment (Ayers and Ford, 2009). Kranenburg et al. (2023) agreed that a traumatic process during labour or the delivery process, might act asa trigger for PTSD.

Moreover, it is an important risk factor in the development of mental health issues (Apter et al., 2011). Between 6.5% and 12.8% of women experience symptoms of depression (Gavin et al., 2005), while 13% to 16.3% encounter symptoms of anxiety after childbirth (Wenzel et al., 2005).

Studies have reported 24-34% of women showing some symptoms of PTSDfollowing childbirth in Europe and Australia, whilst others have found that 2.8–5.6% of women in the UK develop clinically diagnosable PTSD following childbirth (Olde et al., 2006; Nyberg et al., 2010).

It is important to have a clear understanding of the existence of PTSD following childbirth and its prevalence in different cultures, such as Saudi Arabia.

Within Saudi culture, the family is considered to be the essential foundation of an individual's ranking and personhood.This gives childbirth a significant priority and importance with cultural principles.

Many studies have investigated changes in symptoms during the perinatal period (Onoye et al., 2013), however, few have examined the longitudinal changes in mental healthissues in the twenty-four months following childbirth (Glynn et al., 2008; van Bussel et al., 2009). That is, some studies have shown PTSD symptoms to reduce

between 48 hours and nine months postpartum (Denis et al., 2011), with others indicating theconverse

The co-occurrence of depression and anxiety suggests that women suffering from depressive symptoms followingchildbirth also being likely to experience clinically significant symptoms of anxiety (Radoš et al., 2018).

Hence, this study was conduct with the aim of fill the knowledge gap by comparing two contrasting cultures (Saudi Arabia and Britain) in terms of the prevalence of PTSD symptoms in new mothers following childbirth up to twelve months (T1) and up to twenty-four months (T2). Also, it is aimed to explore the changes in PTSD scores, anxiety and depression symptoms up to 2 years following childbirth

Method

Procedure and Participants

The study recruited new mothers from diverse backgrounds in the UK and Saudi Arabia, targeting those who had given birth within the past year, irrespective of their childbirth or postpartum experiences. Ethical approval was obtained from the University of Birmingham ERN_13-0931C, and all participation was voluntary. There were two versions of the survey: one in English and the other in Arabic. Both online and paper submissions were used without significant differences between the methods, ensuring inclusivity across preferences. In total, 532 women were participated (124 from the UK and 408 from Saudi Arabia). For a follow-up study, from the original sample 55 women (28 Saudi and 27 British) completed follow-up measures. Secure data management practices ensured the confidentiality of participants' information throughout the process. This multifaceted recruitment approach allowed for a socioeconomically and ethnically diverse participant group, enhancing the study's comprehensiveness and cultural relevance.

Measures

Participants completed the PosttraumaticStress Diagnostic Scale (PDS: Foa, 1995) and The Hospital Anxiety and Depression Scale (HADS: Zigmond and Snaith,1983).

Statistical analysis

SPSS version 30 statistical software was used to analyse the data. Initially, the prevalence of women who reached PTSD criteria was calculated by percentage and frequencies, and the prevalence of women who reached PTSD criteria at T1 and T2 was calculated by cross tabulation. Also, Mann-Whitney testing was used to examine group differences in the continuous variables.

Results

The proportion of women who met the PTSD criteria following childbirth in the Saudiand British samples

14.7% of the whole sample (N= 78/532) displayed symptoms that met the clinical criteria for a diagnosis of PTSD following childbirth. Moreover, 14.7% of the Saudi sample (N=60/408) displayed PTSD following childbirth, whilst 14.5% of the British sample(N=18/124) did so. The results of Pearson's chi-squared tests indicate that there were no significant differences in the proportion of women satisfying the criteria for PTSD followingchildbirth between the British and Saudi sample (**Table 1**).

Table 1 *Chi squared test to compare the proportion of women displaying PTSD symptoms following childbirth between the British and Saudi samples*

PTSD	The percentage within the country group	
	Saudi (n=408).	British (n=124)
Criteria not met	348 (85.3%)	106 (85.5%)
Criteria met	60 (14.7%)	18 (14.5%)

Note. χ^2=.958, df=1. p=1.00

The differences in reports of PTSD symptoms, depression and anxiety symptomsfollowing childbirth in the two cultures

The results of the Mann-Whitney tests indicate that Saudi women reported more PTSD,anxiety and depression symptoms than the British sample (**Table 2**).

Table 2 Mann-Whitney tests to compare the Saudi and British samples for the PDS and HADS

Variables	Saudi		British			
	N	Mdn	N	Mdn	U	P
Ages in years	299	26	107	31	23.41	<.0001
(PDS) – Intrusion Symptoms	408	2.5	124	1	19900	<.0001
(PDS) - Avoidance	408	4	124	2	20977	0.003
(PDS) - Hyper arousal	408	4	124	2	21423	0.009
(PDS) - Duration	408	3	124	4	19643	<.0001
(PDS) - Functional	408	3	124	1	19393	<.0001
(PDS) – Total	408	19	124	11	20706	0.002
(HADS) _ Anxiety	380	11	102	7	8355.5	<.0001
(HADS) _ Depression	379	12	102	5	3938	<.0001
(HADS) _ Total	380	23	102	12	5111	<.001

*Note. N=Sample size. Mdn=Median. U=Mann-Whitney. p=p-values,(PDS) The Posttraumatic Stress Diagnostic Scale. (HADS) The Hospital Anxiety and DepressionScale.

Significant changes between the scores of PTSD, anxiety and depression following childbirth at T1 and T2.
The women reported higher anxiety following childbirth (Mdn= 11.00) than they had two yearsfollowing childbirth (Mdn=8.00) in both samples. However, there were no significant changes in the depression and PTSD symptoms that women had from T1 to T2 (**Table 3**).

Table 3 Wilcoxon test to compare T1 and T2 in anxiety, depression and PTSD

V	Sampl e	T	Mdn	SD	N	Mean Rank	Rank s	Ties	Total	Z	p
Anxiety	Whole sample	T1	11	4.31	43	25.07	1078	6	55	-4.64	<.001
		T2	13	2.43	23	13.28	305.5				
	Saudi	T1	7	3.93	20	12.25	245	3	28	-3.85	<.001
		T2	8	3.67	6	24.5	147				
	British	T1	10	1.95	2	9.75	19.5	3	27	-2.72	0.01
		T2	6	3.97	4	13.75	55				
Depression	Whole sample	T1	8	4.61	28	26.96	755	7	55	-1.72	0.09
		T2	12.5	.3.35	14	14.7	197				
	Saudi	T1	5	2.25	14	12.79	179	5	28	-1.8	0.07
		T2	8	4.81	20	21.05	421				
	British	T1	12	4.19	9	8.78	79	2	27	-0.45	0.66
		T2	5	3.95	11	13.27	146				
PTSD Symptoms	Whole sample	T1	12	10.34	26	22.35	581	5	55	-0.55	0.59
		T2	15.5	9.754	9	10.94	98.5				
	Saudi	T1	10	11.03	17	12.5	212.5	4	28	1.74	0.14
		T2	13	10.88	24	28.92	694				
	British	T1	22	11.35	15	13.43	201.5	1	27	-0.94	0.35
		T2	11	9.54	9	15.39	138.5				

Note. T1=up to 12 month following birth. T2=up to 24 months following birth. Mdn=Median. SD=Standard deviation. N=Rank. *Z*=Wilcoxon signed-ranks. *p*=p-values

The correlation between PTSD score following childbirth at T1 and depression oranxiety at T2There were significant relationships between the PTSD score at T1 and depression atT2 in the whole sample, in the Saudi sample, but not in the British one (see Table 4).

Table. 4 Spearman's Correlations between PTSD scores T1 and PTSD, Anxiety and Depression scores at T2 in subgroups split by country

		PTSD	Anxiety	Depression
		T2	T2	T2
PTSDT1	Saudi	-0.067	-0.131	.502**
	British	0.229	0.307	0.148

*Note **p<.01 Saudi N=28. British N=27. PTSD T1=PTSD score following birth. PTSD T2, Anxiety T2, Depression T2 = their score after two year.

Differences between Saudi and British sample in the scores of PTSD, anxiety and depression at T2

There were differences between British and Saudi samples in PTSD, anxiety, and depression, at T2 (**Table 5**). The Saudi sample were more anxious and depressed, whilst also exhibiting higher PTSD symptoms two years after birth.

Table 5

Mann-Whitney test to compare the Saudi and British samples for PTSD, Anxiety,and Depressionat T2

Variables	Saudi		British			
	N	Mdn	N	Mdn	U	P
PTSD	28	15.00	27	10.00	260.00	.047
Anxiety	28	10.00	27	6.00	132.00	<.0001
Depression	28	12.00	27	5.00	134.000	<.0001

Note. N=Sample size. Mdn=Median. *U*=Mann-Whitney. *p*=p-values. T2=up to 24 monthsfollowing birth

Discussion

Whilst the results indicated a similar rate and no differences in potentially diagnosable PTSD following childbirth between these two cultures, on average, Saudi women had more PTSD symptoms than the British ones.

Whilst the reported rate of 14.7% is high, this is in keeping with some other studies' findings, such as one in Australia (Boorman et al., 2014), which found that the percentage of women who experienced traumatic childbirth was 14.3% and Iranian research, which elicited that 17.2% of women had symptoms of PTSD following childbirth based on the PTSD Symptom Scale (PSS: Foa et al., 1993) (Shaban et al., 2013). Al-Saffar et al. (2003) studied four ethnic groups in outpatient psychiatry, who had immigrated to Sweden at least four years prior to the study, they found that therate of PTSD in the Iranian sample was 69%, Arabs 59%, Turkish 53% and Swedes 29%. This result suggests that non-Western countries have a higher PTSD rate than Western, given that the Swedes were found to have a low risk. One reason for the high rate in this study is that self-report tools, as used in the study, generally yield a higher frequency of different disorders than those based on interviews, but they are not necessarily inaccurate (Bowling, 2005).

As mentioned above, there was no difference in the percentage of Saudi and British women who satisfied the PTSD criteria. Nonetheless, there were differences in the PTSD symptoms between them based on the PDS (Foa, 1995) scores. Consequently, the increase in PTSD symptoms in the Saudi group may be because of a higher rate of other disorder symptoms (anxiety, depression) that are common in the postnatal period (Alsulami et al., 2024). Also, this is supported by Al-Modayfer et al. (2015), who found that 14% of Saudi women developed postpartum depression (PPD), while Gavin et al. (2005) elicited that the prevalence of PPD among British women is 11.0%. So, the women therefore endorse more of the symptoms of PTSD as an overlap with the postnatal depression symptoms.

The results of exploring changes in PTSD symptoms between the first year and second year following childbirth within a sample of new mothers revealed that 9.1% of 55 women (n=55) in the current study met the criteria for PTSD up to two years post-partum, while 10.9% of this sample did so at T1 (first year) and it would indicate that PTSD decreases slightly in frequency within two years of birth. The Wilcoxon test results indicated that there was no significant change overall between T1 and T2 in PTSD symptoms, which suggests that the mothers' PTSD symptoms remained stable over the two-year postpartum.

The current study findings have also confirmed that the first year following childbirthis a more anxious period for mothers in contrast to the second year and yet, their depressionsymptoms remain generally stable over the same period. Moreover, mothers with PTSD at T1have a greater probability of experiencing symptoms of depression, but not anxiety at twoyears postpartum. This outcome is in line with findings from other studies **(e.g.**

Cerulli et al., 2011; Smith et al. 2006).

The results indicate that Saudi women, in contrast to British women, experience greater anxiety, depression, and PTSD symptoms after two years postpartum, which is reflected at T1 too.

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