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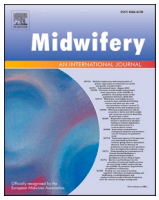

History of mental health problems moderates the association between partner support during childbirth and women's mental health in the postpartum period

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ABSTRACT

Background: Partner support during childbirth is an important protective factor for women's perinatal mental health. However, its protective role in women experiencing vulnerabilities is largely unknown, namely in those with history of mental health problems.
Aim: This study analysed (1) the association between partner support during childbirth and depressive, anxiety, and childbirth-related post-traumatic stress disorder symptoms in the postpartum period; and (2) the moderating role of previous diagnosis of mental health problems in those associations.
Design: Cross-sectional study with 284 women.
Methods: At 2 months postpartum, participants reported on sociodemographic, obstetric, and mental health-related data, partner support during childbirth, and depressive (Edinburgh Postnatal Depression Scale), anxiety (State Anxiety Inventory), and childbirth-related post-traumatic stress disorder (City Birth Trauma Scale) symptoms.
Findings: More partner support during childbirth was associated with lower depressive, anxiety, and childbirth-related post-traumatic stress disorder symptoms. Previous diagnosis of mental health problems was associated with higher depressive, anxiety, and childbirth-related post-traumatic stress disorder symptoms and moderated the association between partner support during childbirth and depressive and anxiety symptoms. Higher partner support during childbirth was associated with lower depressive and anxiety symptoms, only in women without a previous diagnosis of mental health problems.
Discussion: Findings suggest that partner support during childbirth can be a protective factor for women's postpartum mental health, particularly for women without a previous diagnosis of mental health problems. However, for those with a previous diagnosis of mental health problems, this support was not associated with symptoms.
Conclusion: Women with a history of mental health problems may require additional support beyond that provided by their partners to prevent or mitigate postpartum mental health problems.

Statement of significance

Problem or issue	The protective role of partner support during childbirth in is largely unknown, namely in those with history of mental health problems.
What is already known	Partner support is an important protective factor for women's perinatal mental health.
What this paper adds	1 - Partner support during childbirth was associated with lower depressive, anxiety, and childbirth-related post-traumatic stress disorder symptoms. 2 - Previous diagnosis of mental health problems were associated with higher depressive, anxiety, and childbirth-related post-traumatic stress disorder symptoms.

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	3 - Partner support during childbirth was associated with lower depressive and anxiety symptoms, only in women without a previous diagnosis of mental health problems.

Introduction

Perinatal MH problems are a relevant public health issue (WHO, 2022). Depression, anxiety, and childbirth-related post-traumatic stress disorder (CB-PTSD) are some of the most prevalent MH problems during the postpartum period. Depression is a MH problem that affects 10–30% of women within the first year postpartum (WHO, 2019), while anxiety affects 15 - 35% (Fawcett et al., 2019) and CB-PTSD affects between 0.8 to 6.9% of postpartum women (Yildiz et al., 2017). Untreated depression, anxiety, or CB-PTSD can have negative consequences for women's health and well-being, parenting, and the child's development (Goodman et al., 2011; Seng et al., 2013; Prenoveau et al., 2017; Garthus-Niegel et al., 2018). Evidence suggests that the aetiology of these MH problems may be different. While postpartum depressive and anxiety symptoms can be related with several factors, CB-PTSD is linked to traumatic birth experiences (Chan et al., 2020). Despite the distinct aetiology, research indicates a high comorbidity between postpartum depression, anxiety and CB-PTSD (Dekel et al., 2020; Dikmen-Yildiz et al., 2017; Malaju et al., 2022).

According to the diathesis-stress model applied to the aetiology of CB-PTSD (Ayers et al., 2016), the development of perinatal MH problems can result from the interaction between risk factors in birth (i.e., lack of support in childbirth), individual vulnerability factors (i.e., history of MH problems), and postnatal factors (i.e., depressive and anxiety symptoms). Several studies have emphasized the importance of emotional and practical support from partners during childbirth on women's perinatal MH (Czarnocka and Slade, 2000; Martinez-Vázquez et al., 2021). Partners can provide emotional and instrumental support, act as advocates for the women's wishes and preferences, and help the women feel safe and in control during childbirth (Beake et al., 2018;). These may lead to positive birth experiences and higher maternal MH, such as lower depressive, anxiety, and traumatic symptoms (Sapkota et al., 2013; Martinez-Vázquez et al., 2021; Lin et al., 2022; Hoffmann et al., 2023). Contrarily, lower partner support was associated with negative or traumatic perceptions of childbirth, a lack of control during the birth process, and feelings of low self-efficacy (Sapkota et al., 2013; Schwartz et al., 2015; Bell et al., 2016). Furthermore, low partner support was associated with higher postpartum depressive, anxiety, and CB-PTSD symptoms (Andersen et al., 2012; Ayers et al., 2016; Czarnocka and Slade, 2000; Lin et al., 2022). However, the role of partner support during childbirth in the perinatal MH of women with a history of MH problems is still largely unknown.

History of MH problems is a critical predictor of postpartum MH problems. The association between a history of MH problems and postpartum MH problems is well-documented, with studies indicating that previous MH challenges significantly increase the risk of postpartum depression, anxiety, and CB-PTSD (Chan et al., 2020; Johansen et al., 2020; Gheorghe et al., 2021). However, there is no data available on the role of history of MH problems in the association between partner support during childbirth and postpartum MH outcomes. According to the diathesis-stress model applied to the aetiology of CB-PTSD (Ayers et al., 2016), the lack of partner support during childbirth can be a risk factor for the emergence of MH problems during the postpartum period, particularly in women with a pre-existing vulnerability, such as a history of MH problems. Exploring the role of previous diagnosis of MH problems in the association between partner support during childbirth and postpartum MH problems can contribute to understanding the potential impact of partner support during childbirth in women with pre-existing vulnerabilities. This knowledge can inform tailored interventions to prevent postpartum MH problems.

Addressing this issue, this study aimed to analyse (1) the association between partner support during childbirth and depressive, anxiety, and CB-PTSD symptoms in the postpartum period; and (2) the moderating role of previous diagnosis of MH problems in those associations. This study has the potential to inform healthcare practices and interventions, ultimately leading to improved support for women during the postpartum period.

Methods

Participants and procedure

The sample comprised 284 women in the postpartum period. This research received approval from the Ethical Committees of all participating institutions. It forms part of a larger longitudinal cohort (Pinto et al., 2024), which is included in the International Survey of Childbirth-Related Trauma (INTERSECT) project (https://www.intersectstudy.org/). Women were invited to participate in person either during their third trimester of pregnancy at obstetric outpatient clinics in Portuguese hospitals or after giving birth during their hospital stay, between January 2023 and February 2024. The study's aims and procedures were explained to them, and those who agreed signed an informed consent form and completed a series of questionnaires. Eligibility criteria included being 18 years or older and having the ability to understand Portuguese.

The data from the assessment at two months postpartum (M = 8 weeks, SD= 4.7) were used to address the aims of the present study. A total of 1020 women were contacted for the study (676 during pregnancy and 344 in 2–3 days after childbirth). Of these, 410 participants submitted the questionnaires at 2 months postpartum. For this analysis, we included 284 participants who currently had a partner, whose partner was present during childbirth, and completed the questions to assess partner support during childbirth and previous diagnosis of MH problems, as well as the questionnaires assessing depressive, anxiety, and CB-PTSD symptoms at two months postpartum (see Fig. 1).

Measures

Sociodemographic, obstetric, and MH-related characteristics

A self-report sociodemographic questionnaire was used to assess women's sociodemographic (age, being born in Portugal, ethnicity, marital status, education, income), obstetric and foetal characteristics (prematurity, type of gestation, type of birth, obstetric complications, foetal/neonatal complications, exclusively breastfeeding, parity), and to collect information about the existence of previous traumas.

Perception of partner support during childbirth

One item from the sociodemographic questionnaire was used to assess women's perception of partner support during childbirth "Quantify the support you received from your partner during childbirth", rated on a 4-point scale ranging from none (0) to total support (4).

Previous diagnosis of MH problems

One item from the sociodemographic questionnaire was used to obtain information on any previous diagnosis of MH problems "Have you ever been diagnosed with a psychological or mental health problem?" (yes vs. no).

Depressive symptoms

The Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) was used to evaluate depressive symptoms. It consists of 10 items answered on a 4-point scale ranging from 0 to 3, with responses ranging from 'not at all' to 'most of the time', on the frequency of occurrence of each symptom in the last seven days. The total score can range from 0 to

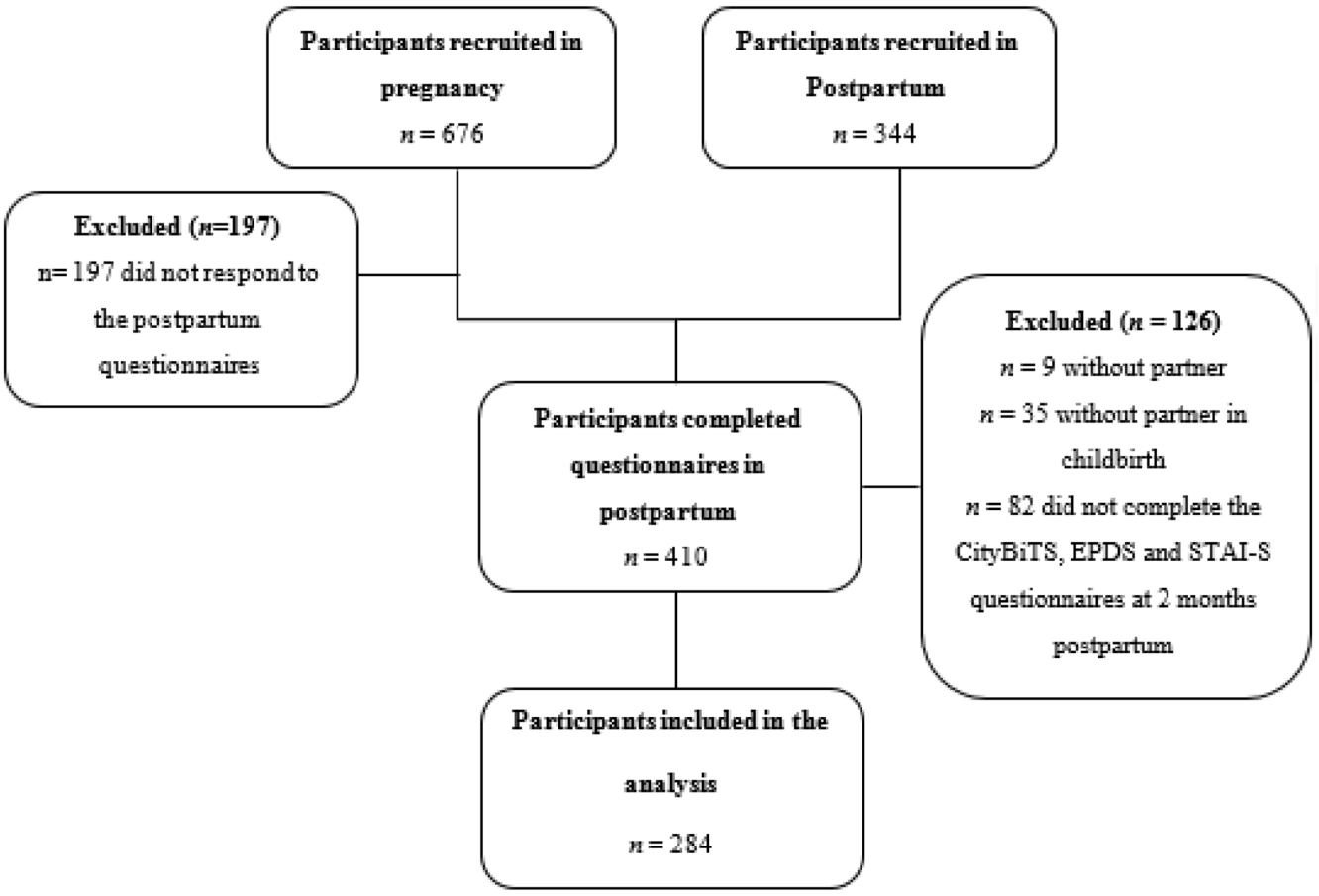

Fig. 1. Flowchart of participant recruitment and retention.

30, with higher scores indicating more depressive symptoms. The EPDS original version has good internal consistency (Cox et al., 1987). The EPDS Portuguese version also showed good internal consistency in the postpartum period (Costa et al., 2024). In the present sample, Cronbach's α was 0.86.

Anxiety symptoms

The State-Trait Anxiety Inventory - State subscale (STAI-S; Spielberger et al., 1983) was used to assess anxiety symptoms. The STAI-S consists of 20 items, answered on a 4-point Likert-type scale ranging from 1 to 4, with responses ranging from 'almost never' to 'almost always' according to the intensity with which the individual experienced a certain feeling of anxiety at the present moment. The scale total score can range from 20 to 80, with higher scores indicating higher anxiety symptoms. The STAI-S original version has good internal consistency (Spielberger et al., 1983). The STAI-S Portuguese version also showed excellent internal consistency in the postpartum period (Pinto et al., 2023). In the present sample, Cronbach's α was 0.94.

Childbirth-related PTSD symptoms

The City Birth Trauma Scale (City BiTS Scale; Ayers et al., 2018; Osório et al., 2021) was used to assess CB-PTSD symptoms. The CityBiTS is a 29-item scale, developed based on the general PTSD diagnostic criteria according to Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013). It comprises two dimensions (birth-related symptoms and general posttraumatic stress disorder), divided into five symptom clusters: re-experiencing, avoidance, negative cognitions/mood, hyperarousal, and dissociation. In this study, we used the CityBiTS birth-related symptoms (9 items; e.g., "Trying to avoid thinking about the birth", "Flashbacks to the birth and/or reliving the experience") to assess CB-PTSD, which cover symptoms of re-experiencing, avoidance, and negative cognitions/mood related to birth. These items are scored on a 4-point Likert-type scale, ranging from 0 (never) to 3 (five or more times). The scores are computed by summing up the items (range: 0–27), with higher scores indicating greater severity of birth-related symptoms (Ayers et al., 2018). The original version of the total scale and subscales had good internal consistency (Ayers et al., 2018), as well as the Portuguese version (Osório et al., 2021). In the present study, Cronbach's alpha was 0.89.

Statistical analysis

Descriptive statistics were computed for all study variables. Pearson correlations were conducted to explore associations between partner support during childbirth, depressive, anxiety, and CB-PTSD symptoms. Differences/associations between participants' sociodemographic, obstetric, and MH-related characteristics (see Table 1) and partner support during childbirth, and depressive, anxiety, and CB-PTSD symptoms were performed using one-way ANOVAs (for categorical and ordinal variables), and Pearson correlations (for continuous variables) to identify potential covariates.

To analyse (1) the association between partner support during childbirth and depressive, anxiety, and childbirth-related post-traumatic stress disorder (CB-PTSD) symptoms in the postpartum period; and (2) the moderating role of previous diagnosis of MH problems in those associations, 3 moderation models were tested using the PROCESS macro (Model 1; Hayes, 2017). The model included (1) partner support during childbirth as the independent variable; (2) previous diagnosis of MH problems (0 = no; 1 = yes) as the moderating variable; and (3) the

Table 1
Participants' sociodemographic and obstetric characteristics ($N = 284$).

	%	*n*
Born in Portugal		
No	16.2	46
Yes	83.8	238
Missing	0	0
Ethnicity		
Majority	96.8	239
Minority	3.2	8
Missing	13	37
Education		
Without higher education	31.8	90
With higher education	68.2	193
Missing	0	0
Income perception		
Below average	6.5	18
Average	68.8	192
Above average	24.7	69
Missing	1.8	5
Marital status		
Married/cohabiting	76.8	218
Lives with a partner	20.4	58
Has a partner, but they don't live together	2.8	8
Missing	0	0
Prematurity		
No	89.1	253
Yes	10.9	31
Missing	0	0
Type of gestation		
Single	95.4	271
Twin	4.6	13
Missing	0	0
Type of birth		
Vaginal	44.5	126
Instrumental vaginal	22.6	64
Emergency caesarean section	13.4	38
Elective caesarean section	19.4	55
Missing	4	1
Obstetric complications		
No	63.3	176
Mild	29.5	82
Severe	7.2	20
Missing	2.1	6
Foetal/neonatal complications		
No	82	232
Mild	14.1	40
Severe	3.9	11
Missing	4	1
Parity		
Primiparous	55.5	157
Multiparous	44.5	126
Missing	4	1
Exclusive breastfeeding		
No	43.7	124
Yes	56.3	160
Missing	0	0
Potentially traumatic lifetime events		
No	61.7	169
Yes	38.3	105
Missing	3.5	10
Previous diagnosis of mental health problems		
No	78.2	219
Yes	21.8	61
Missing	1.4	4

interaction between partner support during childbirth and previous diagnosis of MH problems to test the moderation effect. Depressive, anxiety, and CB-PTSD symptoms were included as dependent variables in each model. Models were adjusted for the identified covariates: age, being born in Portugal, obstetric complications, and type of birth. These covariates were selected as preliminary analysis showed associations with the independent or dependent variables. Conditional effects were examined and graphed for each group of the moderator.

The statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS, IBM Corp., v.28.0, 2022) and the PROCESS computation macro (v.3.5; Model 1; Hayes, 2017). The level of statistical significance was set at $p < .05$.

Results

Participants' sociodemographic and obstetric characteristics

The mean age was 33.48 years ($SD = 5.19$). Most women were born in Portugal (83.8%), were from a majority ethnic group (96.8%), and were married or cohabiting (97.2%). More than half had a higher education (68.2%) and perceived their income as average (68.8%). Most women gave birth at full term (89.1%) and had a single pregnancy (95.4%). Obstetric complications during pregnancy or childbirth were reported by over a third of participants (36.7%), while foetal or neonatal complications were reported by 18%. More than half had a vaginal delivery or elective caesarean section (64%), were primiparous (55.5%), and were exclusively breastfeeding at two months postpartum (56.3%). Over a third reported potentially traumatic events during their lifetime (38.3%), and about one-fifth had a previous diagnosis of MH problems (21.8%; see Table 1).

Preliminary analysis

Descriptive statistics for the main study variables are presented in Table 2. Higher levels of partner support during childbirth were associated with higher depressive and anxiety symptoms, r range = −0.13 - −0.14, $p < .05$. Previous diagnosis of MH problems was associated with higher depressive, anxiety, and CB-PTSD symptoms, r range = 0.20 - 0.26, $p < .01$. Previous diagnosis of MH problems was not associated with partner support during childbirth (see Table 2).

Significant differences were found in partner support during childbirth according to the born country, $F(1282) = 5.30$, $p = .022$. Women who were born in Portugal reported higher partner support during childbirth ($M = 3.73$, SD = 0.61) compared to those who were not born in Portugal ($M = 3.48$, SD = 0.91). Significant differences were found in CB-PTSD symptoms according to obstetric complications, $F(2275) = 14.03$, $p < .001$. Women who reported severe complications reported higher CB-PTSD symptoms ($M = 6.25$, SD = 6.50) compared to those reporting mild ($M = 3.43$, SD = 5.79) or no complications ($M = 1.57$, SD = 2.85). A significant negative association was observed between age and CB-PTSD symptoms, $r = −0.13$, $p = .033$. Significant differences were also found in CB-PTSD symptoms according to the type of birth, $F(1281) = 20.83$, $p < .001$. Women who experienced a vaginal birth or elective caesarean section reported significantly lower CB-PTSD symptoms ($M = 1.62$, SD = 3.24) compared to women who experienced an instrumented birth or emergency caesarean section ($M = 4.04$, SD = 5.69).

Partner support during childbirth and symptoms of postpartum MH problems

Depressive symptoms

The model was significant, $F(4, 275) = 7.02$, $p < .001$, and explained 9.27% of the variance of depressive symptoms, $R^2 = 0.09$. Higher partner support during childbirth was associated with lower depressive symptoms, $\beta = −1.37$, SE = 0.50, $p = .006$ (see Table 3).

Anxiety symptoms

The model was significant, $F(4, 275) = 5.29$, $p < .001$, and explained 7.14% of the variance of anxiety symptoms, $R^2 = 0.07$. Higher partner support during childbirth was associated with lower anxiety symptoms, $\beta = −2.27$, SE = 0.97, $p = .02$ (see Table 3).

Childbirth-related post-traumatic stress disorder symptoms

The model was significant, $F(7, 265) = 10.10$, $p < .001$, and explained 21.05% of the variance of CB-PTSD symptoms, $R^2 = 0.21$.

Table 2
Descriptive statistics and correlations between main study variables ($N = 284$).

	Descriptives				Correlations				
	M	*SD*	*Min*	*Max*	1.	2.	3.	4.	5.
1. Partner support during childbirth[1]	3.69	0.68	1	4	1.00				
2. Depressive symptoms[2]	6.50	4.65	0	25	−0.14*	1.00			
3. Anxiety symptoms[3]	34.1	10.7	20	79	−0.13*	0.83**	1.00		
4. CB-PTSD symptoms[4]	2.50	4.43	0	24	−0.11	0.35**	0.34**	1.00	
5. Previous diagnosis of MH problems[5]	–	–	–	–	−0.11	0.26**	0.20**	0.24**	1.00

Notes. *M* = Mean; *SD* = Standard Deviation; CB-PTSD = Childbirth-Related Post-Traumatic Stress Disorder; MH = Mental Health;.
[1] Quantify the support you received from your partner during childbirth (scale: 0 to 4);.
[2] Edinburgh Postnatal Depression Scale (scores range: 0–30);.
[3] State Anxiety Inventory - State subscale (scores range: 20–80);.
[4] City Birth Trauma Scale (scores range: 0–60);.
[5] Have you ever been diagnosed with a psychological or mental health problem? (yes vs. no).
* $p<.05$;.
** $p<.01$.

Table 3
Partner support during childbirth and previous diagnosis of mental health problems: independent and interaction associations with depressive, anxiety, and CB-PTSD symptoms ($N = 284$).

	R (R^2)	*F*	β	*p*	*CI 95%*
Depressive symptoms[1]	0.30 (0.09)	7.02		< 0.001	
Partner support during childbirth[2]			−1.37	.006	−2.35 - −0.39
Previous diagnosis of MH problems			1.46	< 0.001	0.81 - 2.10
Partner support during childbirth x Previous diagnosis of MH problems			0.89	.037	0.05 - 1.72
Born in Portugal			0.06	.938	−1.41 - 1.52
Anxiety symptoms[3]	0.27 (0.07)	5.29		< 0.001	
Partner support during childbirth			−2.27	.02	−4.18 - −0.35
Previous diagnosis of MH problems			2.59	< 0.001	1.08 - 4.10
Partner support during childbirth x Previous diagnosis MH problems			2.28	.022	0.34 - 4.23
Born in Portugal			−0.95	.584	−4.37 - 2.46
CB-PTSD symptoms[4]	0.46 (0.21)	10.10		< 0.001	
Partner support during childbirth			−0.93	.040	−1.81 - −0.04
Previous diagnosis of MH problems			1.14	< 0.001	0.56 - 1.72
Partner support during childbirth x Previous diagnosis of MH problems			0.19	.621	−0.57 - 0.95
Born in Portugal			−0.27	.687	−1.58 - 1.04
Obstetric complications			1.88	< 0.001	1.10 - 2.66
Vaginal birth/Elective caesarean			−1.92	< 0.001	−2.93 - −0.91
Women's age			−0.09	.071	−0.18 - 0.01

Notes. CB-PTSD = Childbirth-related post-traumatic stress disorder; MH = Mental Health;.
[1] Edinburgh Postnatal Depression Scale (scores range: 0–30);.
[2] Quantify the support you received from your partner during childbirth (scale: 0 to 4);.
[3] State Anxiety Inventory - State subscale (scores range: 20–80);.
[4] City Birth Trauma Scale (scores range: 0–60).

Higher partner support during childbirth was associated with lower CB-PTSD symptoms, β = −0.93, SE = 0.45, $p = .04$ (see Table 3).

Previous diagnosis of MH problems and symptoms of postpartum MH problems

Previous diagnosis of MH problems was associated with higher depressive, β = 1.46, SE = 0.33, $p < .001$, anxiety, β = 2.59, SE = 0.77, $p < .001$, and CB-PTSD, β = 1.14, SE = 0.30, $p < .001$, symptoms (see Table 3).

Moderating role of previous diagnosis of MH problems in the association between partner support during childbirth and symptoms of postpartum MH problems

Depressive symptoms

The interaction between partner support during childbirth and previous diagnosis of MH problems was significant, $\beta = 0.89$, SE = 0.42, $p = .037$ (see Table 3). Conditional effects revealed that higher partner support during childbirth was associated with lower depressive symptoms in women without a previous diagnosis of MH problems, $\beta = -1.37$, SE = 0.50, $p = .006$. However, for those with a previous diagnosis of MH problems, partner support during childbirth was not associated with depressive symptoms, $\beta = 0.41$, SE = 0.68, $p = .551$ (see Fig. 2).

Anxiety symptoms

The interaction between partner support during childbirth and previous diagnosis of MH problems was significant, $\beta = 2.28$, SE = 0.99, $p = .022$ (see Table 3). Conditional effects revealed that higher partner support during childbirth was associated with lower anxiety symptoms in women without a previous diagnosis of MH problems, $\beta = -3.26$, SE = 1.16, $p = .005$. However, for those with a previous diagnosis of MH problems, partner support during childbirth was not associated with anxiety symptoms, $\beta = 1.30$, SE = 1.60, $p = .415$ (see Fig. 3).

Childbirth-related post-traumatic stress disorder symptoms

The interaction between partner support during childbirth and previous diagnosis of MH problems was not significant, $\beta = 0.19$, SE = 0.38, $p = .621$ (see Table 3).

Discussion

This study analysed the association between partner support during childbirth and women's symptoms of MH problems (depressive, anxiety, and CB-PTSD symptoms) in the postpartum period, and the moderating role of previous diagnosis of MH problems in the association between partner support during childbirth and women's MH problems in the

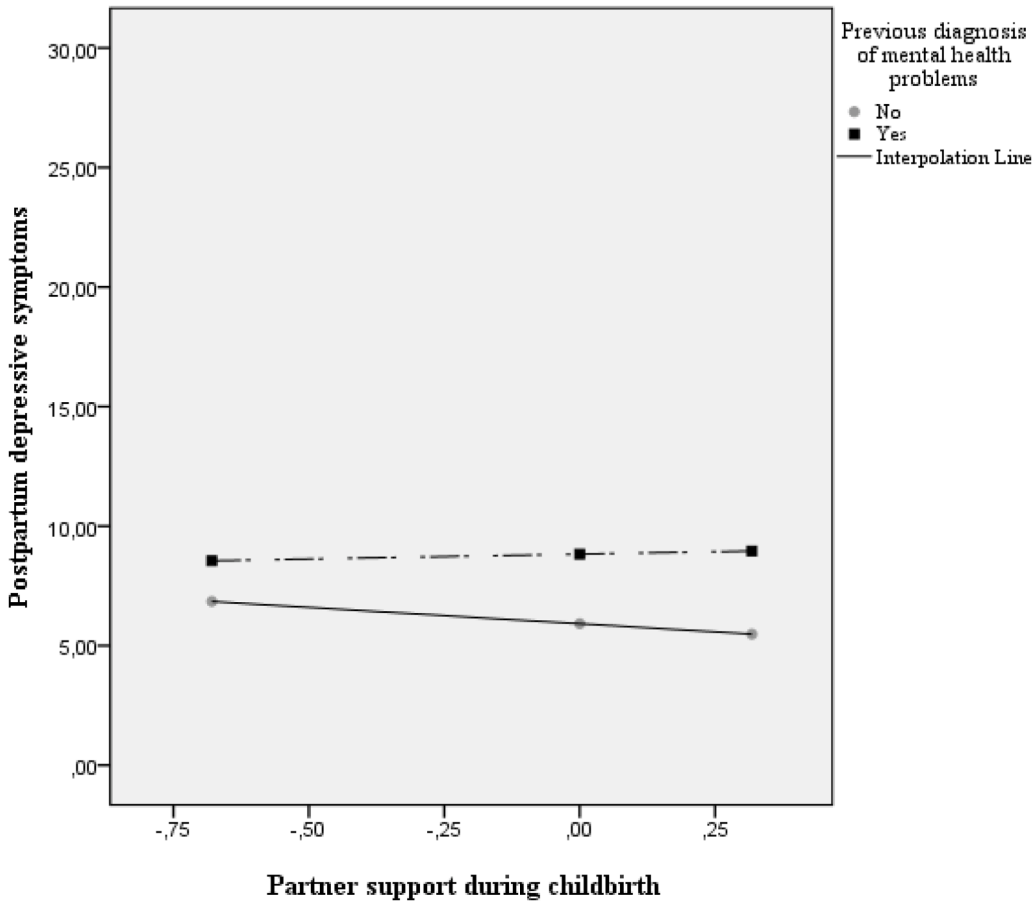

Fig. 2. The moderating role of previous diagnosis of MH problems in the association between partner support during childbirth and postpartum depressive symptoms.

postpartum period. Findings showed that (1) higher partner support during childbirth was associated with lower postpartum depressive, anxiety, and CB-PTSD symptoms; (2) a previous diagnosis of MH problems was associated with higher depressive, anxiety, and CB-PTSD symptoms; and (3) higher partner support during childbirth was associated with lower depressive and anxiety symptoms in women without a previous diagnosis of MH problems, while for those with a previous diagnosis of MH problems, partner support during childbirth was not associated with depressive or anxiety symptoms.

Our study showed that higher partner support during childbirth was associated with lower depressive, anxiety, and CB-PTSD symptoms. Findings are in line with previous research consistently showing that partner support during childbirth has a positive impact on maternal postnatal well-being, reducing anxiety and depression, and acting as a protective factor against the development of CB-PTSD (Czarnocka and Slade, 2000; Sapkota et al., 2013; King et al., 2017; Martinez-Vázquez et al., 2021). Findings can be framed within the diathesis-stress model (Ayers et al., 2016), which highlights the role of partner support during childbirth in the development of CB-PTSD symptoms. Moreover, Lazarus and Folkman's (1984) Stress and Coping Model, proposes that stress occurs when there is an imbalance between the demands of a situation (in this case, childbirth) and the resources available to deal with these demands. Partner support during childbirth can be a coping resource, promoting the ability to deal with the physical and emotional demands of childbirth. Therefore, the presence and active support role of the partner can reduce the perceived stress and the activation of the stress system, creating a safer and more reassuring environment, which can decrease anxiety levels, and the sense of threat associated with childbirth. There is also the possibility that women who received high support during childbirth can also be more satisfied with the couple's relationship, which can be associated with lower symptoms of mental health problems during the postpartum period (Figueiredo et al., 2018).

Previous diagnosis of MH problems was associated with higher depressive, anxiety, and CB-PTSD symptoms, which is congruent with previous findings (Chan et al., 2020; Dekel et al., 2017; Ahmed et al., 2019; Alzahrani et al., 2022). Women with a history of MH problems are more vulnerable to experiencing heightened symptoms in the postpartum period due to various factors, such as a pre-existing vulnerability to stress and a reduced capacity to cope with the physical and emotional challenges of childbirth (Furuta et al., 2016; Silverman et al., 2017). Additionally, pre-existing MH problems may amplify the emotional and physiological stress responses during childbirth, making these individuals particularly prone to developing CB-PTSD (Zambaldi et al., 2011; Johansen et al., 2020).

Previous diagnosis of MH problems also moderated the association between partner support during childbirth and depressive and anxiety, but not the association between partner support during childbirth and CB-PTSD symptoms. Regarding depressive and anxiety symptoms, these results suggest that for women without a history of MH problems, partner support during childbirth is associated with lower depressive and anxiety symptoms, indicating that such support is crucial for women's postpartum MH. However, for those with a previous diagnosis of MH problems, partner support was not associated with depressive and anxiety symptoms. This could be attributed to several factors. Firstly, these women might have a heightened vulnerability to postpartum stress, which may stem from underlying biological and psychological predispositions that cannot be fully mitigated by their partner support alone (Chojenta et al., 2016; Dennis et al., 2018; Ahmed et al., 2019;

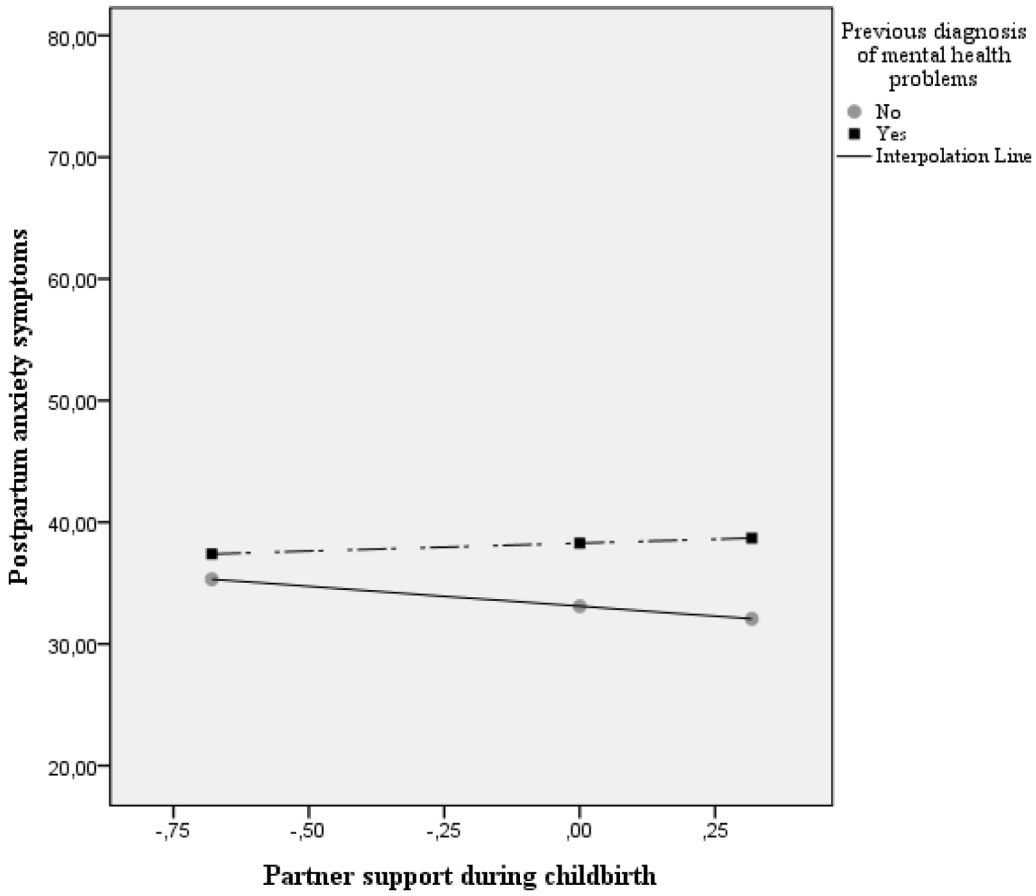

Fig. 3. The moderating role of previous diagnosis of MH problems in the association between partner support during childbirth and postpartum anxiety symptoms.

Ertmann et al., 2022). Secondly, a history of MH problems may reduce their resilience to stress, making them more prone to experiencing depressive and anxiety symptoms despite the presence of substantial partner support (Baattaiah et al., 2023). Lastly, symptoms of depression and anxiety may lead to negative cognitive biases, which can distort their perception of support. As a result, these women may have more difficulty recognizing or feeling the support provided by their partner during childbirth, further exacerbating feelings of isolation or loneliness (Dennis and Ross, 2006; Husain et al., 2012).

Previous diagnosis of MH problems did not moderate the association between partner support during childbirth and CB-PTSD symptoms. A few factors may explain this finding. Firstly, partner support during childbirth may have a consistent and universal impact on CB-PTSD symptoms, without significant variation based on MH history. CB-PTSD symptoms are strongly influenced by factors directly related to the childbirth experience, such as complications and emergency medical interventions, which are crucial in determining the severity of the symptoms (Chan et al., 2020). Nevertheless, partner support is crucial in providing a positive childbirth experience, which can help mitigate CB-PTSD symptoms, regardless of the woman's MH history. This suggests that a supportive partner can help create a more positive and less traumatic childbirth experience, potentially reducing the risk of CB-PTSD. These findings can also be understood through the lens of the diathesis-stress model (Ayers et al., 2016). Partner support during childbirth was associated with lower depressive and anxiety symptoms during the postpartum MH problems, but only for women without a pre-existing vulnerability, such as a history of MH problems. However, CB-PTSD symptoms seem to be distinct from depressive and anxiety symptoms, highlighting the importance of partner support during childbirth for women with or without a history of MH problems.

Limitations and strengths

This study has some limitations that should be considered when interpreting the results. This is a cross-sectional study which does not allow causal relationships to be established between the study variables, as women experiencing higher symptoms of MH problems may perceive lower partner support due to cognitive biases (Dennis and Ross, 2006; Everaert et al., 2012; Ferreri et al., 2011; Husain et al., 2012). Additionally, this association does not allow us to conclude that partner support during childbirth led to a reduction in symptoms, as external factors or uncontrolled variables may have influenced the observed results. Information on the timing and specific previous diagnosis of MH problems were not collected, which could have interfered in the findings. Partner support during childbirth was assessed with one-sentence non-validated item. Data on the adequacy of partner support during childbirth was not collected, which could have helped to better understand the association between partner support during childbirth and postpartum MH problems. Furthermore, the sample predominantly consists of participants with low sociodemographic, obstetric, and MH-related risk. This low-risk characteristic of the sample restricts the generalisability of the findings to higher-risk populations.

Regarding the strengths of the study, it is important to highlight the systematic recruitment process, which was conducted in central public hospitals, that serve a high proportion of the population. This approach was strategic in ensuring a more representative sample of women, thereby enhancing the external validity of the findings. Although the use of self-reported measures is a limitation, we used tools that are widely recognized and validated in the scientific literature. The adoption of well-established tools ensures the robustness and comparability of the data, contributing to the reliability of the study's conclusions.

Implications for practice and research

The results of this study underscore the importance of partner support during childbirth for women's postpartum MH, while also highlighting the complexity of the interactions between partner support and previous diagnoses of MH problems in postpartum. First, these findings suggest that more personalized interventions are necessary to effectively address depressive, anxiety, and CB-PTSD symptoms during the postpartum period. It is essential to consider women's MH history and type of symptoms when planning prenatal classes and MH interventions. Women with previous diagnoses of MH problems may require additional support beyond that provided by their partners to prevent or mitigate depressive and anxiety symptoms. Finally, healthcare providers should acknowledge the importance of the partner involvement during childbirth and, under positive couple relationship circumstances, encourage and facilitate their support to promote a positive childbirth experience. This could potentially reduce CB-PTSD symptoms, even for women with a prior history of MH problems, considering that partners can support and empower women during childbirth, ensuring they feel safe, in control, and represented in their interactions with healthcare professionals.

For future research, it is recommended to conduct longitudinal studies that assess partner support during childbirth at a different assessment wave than mental health problems during the postpartum period to understand the protective role of partner support during childbirth. Finally, the incorporation of more comprehensive and multidimensional measures of partner support during childbirth, considering not only the subjective perspective of women but also the evaluation of partners' perceptions and the objective observation of their behaviours, could enable a more understanding of the association between partner support during childbirth and women's postpartum MH.

Conclusion

Partner support during childbirth can be a protective factor for women's postpartum MH, especially for those without a previous diagnosis of MH problems. Screening and psychological support should be offered to all women after childbirth, with special attention to those with a previous diagnosis of MH problems. The results highlight the importance of health policies tailored to the individual needs of pregnant and postpartum women. As recommended by the WHO (2016), ensuring that women have access to a companion of their choice during childbirth is fundamental to promote women's postpartum mental health and well-being.

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Ethical approval

The research protocol was approved by the Commission on Ethics and Deontology in Scientific Research of the School of Psychology, Education, and Sports of Lusófona University (Ref. RC000121); Ethical Committee of Centro Hospitalar de São João, Porto (Ref. CES CHUSJ: 279 / 2022); Ethical Committee of Maternidade Alfredo da Costa (Ref. 1317/2022).

CRediT authorship contribution statement

Daniela Tavares: Writing – original draft, Formal analysis, Data curation, Conceptualization. **Daniela Fidalgo:** Writing – review & editing, Formal analysis, Data curation. **Matilde Sousa:** Writing – review & editing, Formal analysis, Data curation. **Ana Morais:** Writing – review & editing, Formal analysis, Data curation. **Inês Jongenelen:** Writing – review & editing. **Diogo Lamela:** Writing – review & editing. **Stephanie Alves:** Writing – original draft, Supervision, Conceptualization. **Raquel Costa:** Writing – original draft, Supervision, Project administration, Funding acquisition, Conceptualization. **Tiago Miguel Pinto:** Writing – original draft, Supervision, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2025.104359.

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