

Understanding the Impact of Childbirth: Postnatal Stress Symptoms in Psychologically Stable Mothers

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This study examines the psychological impact of childbirth on first-time mothers, focusing on post-traumatic stress and depressive symptoms using the Impact of Event Scale (IES) and the Edinburgh Postnatal Depression Scale (EPDS). Many participants experienced intrusive thoughts, avoidance behaviors, and depressive symptoms within the first year postpartum. A strong correlation was found between mothers' sense of safety and presence during childbirth and lower stress and EPDS scores. Additionally, the Baby Blues were associated with higher IES and EPDS scores, suggesting that early emotional disturbances can have lasting effects on maternal mental health. The study also highlights how recounting birth experiences, either as reliving them or from a present perspective, influences stress levels. These findings underscore the importance of psychological support in postnatal care and advocate for routine screening for negative birth experiences and stress symptoms, emphasizing early intervention to improve maternal and family outcomes.

Keywords: postnatal mental health, childbirth experience, maternal stress symptoms

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The Prevalence of Postnatal Stress Symptoms

Childbirth could be experienced as distressing or even traumatic by some women. A traumatic childbirth could increase the risk of anxiety, depression, and even post-traumatic stress disorder (PTSD) (Skari et al., 2002; Wijma et al., 1997). Postnatal stress remains a significant concern in maternal health. There is increasing evidence that women develop PTSD in response to the birth of their child. Reviews suggest it affects 3.17% of women postpartum. (Grekin & O'Hara, 2014). "...there is clear potential to prevent or minimize postpartum PTSD by changing maternity and early postpartum care to improve women's experiences of birth. However, in order to do this, we first need to identify the risk factors for birth-related PTSD" (Ayers et al., 2016, p.1121).

Several studies examined risk factors for developing PTSD after birth. Some are looking at previous factors, such as previous psychiatric problems (Bittner et al., 2019; Dekel et al., 2017), history of PTSD and trauma (particularly interpersonal violence) (Dekel et al., 2017); others are examining pregnancy or birth-related stress factors like previous negative birth experiences (Wigert et al., 2020), previous abortion (Sentilhes et al., 2017), severe fear of childbirth (Bittner et al., 2019; Dekel et al., 2017), subjective pregnancy-related distress (Bittner et al., 2019), psychological difficulties during pregnancy (Soederquist et al., 2009). Moreover, there are risk factors during the birth experience itself, such as birth complications (Andersen et al., 2012), poor interaction between provider and mother (Olde et al., 2006), and low social support during labor and birth (Chabbert et al., 2020; Dekel et al., 2017; Olde et al., 2006).

The transition to motherhood, therefore, seems a period of vulnerability, where the emotional and psychological well-being of women can be profoundly impacted. The physical and hormonal changes after birth and a possibly traumatic experience, along with the new responsibilities of caring for a newborn, can lead to stress reactions that, if not properly addressed, may have enduring effects on both the mother and the child. "... post-traumatic stress did not decrease over time among women who at least once had post-traumatic stress ...within 1–11 months postpartum. Women with post-traumatic stress also showed a decrease in perceived social support over time postpartum" (Söderquist et al., 2006, p.113).

As research on the prevalence of post-traumatic stress symptoms following childbirth expands, it is essential to scrutinize the data more closely. There is a

difference between the potential traumatic event and trauma reactions that occur later. Pantlen and Rohde (2001) found indications of PTSD in the first weeks after giving birth. A large portion of the women showed symptoms of anxiety, depressive moods, anger and irritability, and obsessive thoughts. In another study, many women in the study described their birth experience as traumatic four weeks after giving birth, and many developed symptoms of PTSD (Soet et al., 2003).

Subjective Birth Experience and Maternal Mental Health

A woman's subjective experience of childbirth, including her feelings of safety and presence, plays a crucial role in her mental health outcomes post-birth. Stephen Porges (2017) said, "The question is thus whether one feels safe, and not whether one is safe" (p. 17). Moreover, "To fulfill the biological necessity to maintain a sense of connection, we must prioritize efforts to convey to others that they are safe" (Porges, 2017, p. 25). Several studies have identified peritraumatic dissociation as a strong predictor for the development of chronic PTSD (Ehlers et al., 1998; Koopman et al., 1994; Murray et al., 2002; Ozer et al., 2003; Shalev et al., 1998). Shalev et al. (1996) and Marshall (2002) also showed that with increased peritraumatic dissociative experiences, the occurrence of posttraumatic stress symptoms is greater. This study explores how subjective factors during birth can influence the psychological well-being of new mothers.

Study Focus on Psychologically Stable Women

A meta-analysis on the etiology of post-traumatic stress disorder (PTSD) following childbirth identified vulnerability factors for PTSD, including prenatal depression, fear of childbirth, pregnancy health issues, and previous traumatic events (Ayers et al., 2016). Additionally, the literature indicates that an individual's psychiatric history and family history are significant in the development of post-traumatic symptoms (Czarnocka & Slade, 2000; Pantlen, 2001; Soederquist et al., 2009; Wijma et al., 1997). Patients with a history of mental disorders, such as depression, anxiety disorders, or personality disorders, have an increased vulnerability to developing other mental disorders, including PTSD. To emphasize that postnatal stress symptoms can affect any woman, regardless of their emotional stability before birth, this research specifically examines a subset of women who were psychologically stable prior

to giving birth. This approach allows for a clearer understanding of how the birth experience itself can trigger stress symptoms.

Methodology

Study Design and Objective

The study embarked on a detailed exploration of the psychological aftermath of childbirth, focusing on post-traumatic stress and depression symptoms among new mothers. By employing a cross-sectional analysis, the researcher aimed to dissect the nuanced relationship between the subjective experience of childbirth and its psychological impacts. This approach was pivotal in uncovering the multifaceted nature of postnatal stress and its triggers.

Participants

The study focused on a select group of 145 first-time mothers from an initial pool of 463 respondents. The participants were chosen based on specific inclusion and exclusion criteria to ensure a homogenous sample for accurate analysis. When completing the questionnaire, the inclusion criteria required participants to be first-time mothers of single births with infants no older than 12 months.

Exclusion criteria were meticulously applied to create a psychologically stable cohort, which included:

- Exclusion of mothers with multiple births to maintain the focus on singular birth experiences;
- Exclusion of mothers with a history of psychiatric illness to avoid pre-existing conditions influencing the study's outcomes;
- Exclusion of preterm births and, therefore, mothers with an extra set of stress due to uncertainty and extra hospital visits;
- Exclusion of mothers who had experienced miscarriages or stillbirths, as this might affect the present pregnancy and birth experience;
- Exclusion of mothers with previous traumatic experiences, particularly in the realm of sexuality or intimacy, events of violence and loss, to isolate the impact of the birth experience;
- Exclusion of mothers whose children might have potential disabilities to focus on the standard postnatal experience;

- Exclusion of mothers who reported an extremely helpful birth-related conversation (rated 6 on a scale of 1 to 6), as this could have significantly reduced stress symptoms beforehand.

The recruitment process targeted German-speaking mothers through various channels, including email distribution lists, websites like www.nachdergeburt.com and www.geburtstrauma.de, and social media platforms like Facebook, featuring targeted advertisements. The stringent application of these criteria resulted in a final sample of 145 participants, ensuring the study's findings reflect the experiences of psychologically stable, first-time mothers following a full-term, single birth.

Data Collection Instruments

The cornerstone of the study's data collection was a meticulously designed questionnaire, integrating several validated scales to capture a holistic view of the childbirth experience and its aftermath:

- **Salmon's Item List (SILGer_12):** This scale was instrumental in quantifying the emotional and physical intensity of the childbirth experience. Its inclusion allowed for a standardized measurement of the birth experience's subjective nature (Stadlmayr et al., 2009).
- **Impact of Event Scale (IES 15 scale):** By focusing on symptoms experienced within the past seven days, the IES provided a temporal snapshot of post-traumatic stress, directly linking it to the childbirth event (Horowitz et al., 1979).
- **Edinburgh Postnatal Depression Scale (EPDS):** Similarly, the EPDS assessed the immediate postnatal period, offering insights into the prevalence and intensity of depression symptoms following childbirth (Cox et al., 1987).
- **Additional Questions:** Beyond standardized scales, the questionnaire delved into personal perceptions of safety, presence, and stress during childbirth. These questions were pivotal in understanding the personal and emotional context of each birth experience.

Procedure and Analysis

The study's outreach strategy was designed to maximize participant diversity and engagement. The study accessed a broad demographic using

social media and network partnerships, ensuring a representative sample. The online questionnaire format was selected for its accessibility, encouraging participation from a wide geographical area. Microsoft Excel was utilized to analyze the collected quantitative data due to its accessibility and comprehensive features for data management and visualization. The Pearson correlation coefficient was calculated to determine the linear relationships between variables related to maternal health and childbirth experiences. Creating charts and graphs within Excel allowed for a clear visual representation of the data, aiding in interpreting complex statistical relationships. This approach provided a straightforward means to identify trends and patterns pertinent to the study's objectives. This approach ensured the analysis was methodologically sound and accessible for replication and review.

Results

All findings indicate that even psychologically stable women who had no prior history of psychiatric illness were susceptible to stress during birth, resulting in a negative birth experience and postpartum disturbances, like intrusive thoughts and avoidance related to their birth experience, indicative of post-traumatic stress, when faced with a challenging birth experience. The study revealed that a notable 48% of participants labeled their birth experience as negative, which significantly correlated with higher IES and EPDS scores, indicating a greater incidence of post-traumatic stress and depressive symptoms. In fact, 83% of the women, a significant proportion of the participants who reported a negative birth experience, also showed signs of post-traumatic stress, displaying elevated scores on the Impact of Event Scale (IES). The Salmon's Item List (SIL), a tool used to assess subjective birth experiences, indicated that 88% of women with conspicuous results also exhibited posttraumatic stress symptoms.

The statistical analysis revealed strong correlations within the participant group (N=145): There was a Pearson correlation coefficient of 0.72 between negatively rated birth experiences and the IES scores, suggesting a strong relationship between the subjective birth experience and the development of stress reactions. Similarly, a correlation of 0.70 was found between the results of the Salmon's Item List and the IES data, reinforcing the connection between the subjective assessment of birth and post-traumatic stress.

Dynamics of Post-traumatic Stress Related to Postpartum Depression

A significant portion of the study participants exhibited elevated IES scores, with 62% reporting scores indicative of moderate to severe post-traumatic stress. This was characterized by intrusive thoughts and avoidance behaviors related to their childbirth experience. Among these, 63% also showed EPDS scores suggesting depressive symptoms within the first year postpartum, highlighting the intertwined nature of post-traumatic stress and postpartum depression—a strong Pearson correlation of 0.63 between the IES and the EDPS score.

The IES Scores increased over time, being the highest in the 4th quarter of the first year. As 32% of the mothers scored stress symptoms in the EPDS and IES, 28% just in the IES, and 0.05% just in the EPDS, it highlights the importance of screening for traumatic stress symptoms, using a combination of both questionnaires to identify more woman affected by stress symptoms after a negative experience.

Accumulation of Stressful Moments

The study's results revealed a significant correlation between the number of stressful moments experienced during childbirth and the severity of postnatal stress symptoms. The data showed a significant pattern: none of the women who reported experiencing zero stressful moments were found in the *not present* or *insecure* groups. Conversely, all women who reported experiencing 31 or more stressful moments were categorized in the *insecure* group. This suggests a strong correlation between the number of stressful moments experienced during childbirth and the subsequent feelings of insecurity and lack of presence post-birth.

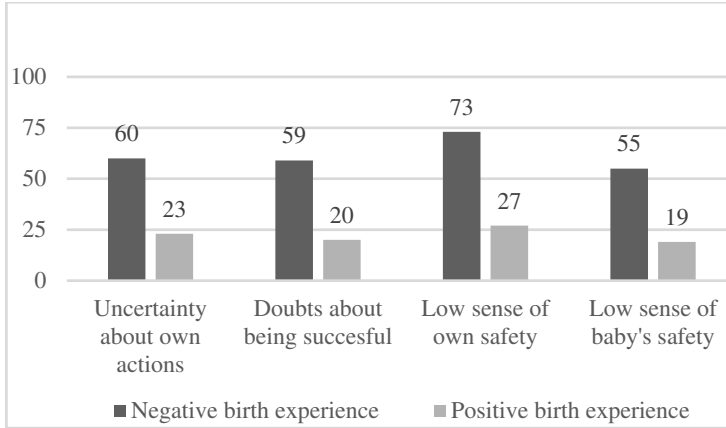
Correlation with Presence and Security

The analysis further highlights that not all women with zero stressful moments were in the *secure* or *present* groups, indicating that the absence of stressful moments does not necessarily equate to a positive or secure childbirth experience. This nuanced finding underscores the complexity of childbirth experiences, the multifaceted nature of stress, and its perception. Figure 1 shows that women with negative birth experiences felt less safe than women

with positive birth experiences. 89% of participants who lacked a sense of security during birth were more likely to report post-traumatic stress symptoms.

Figure 1

Intrinsic Feeling Safe



Note. Numbers are percentage of participants (N=145)

The study also found that 81% of women who reported a diminished sense of presence during childbirth experienced higher levels of post-traumatic stress. This finding about the relationship between the subjective feelings of safety and presence during childbirth and the subsequent stress reactions is certainly innovative. The finding that women who felt more secure and present during the birth process reported fewer posttraumatic stress symptoms and lower EPDS scores suggests that the emotional environment and support during childbirth can play a crucial role in mitigating the impact of stressful events. This could be a significant area of focus for specialists.

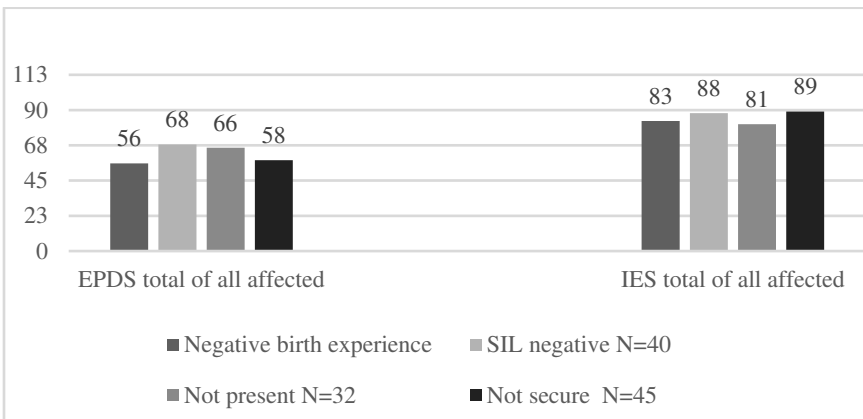
The statistical analysis revealed strong correlations, with a Pearson correlation coefficient of 0.69 within the total average of feeling safe and talking about a positive or a negative birth experience. There was also a strong correlation coefficient of 0.62 between the average of feeling safe and the stress symptoms of the IES. A strong Pearson correlation coefficient of -0.52 was found within the total average of feeling present and talking about a positive or a negative birth experience and -0.51 from the average of feeling present towards IES symptoms.

The Birth Experience and Its Stressful Outcomes

Figure 2 shows that 89% of women who did not feel secure during the birth situation showed stress symptoms in the IES later, while 58% showed higher scores in the EPDS. 81% of women who did not feel present during the birth situation showed stress symptoms in the IES later, while 66% showed higher scores in the EPDS.

Figure 2

EPDS/IES and the Birth Experience



Note. Numbers are percentage of participants (N=145)

Baby Blues and Stress Symptoms

Additionally, the study explored the relationship between *Baby Blues* days and post-stress reactions. Baby Blues (also called Postpartum Blues) is a short-term mood drop experienced by many women shortly after childbirth. During this period, new mothers often feel fatigued and emotionally unstable and may cry without a clear cause. These days are informally known as *cry days*. The Baby Blues typically last no more than two weeks and usually resolve spontaneously. It was found that experiencing more crying in the first days after birth was positively associated with higher IES and EPDS scores, indicating that early postpartum emotional disturbances could be a precursor to longer-term stress reactions.

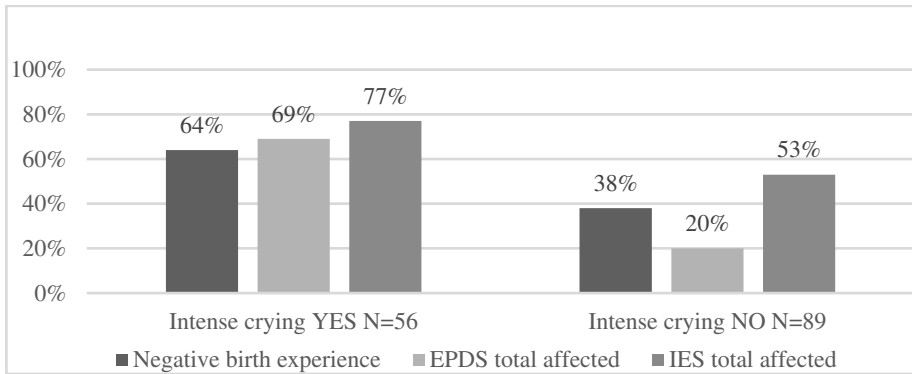
Figure 3*Baby Blues: Showing the Way?*

Figure 3 shows that women affected by Baby Blues days represent more negative birth experiences and more EPDS and IES symptoms. The Pearson correlations presented do not suggest a close relationship between the birthing experience, the following days of Baby Blues, and the onset of depressive or traumatic symptoms as measured by the EPDS and IES scores. A more detailed examination is crucial for understanding the nuances of postnatal emotional disturbances and their potential as indicators of longer-term stress reactions and depressive symptoms following childbirth.

Temporal Perspectives and Stress Correlation in Birth Experiences

The study further delved into the temporal narrative mothers employed when recounting their childbirth experiences. It investigated whether their reflections were anchored in the present or if they mentally revisited the time of the event. The findings revealed that 43% of the participants maintained their initial assessment of the birth experience, 34% retrospectively viewed it more positively, and 26% now perceived the event more negatively. Notably, one participant's rating shifted dramatically from 1 to 6 on the evaluative scale. This aspect of the study underscores the variability in responses to seemingly straightforward inquiries such as, "How was your birth?" The results suggest that the perspective from which a mother recounts her experience can significantly influence her response and its subsequent correlation with stress symptoms.

Another key observation from the research corroborates this concept. Mothers who exhibited no additional stress symptoms following early care interventions, such as the AS aftercare support program based on Trauma Incident Reduction, demonstrated elevated scores on Salmon's Item List. This increase may be attributed to a heightened awareness of the events that transpired during childbirth. The study's findings are quantitatively supported by a Pearson Correlation analysis, which indicates a strong correlation ($r = 0.72$) between stress symptoms as measured by the IES and the present-moment perspective of the birth experience. Conversely, the correlation is somewhat reduced ($r = 0.60$) when mothers mentally revisit the birth event. This suggests that the temporal context in which the experience is recalled may modulate the association with stress symptoms.

Discussion

These findings underscore the importance of emotional support during childbirth and the potential long-term impact of birth experiences on maternal mental health. The study's results highlight the need for healthcare professionals to recognize and address the psychological aspects of childbirth to mitigate the risk of postpartum stress disorders. There is a critical need for comprehensive aftercare intervention programs for new mothers. The high incidence of negative birth experiences and their correlation with post-traumatic stress and depressive symptoms highlights a significant gap in the current postpartum support structure. Existing aftercare programs solely focus on physical recovery and may overlook the psychological impact of childbirth, which can have long-lasting effects on maternal mental health.

The study's findings suggest that screening mothers for negative birth experiences and feelings of stress during childbirth could be a straightforward yet effective strategy for identifying those in need of further support. This approach acknowledges that the subjective experience of childbirth, including the mother's emotional state and sense of control, is as important as the clinical outcomes. Implementing routine screening for negative birth experiences and stress symptoms in postpartum care practices could facilitate early intervention, offering mothers the support they need to navigate the challenges of the postpartum period. The importance of temporal perspective in evaluating questions must be considered.

Implications for Aftercare Interventions

The study suggests that interventions should prioritize emotional support during and after childbirth, as feelings of safety and presence are inversely related to stress symptoms. Aftercare programs could help mitigate the effects of negative birth experiences. Early identification of Baby Blues and timely intervention could prevent the progression to more severe postpartum mood disorders. The study advocates for a holistic approach to postpartum care that includes mental health as a critical component of maternal well-being. Family-centered care models that involve partners and other family members could provide a more supportive environment for new mothers. Education and awareness programs for families about the signs and symptoms of postnatal stress can facilitate early intervention and support.

This research highlights the profound impact of childbirth experiences on a mother's psychological state. As the well-being of the mother has ripple effects on family dynamics, bonding, child development, partnership, and therefore, the whole society, it calls for a reevaluation of postpartum care practices to include mental health as a fundamental aspect of postnatal support, ensuring that families are equipped to thrive during this transformative period. The findings of this study highlight the need for comprehensive aftercare and underscore the importance of advancing trauma research within the context of childbirth. Specifically, the themes of safety, presence, and stress emerge as critical factors that significantly influence a mother's postpartum mental health. Future research should delve deeper into these themes to develop a nuanced understanding of how they interact and contribute to the overall birth experience. Such insights could inform the creation of more effective support systems that address these core aspects of childbirth.

Directions for Future Research

Further research is needed to explore the efficacy of different types of aftercare interventions in reducing postpartum stress symptoms. Longitudinal studies could provide insight into the long-term effects of negative birth experiences on maternal and family well-being. Investigating the role of perceived safety and presence during childbirth can offer valuable insights into designing interventions that enhance these feelings, potentially reducing the risk of postnatal stress. Exploring the relationship between stress during

childbirth and long-term psychological outcomes can help identify key intervention points to reduce trauma.

Conclusion

The study revealed a profound theme: the influence of temporal perspective on the evaluation of positive or negative childbirth experiences. This has important implications for clinical assessments and interventions. The findings raise critical questions about the standardization of screening questions for postpartum stress. The marked difference in stress correlation based on the recall perspective ($r = 0.72$ for present moment vs. $r = 0.60$ for retrospective) underscores the need for nuanced approaches to screening that account for the dynamic nature of avoidance and awareness and their impact on stress indicators. The power of perspective is a psychological phenomenon and a pivotal factor in the clinical understanding and support of maternal mental health. Future research should aim to unravel the complexities, ultimately guiding the development of more personalized and effective postnatal care. Incorporating these considerations into future research and clinical practice can lead to more targeted and effective support for mothers, ultimately enhancing maternal and family well-being in the postpartum period.

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