



THE ROLE OF ADULT ATTACHMENT STYLE IN THE DEVELOPMENT OF PTSD FOLLOWING CHILDBIRTH AND ITS RELATIONSHIP WITH BONDING

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Abstract

This study aims to examine the correlations between adult attachment styles, PTSD following childbirth, and bonding, in Saudi and British cultures. A total of 532 (408 Saudi and 124 British) new mothers were recruited online and from clinics. These mothers completed the Revised Adult Attachment Scale (RAAS), Posttraumatic Stress Diagnostic Scale (PDS) and Maternal Postnatal Attachment Scale (MPAS) at 1–12 months post-partum (mean = 9.5 months). Spearman's Correlations reveal that insecure attachment (high attachment anxiety, low closeness and low dependence scores) is related to PTSD symptoms following childbirth. Women who experience these PTSD symptoms have a poorer quality of bonding with their babies. In terms of mother-infant bonding, lower absence of hostility and poorer quality of attachment, are associated with experiencing PTSD symptoms following birth. These results emerged in both the Saudi and British samples. These findings have clinical implications that support the need for improved prenatal screening for attachment style in order to tailor the birth experience accordingly and thus, promote mother- infant bonding.

Keywords

Attachment style, PTSD, RAAS, MPAS

Introduction

One of the difficulties that mothers may face is Post Traumatic Stress Disorder (PTSD) following childbirth. Research has revealed that 1% to 7% of mothers experience it following childbirth and a greater proportion of them report having symptoms of PTSD, but fail to meet all the PTSD criteria (Kjerulff et al., 2021). Evidence suggests that a secure attachment style has a protective impact, while insecure attachment styles are possible vulnerabilities for subsequent mental health difficulties (Ogle et al., 2015; MacKinnon et al., 2018). Evidence suggests that individual differences in attachment style might explain why some individuals experience traumatic reactions after facing a traumatic event (Eilert and Buchheim, 2023).

An individual may develop insecure attachment, which can be conceptualised in terms of two major dimensions: anxiety and avoidance. Attachment-related anxiety pertains to an individual's degree of worry that attachment figures will not be available or will not be supportive in times of need. Attachment-related avoidance refers to the extent to which an individual may distrust a partner's goodwill for support, thus resulting in subsequent withdrawal and maintenance of emotional distance and behavioral independence (Gormley and McNiel, 2010).

Armour et al. (2011) explained how attachment style correlated with the perception of traumatic events within different groups. Insecure attachment may be considered a risk factor for later traumatic problems. Cushing et al. (2024) revealed that secure attachment style in a young adult population correlated negatively with PTSD symptoms after different traumatic events. In a sample of 544 Belgian security officers employed by the Red Cross, found that employees with a secure attachment style were not as vulnerable to developing PTSD after facing a traumatic event as those who had an insecure attachment style (Declercq and Palmans, 2006).

According to Mikulincer et al. (2006), the attachment system's function within the traumatic and post-traumatic processes can be explained through a number of mechanisms. The distressing situation triggers the operation of the attachment system and throughout the traumatic event, attachment figures can assist the victims in regulating their emotions that they need to stop the triggering of PTSD symptoms. The individual's inability to

address the traumatic situation causes feelings of helplessness, insecurity, loneliness, and abandonment as trauma can shatter the feeling of individual security and his/her trust in attachment figures.

Additionally, anxiously attached individuals have a greater probability of experiencing post-traumatic intrusion symptoms, whereas avoidantly attached individuals have a greater likelihood of experiencing post-traumatic avoidance symptoms. Also, security providing attachment figures that offer safeguarding throughout the period following a traumatic event can assist individuals in addressing emotional issues so as to be able to regain their wellbeing (Mikulincer et al., 2006).

Attachment style is important both in adjustment following a traumatic birthing experience and for its impact on the mother-infant bond. There is increasing evidence of an association between the mother's childhood experience and her baby bonding (Karakaş and Dağlı, 2019). Parents who were classified as having a secure-autonomous attachment pattern were more likely to have children who developed a secure attachment pattern. Conversely, parents who did not receive emotional support and who were detached or rejected by their parents were more likely to have children with insecure attachment styles (Tabachnick et al., 2022).

Following the birth, the postnatal phase plays an important role in developing a good relationship (bonding) between the mother and her baby (Stoodley et al., 2023). According to the WHO (2013), mental health issues, such as PTSD during this period, can have a substantial effect on maternal-infant bonding, which as a result, can have a long term impact on the child's progress. Stoodley et al. (2023) explained that one of the potential causes of a bonding disorder is women's emotions and perspectives on the birthing situation. A 'good birthing experience', according to Takehara et al. (2009), can be correlated with good bonding and decreased parental tension and anxiety. A traumatic birth is one of the negative birthing experiences that can affect mother-infant bonding (Frankham et al., 2023).

There is notable evidence that suggests that culture plays a role in the development of relationships, whereby it determines the norms, customs, assumptions and regulations that control the connections between individuals, including their attachment style (Strand et al., 2019).

The correlation between the three factors; mother's attachment style, a traumatic birth, and mother-infant bonding, have not been examined yet. Previous research has examined the association between mother's attachment style and infant bonding (Karakaş and Dağlı, 2019), but not with the effect of having symptoms of PTSD following childbirth. Additionally, the results from different studies regarding which attachment style is linked with PTSD, are varied (Iles et al., 2011).

Hence, the current study aims to investigate the association between three adult attachment dimensions (closeness, dependence, and attachment anxiety), PTSD following childbirth, and mother-infant bonding within two cultures: British and Saudi.

Method

Procedure

Ethical approval was secured from the University of Birmingham (ERN_13-0931C), and participation was entirely voluntary. A secure communication protocol was used for the online questionnaire, and the collected data were managed by the University of Birmingham's secure server for anonymous online submissions. There were two versions of the survey: one in English and the other in Arabic.

Participants

The study involved recruiting new mothers from various backgrounds in both the UK and Saudi Arabia, focusing on those who had given birth within the previous year, regardless of their childbirth or postpartum experiences. The sample was containing 532 participants (408 Saudi and 124 British) new mums recruited online and from clinics in Saudi Arabia.

Measures

Participants completed the Posttraumatic Stress Diagnostic Scale (PDS: Foa, 1995), the Revised Adult Attachment Scale (RAAS: Collins and Read, 1996) and the Maternal Postnatal Attachment Scale (MPAS: Condon and Corkindale, 1998).

PDS Scale

The Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995) is a 49 item measure that produces a clinical diagnosis of PTSD, as well as a symptom score. It used with women following traumatic childbirth (Harris & Ayers, 2012; Ford & Ayers, 2011; Alcorn et al., 2010). It has six subscales: re-experiencing symptoms (1-5); avoidance symptoms (6-12); symptoms of hyper arousal (13-17); duration (18-19); and significant impairment in functioning (20-28). The response choices include: 'Not at all or only one time' (0); 'Once a week or less/once in a while' (1); '2 to 4 times a week/half the time' (2); and '5 or more times a week/almost always' (3). The scale concludes by

evaluating the degree to which PTSD impacted on various aspects of the individuals' daily routines.

RAAS Scale

The Revised Adult Attachment Scale (RAAS; Collins, 1996) is an 18 item self-report scale that requests individuals to rate statements regarding their daily operations, relationships, and overall associations with a partner, someone close, and people, in general, on the five-point Likert scale ranging from not at all (1) to very characteristic (5). This scale has three subscales of closeness (1-6-8-12-13-17), dependence (2-5-7-14- 16-18), and anxiety (3-4-9-10-11-15) that include six items each. The scores are generated by summing the item responses for each sub-scale. Cronbach's alpha coefficients have previously been reported of .69 for closeness, .75 for dependence, and .72 for anxiety, thus indicating a reliable measure (Collins &Read, 1990).

MPAS Scale

The Maternal Postnatal Attachment Scale (MPAS; Condon & Corkindale, 1998). This scale comprises 19 questions that categorised into three subscales: quality of attachment; absence of hostility; and pleasure in interaction (Condon et al., 1989).

Statistical analysis

SPSS version 30.0.0 statistical software was used to analyse the data. Initially, Spearman's correlation analyses were run looking at the relationship between women's attachment style (closeness, dependence, and attachment anxiety) and PTSD symptoms following childbirth; PTSD symptoms and mother-infant bonding (absence of hostility, quality of attachment, and pleasure in interaction); and, a mother's attachment style and her experience of child bonding. These analyses were carried out for Saudi and British groups separately. Also, to reduce the risk of a type 1 error, the accepted level of significance was reduced to $p < 0.01$ instead of performing Bonferroni corrections as it is too conservative in this instance.

Results

Descriptive statistics

There were significant differences in the mother-baby bonding scores and the closeness attachment dimension between the Saudi and British samples. (Table 1). Table 2 shows the means and standard deviations of the participants' scores on PDS Scale (Foa, 1995), RAAS Scale (Collins and Read, 1996) and MPAS Scale (Condon and Corkindale, 1998).

Table 1 Mann-Whitney to compare the Saudi and British samples for PDS, RAAS and MPAS

Variables	Saudi		British		U	p
	N	Mdn	N	Mdn		
(RAAS) - Attachment Anxiety	408	2.50	124	2.33	22656.5	.078
(RAAS) - Closeness	408	3.00	124	3.75	15634.5	<.0001
(RAAS) - Dependence	408	3.00	124	3.17	22778.5	.092
(MPAS) - Absence of hostility	343	14.00	100	15.00	12965.5	<.0001
(MPAS) - Quality of attachment	344	29.00	100	34.00	4455.5	<.0001
(MPAS) - Pleasure in interaction	341	13.00	100	15.00	9482.5	<.0001

Note. N=Sample size. Mdn=Median. U=Mann-Whitney. p=p-values. (PDS) The Posttraumatic Stress Diagnostic Scale; (RAAS) The Revised Adult Attachment Scale; (MPAS) The Maternal Postnatal Attachment Scale

Table 2 Mean and SD of the scale scores (PDS, RAAS, MPAS)

Variables	Saudi			British		
	N	Mean	SD	N	Mean	SD
PDS	408	19.74	13.114	124	15.59	11.512
(RAAS) - Attachment Anxiety	408	2.54	.938	124	2.39	1.134
(RAAS) - Closeness	408	3.13	.741	124	3.67	.809
(RAAS) - Dependence	408	3.03	.619	124	3.21	.898
MPAS	344	55.99	6.114	100	63.30	6.716

Note. N=Sample size. SD=Standard deviation. (PDS) The Posttraumatic Stress Diagnostic Scale; (MPAS) The Maternal Postnatal Attachment Scale; (RAAS) The Revised Adult Attachment Scale

The relationship between women's attachment style and their experience of PTSD symptoms following childbirth.
Across the overall sample and also when split in Saudi and British groups, higher scores on attachment

anxiety were associated with higher PTSD scores (Table 3).

Table 3 Spearman's Correlations between PTSD scores and the attachment subscales in the overall sample, and subgroups split by country

		Attachment anxiety	Closeness	Dependence
PTSD	Overall	.191**	-.125**	-.159**
	Saudi	.117**	-.078	-.129**
	British	.383**	-.279**	-.247**

*Note **p<.01. Overall N=532. Saudi N=408. British N=124. The accepted level of significance is p<.01

The experience of PTSD symptoms related to mother-infant bonding.

Across the overall sample and when split in Saudi and British groups, higher scores on PTSD were associated with lower scores on bonding (Table 4).

Table 4 Spearman's correlations between PTSD scores and the bonding subscales in the overall sample, and subgroups split by country

		Absence of hostility	Quality of attachment	Pleasure in interaction
PTSD	Overall	-.132**	-.106*	-.052
	Saudi	-.096**	-.072	-.024
	British	-.217**	-.282**	-.061

*Note **p<.01, *p<.05, Overall N=444. Saudi N=344. British N=100. The accepted level of significance is p<.01

Correlations between a mother's attachment style and her experience of mother-child bonding.

There were significant relationships between the mother's attachment style and her experience of mother-child bonding (Table 5).

Table 5 Spearman's correlation coefficients between the mother's attachment style and her experience of mother-child bonding in the overall sample, and subgroups split by country

Scales	Sample	Absence of hostility	Quality of attachment	Pleasure in interaction
Attachment anxiety	Overall	-.178**	-.281**	-.184**
Closeness		.132**	.395**	.258**
Dependence		.159**	.151**	.106*
Attachment anxiety	Saudi	-.080	-.230**	-.141**
Closeness		.037	.262**	.151**
Dependence		.063	.066	.058
Attachment anxiety	British	-.443**	-.360**	-.129
Closeness		.208*	.222*	.089
Dependence		.393**	.255*	.072

*Note **p<.01, *p<.05, Overall N=444. Saudi N=344. British N=100. The accepted level of significance is p<.01

Discussion

The results show that there is a correlation between attachment style, mother-baby bonding and PTSD following childbirth in the two focal cultures (Saudi and British). Women who reported more insecure attachment in their relationships, were more likely to report PTSD symptoms following childbirth. Also, those who experienced more symptoms of PTSD following childbirth had poorer quality of bonding with their babies.

This study's results support previous studies that point to a relationship between attachment styles and PTSD in different types of traumas, such as war (Besser and Neria, 2010); polio, traffic and accident victims (Armour et al., 2011); and political prisoners (Willis et al., 2015). Ayers et al.'s (2014) study reported how avoidant attachment was significantly correlated with PTSD following childbirth, which is consistent with this study's finding that PTSD symptoms are negatively correlated with closeness and dependence.

When the data were separated into countries, Saudi and British, the results indicated that within the former

sample, there was no correlation between closeness and PTSD following childbirth, whereas one was found within the British and overall sample.

These results can be interpreted by considering the cultural aspect of individualistic versus collectivistic. In individualistic cultures, people prioritize independence and personal achievement, interacting with others as distinct individuals. Conversely, collectivistic cultures emphasize group relationships, with individuals defining themselves through their social connections (Saad et al., 2015). The United Kingdom, as an individualistic society, focuses more on personal accomplishments (Wenxin and Yue, 2022), while Saudi Arabia, a collectivistic culture, values group harmony. For Saudi women, self-worth is often tied to their ability to maintain positive relationships with others. This cultural trait may explain why Saudi women, despite experiencing personal distress, prioritize social closeness, which could account for the lack of correlation between attachment closeness and PTSD following childbirth.

Furthermore, the results have revealed that higher scores of PTSD are associated with lower bonding scores. This is in line with previous studies that found that the mother–baby bond was seriously affected by a traumatic birth, especially in regards to symptoms of PTSD, such as increased arousal, which could lead to a woman becoming more irritable, critical, and anxious with her child and/or reporting initial feelings of rejection towards the baby (Forcade-Guex et al., 2011; and Muzik et al., 2013).

Moreover, the pleasure in interactions sub-scale was not related to PTSD symptoms in any subgroup. This refers to showing pleasure from interacting with the baby and liking spending time with him/her. This result is contrary to expectations. In order to ensure that this study's data analysis is correct, the mean scores of the MPAS subscales were compared to those reported in Condon and Corkindale's (1998) study, which involved using the same three MPAS subscales, no notable difference was identified between these means, thus suggesting that the study populations were representative.

It is considered that the absence of correlation between pleasure in interaction and PTSD may be a result of the inevitable interaction between mother and her baby, particularly in the first 12 months, regardless of the mental health of the mother. Also, the study considered how social desirability could influence new mothers as the MPAS "pleasure in interaction" subscale contains questions requesting the mother to report her feelings toward her baby in the presence of others like: "When I am with the baby and other people are present I feel proud of the baby" and "I find myself talking to people (other than my partner) about the baby".

Overall, this study has provided some interesting findings. New mothers who have high attachment anxiety, low closeness and low dependence are more likely to have PTSD symptoms following childbirth than those not experiencing these conditions. Whilst these results appeared in the two different cultures, Saudi Arabian and British, there were differences in their pattern within each. This indicates the strength of influence that culture has on attachment style and mother-infant bonding, thus highlighting the need for further research.

Whilst the results of this study are correlation based and thus, cannot assess causation, they are consistent with the following proposed model for the interaction between attachment, bonding, and PTSD. It is plausible that women with high attachment anxiety, low closeness and low dependence perceive themselves and others in relationships negatively, which may lead to poorer perceptions of their parenthood and bonding with their child. When women also experience PTSD symptoms in this context, the child may become a trigger for flashbacks, as he/she is a symbol of the pain and fear of the traumatic birth itself.

It is considered that this study provides a good basis for understanding the way in which post-partum PTSD and attachment style are correlated, particularly in Saudi Arabia, as well as presenting a platform for cross-cultural understanding.

Strengths and limitations

Previous studies have not explored the correlation between attachment style, PTSD following childbirth and the mother-baby bond. Hence, this is the first to do so along with regards to examining these relationships in both Saudi and British cultures. However, there are a number of limitations. The study was dependent on a self-report

evaluation of a mother's attachment dimensions and her bonding with her infant, which could have led to the results being influenced by socially desirable responses. In addition, future studies might take into account assessing a woman's romantic attachment or attachment with a partner, which might have an impact on the development of PTSD following childbirth.

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