Article

The relationship between postpartum depression and domestic violence, mediated by marital satisfaction, among women in the postpartum period

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Abstract

Background: Postpartum depression (PPD) and domestic violence are both significant public health concerns that disproportionately affect women.
Objectives: The purpose of this study was to investigate the mediating role of marital satisfaction in the relationship between PPD and domestic violence among women in the postpartum period.
Methods: This descriptive study employed a structural equation modeling approach. The sample comprised 319 postpartum women who visited healthcare centers in Ahvaz City in 2023. Participants were selected using a convenience sampling method. Research instruments included the Edinburgh Postnatal Depression Scale, the Violence Against Women Questionnaire, and the Marital Satisfaction Scale. The collected data were analyzed using structural equation modeling with SPSS-26 and Amos-26 statistical software. Bootstrapping, a resampling technique, was employed to assess the significance of the indirect effect of domestic violence on PPD through marital satisfaction, thereby specifically examining the mediation hypothesis.
Results: The results demonstrated a significant negative correlation between domestic violence and marital satisfaction (β=-0.37, p=0.001). PDD and marital satisfaction were significantly correlated (β=-0.31. p=0.001). Additionally, domestic violence was positively correlated with PDD (β=0.25, p=0.008). Bootstrapping results also confirmed a significant indirect effect of domestic violence on PDD through marital satisfaction (p=0.029).
Conclusion: It found that domestic violence negatively impacts marital satisfaction, which in turn can increase the risk of PDD. The study suggests that mental health professionals should consider both domestic violence and marital distress when assessing postpartum women and that interventions aimed at improving marital satisfaction may help reduce the risk of PDD.

Implications of this paper in nursing and midwifery preventive care:

- Given the direct and indirect links between domestic violence and PPD, routine screening and intervention are crucial.
- Marital satisfaction significantly impacts PPD risk, highlighting the need for relationship assessment and support services.
- Comprehensive PPD prevention should include addressing both domestic violence and relationship factors.

Introduction

Mental health disorders and psychological distress in mothers have emerged as a significant global health concern [1]. One of the most prevalent of these is postpartum depression (PDD), which is associated with impaired maternal functioning and has a profound impact on a child's cognitive, behavioral, and emotional development. PDD refers to any level of depression (major or subclinical) and is a widespread complication of childbirth, typically occurring within 4-6 weeks postpartum [2]. The prevalence of depression in mothers during the postpartum period, one of the most challenging times for any woman, can be twice as high as during other periods of their lives and may last from several months to a year, with a 50% recurrence rate in subsequent pregnancies [3].

The prevalence of PDD varies across different populations, with some suggesting that it is three times higher in developing countries compared to developed countries [4]. Untreated PDD exposes women and their children to numerous negative short-term and long-term consequences. A better understanding of the factors influencing PDD can improve maternal and child health, mitigate harm, and ensure greater opportunities for women and children [5]. Additionally, identifying the factors contributing to PDD can provide researchers and clinicians with a theoretical basis for controlling, preventing, and treating this disorder [6]. The factors involved in the development of this

disorder have been the focus of considerable research. Reviews of the literature have identified factors that appear to either contribute to or protect against PDD; among these, social factors such as domestic violence [7] and psychological factors such as marital satisfaction [8] have been shown to have a significant impact.

Violence has increasingly been recognized as a significant global issue that can have a profound impact on women's mental health, leading to anxiety, depression, or post-traumatic stress disorder [9]. Acts of violence can include experiences such as being slapped, bitten, kicked, punched, choked, threatened with a knife or gun, experiencing physical or emotional neglect, or being coerced into sexual activity [10]. Violence can result in psychological harm, particularly when perpetrated in front of neighbors, friends, or relatives, leading to a more pronounced negative self-concept [11]. Evidence suggests that women who have experienced violence may be reluctant to disclose their experiences due to the impact on their self-esteem, confidence, dignity, worth, and even social stigma [12]. Overall, women who have experienced any form of violent event are three times more likely to develop PDD compared to women who have not experienced any violent events [13].

Previous studies have underscored the significance of marital satisfaction in the development of PDD [14,15]. Postpartum marital satisfaction is significantly impacted, with approximately 80% of first-time mothers experiencing a moderate decline in marital satisfaction [16]. The transition to parenthood is a major life event characterized by profound changes for a significant number of newlyweds. Although the birth of a child is often a joyous occasion, it can strain interpersonal resources. The transition to parenthood is a transformative experience that alters self-concept, social roles, and daily routines [17]. Feelings of intimacy and satisfaction within the relationship contribute to a better mood and increased ability to cope with the challenges of childbirth, PDD, and caring for a newborn [18]. The quality of the spousal relationship is contingent upon their adaptation to this new situation. Conversely, a decline in one partner's satisfaction is associated with a sharp decrease in the other partner's satisfaction [19].

One of the consequences of family dysfunction is the emergence of marital conflicts among couples, leading to marital dissatisfaction. Tadayon et al. [20] indicated a significant negative correlation between sexual function and marital conflicts, as well as a negative correlation between sexual satisfaction and marital conflicts among women experiencing domestic violence. Physical violence can lead to a range of cognitive (negative thoughts about oneself, others, and the future), emotional (low self-esteem, depression, fear, shame), and interpersonal (social isolation) impairments, preventing individuals from achieving a satisfactory quality of life [21]. Huang et al. showed that psychological violence accounts for high levels of marital dissatisfaction [22]. Previous findings have indicated that women who have experienced domestic violence exhibit lower levels of marital satisfaction and are more likely to engage in extramarital affairs [23]. Furthermore, Yucel et al. demonstrated that individuals who reported verbal or physical aggression from their partners had significantly lower marital satisfaction compared to those who did not report any verbal or physical aggression from their partners [24]. This suggests that verbal and physical aggression from partners hurts marital satisfaction. Accordingly, this study aimed to examine how marital satisfaction influences the relationship between PPD and domestic violence among women in the postpartum period.

Methods

This study employed a descriptive strategy utilizing structural equation modeling to examine the causal relationship between the predictor variable (domestic violence) and the outcome variable (PDD), with a particular focus on the mediating role of marital satisfaction. To achieve this objective, a conceptual model was developed and tested (Figure 1).

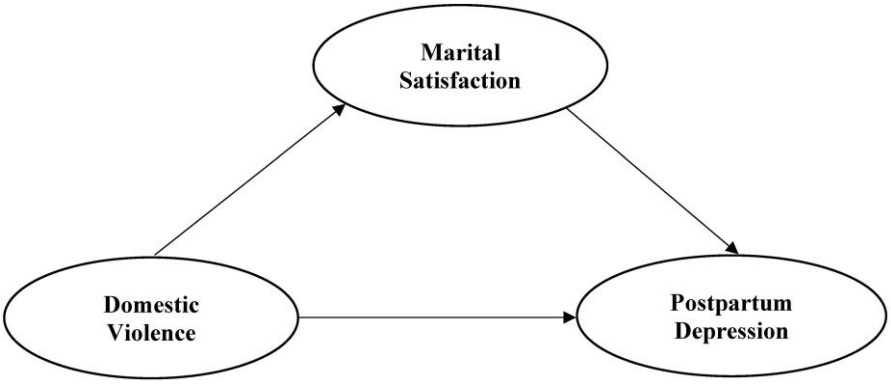

Figure 1: Conceptual model of the research

The study population consisted of postpartum women visiting health centers in Ahvaz, Iran, in 2023. Using a convenience sampling method, 319 women who met the inclusion criteria (being within the first six months postpartum, and having at least a high school education to complete the questionnaire) were selected as the sample. Exclusion criteria included incomplete questionnaires. The sample size was determined based on the number of observed variables within the structural equation model. A commonly accepted guideline for structural equation modeling suggests a minimum sample size of 10 to 20 participants per observed variable [25]. With 11 observed variables across the measures of postpartum depression, domestic violence, and marital satisfaction, a target sample size of 110 to 220 participants was considered necessary. The final sample size of 319 participants surpassed this recommendation, thus providing adequate statistical power for the analyses.

After obtaining the necessary ethical approvals, a list of 517 women who had given birth between January and June 2023 was compiled from health centers in eastern Ahvaz. From this pool, 328 women were contacted and invited to participate in the study. Potential participants were provided with detailed information about the research, including its purpose, benefits, and potential risks. Informed consent was obtained from all participants before data collection. To ensure data quality, the researcher personally administered the standardized questionnaires, which included the Violence Against Women Questionnaire to assess domestic violence, the Edinburgh Postnatal Depression Scale to measure PDD, and the Marital Satisfaction Scale to evaluate marital satisfaction. Participants completed the questionnaires under the researcher's supervision. A total of 319 completed questionnaires were included in the final analysis, after excluding nine incomplete responses.

Edinburgh Postnatal Depression Scale (EPDS) Developed by Cox et al. [26]. The EPDS is a 10-item scale using a 4-point Likert scale (ranging from 0 to 3), yielding a total score of 0 to 30. Higher total scores indicate a higher risk of PDD. The reliability of this scale, as measured by Cronbach's alpha, was reported as 0.83 in the study by Mazhari and Nakhaee [27]. In the present study, the internal consistency of the EPDS was also assessed using Cronbach's alpha, yielding a value of 0.79.

The Violence Against Women Questionnaire (VAWQ), a 32-item instrument developed by Haj-Yahia [28], assesses four dimensions of domestic violence: psychological, physical, sexual, and economic. Respondents rate the frequency of each behavior on a 3-point Likert scale, with higher scores indicating greater exposure to violence. The psychometric properties of the VAWQ have been established in previous research, with a Cronbach's alpha of 0.95 reported for the Persian version [29]. In the present study, the VAWQ demonstrated satisfactory internal consistency with a Cronbach's alpha of 0.82.

The Marital Satisfaction Scale (MSS) is a 35-item instrument that measures various aspects of marital quality, including satisfaction, communication, and conflict resolution. The

ENRICH Marital Satisfaction Scale, a more comprehensive measure, assesses a wider range of marital domains, such as satisfaction, communication, conflict resolution, and consensus. Both scales employ a 5-point Likert scale to assess agreement with statements [30]. The Persian version of the MSS demonstrated acceptable reliability, with a Cronbach's alpha coefficient of 0.74 [31]. In this study, the MSS demonstrated satisfactory internal consistency, with a Cronbach's alpha of 0.79.

Following rigorous data cleaning and verification of the assumptions for structural equation modeling (SEM), the collected data were analyzed using SPSS-26 and Amos-26. SEM was employed to examine the hypothesized relationships between the latent variables (PPD, domestic violence, and marital satisfaction) and to assess the overall fit of the proposed model. Model fit was evaluated using several indices: the chi-square statistic (χ^2), degrees of freedom (df), the chi-square to degrees of freedom ratio (χ^2/df), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Incremental Fit Index (IFI), the Relative Fit Index (RFI), the Normed Fit Index (NFI), and the Root Mean Square Error of Approximation (RMSEA). Acceptable model fit is generally indicated by χ^2/df ratios less than 3, CFI, TLI, and IFI values greater than 0.90, and RMSEA values less than 0.08. To further investigate the mediating role of marital satisfaction in the relationship between domestic violence and PPD, bootstrapping was conducted. Bootstrapping is a non-parametric resampling technique that creates multiple resamples of the original data, allowing for the estimation of the sampling distribution of the indirect effect. The output of the bootstrapping procedure provides a point estimate of the indirect effect, as well as a confidence interval.

Results

The sample for this study consisted of 319 postpartum women aged between 20 and 35 years. Regarding employment status, 27.59% (n=88) of the participants were employed outside the home, while the remaining 72.41% (n=231) were homemakers. In terms of infant gender, the sample was relatively evenly divided, with 48.28% (n=156) of the participants having a baby girl and 51.72% (n=165) having a baby boy.

Descriptive statistics for all study variables are presented in Table 1. The mean (SD) score for domestic violence was 42.31 (10.81), for marital satisfaction was 108.30 (14.66), and for PDD was 18.26 (3.67). Skewness and kurtosis values for all variables were within acceptable limits (less than 2), supporting the assumption of normality. Pearson correlation coefficients revealed a significant negative correlation between domestic violence and marital satisfaction ($r=-0.49$, $p<0.01$). A significant positive correlation was observed between domestic violence and PPD ($r=0.54$, $p<0.01$). A significant negative correlation was also found between marital satisfaction and PPD ($r=-0.51$, $p<0.01$).

Table 1: Mean, standard deviation (SD), skewness, kurtosis, and Pearson correlation coefficients of the studied variables

Variables	Mean (SD)	Skewness	Kurtosis	Correlation coefficients		
				Domestic violence	Marital satisfaction	Postpartum depression
Domestic violence	42.31 (10.81)	-0.21	0.68	1		
Marital satisfaction	108.30 (14.66)	0.01	1.46	-0.49**	1	
Postpartum depression	18.26 (3.67)	-0.78	0.63	0.54**	-0.51**	1

**: p<0.01

To assess the proposed model, SEM was employed. Before conducting SEM, the data were examined to ensure they met the necessary assumptions, including normality. The skewness and kurtosis values for all study variables were within acceptable limits, thus supporting the assumption of normality. This assumption is important for SEM because it influences the validity of the chi-square statistic and other fit indices. The SEM model examined the relationships among three variables: PPD as the dependent variable, domestic violence as the

independent variable, and marital satisfaction as the mediating variable. The model fit indices, including the CFI, IFI, TLI, RFI, NF), and RMSEA, provided evidence of a satisfactory fit between the model and the data (Table 2), as illustrated in Figure 2.

Table 2: Fit indicators of the proposed model

Fit indicators	χ^2	df	(χ^2/df)	CFI	TLI	IFI	RFI	NFI	RMSEA
Proposed model	101.35	79	1.28	0.98	0.98	0.98	0.90	0.93	0.030

CFI: Comparative Fit Index; TLI: Tucker–Lewis index; IFI: Incremental Fit Index; RFI: Relative Fit Index; NFI: Normed Fit Index; RMSEA: Root Mean Square Error of Approximation.

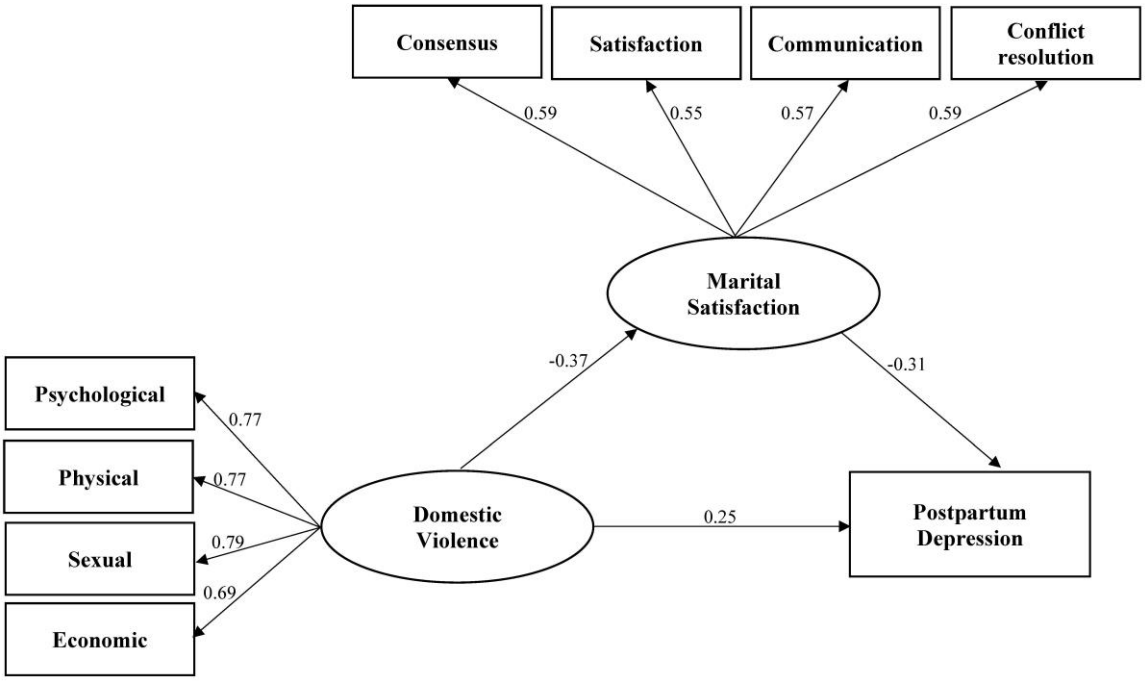

Figure 2: Proposed research model

The analysis reveals a complex relationship between domestic violence, marital satisfaction, and PPD (Table 3). A significant negative correlation was found between domestic violence and marital satisfaction, suggesting that increased domestic violence is associated with decreased marital satisfaction. Additionally, marital satisfaction demonstrated a significant negative correlation with PPD, indicating that lower marital satisfaction is linked to higher levels of PPD. While domestic violence had a direct positive correlation with PPD, suggesting a link between experiencing domestic violence and increased PPD, the analysis also revealed a significant indirect effect of domestic violence on PPD through marital satisfaction. This indicates that the negative impact of domestic violence on PPD may be partially explained by its detrimental effect on marital satisfaction. In other words, domestic violence may increase the risk of PPD by reducing satisfaction within the marriage.

Table 3: Direct and indirect path in the proposed model

Paths	Proposed model	
	β	p
Domestic violence → Marital satisfaction	-0.37	0.001
Marital satisfaction → Postpartum depression	-0.31	0.001
Domestic violence → Postpartum depression	0.25	0.008
Domestic violence → Postpartum depression through marital satisfaction	0.38	0.029

Discussion

This study aimed to examine the mediating role of marital satisfaction in the relationship between PPD and domestic violence among postpartum women. The findings indicated a significant negative correlation between domestic violence and marital satisfaction. These results align with previous studies by Bunga et al. which posit that the expression of violence is a primary factor contributing to decreased marital satisfaction [32]. Yucel research further supports this finding by demonstrating that various forms of aggression and violence can lead to marital dissatisfaction [24]. This correlation can be explained by the increased marital conflict that women experiencing domestic violence are likely to encounter. Such conflict can negatively impact the quality and satisfaction of the marital relationship, potentially disrupting sexual function [32]. In turn, disruptions in female sexual function are linked to psychological states such as depression and aggression, which can both be consequences and causes of marital conflict. These factors collectively contribute to various psychological disturbances and marital incompatibilities, including marital dissatisfaction [11].

It appears that being a victim of domestic violence is associated with lower levels of marital satisfaction. Growing up in a violent household may increase the risk of becoming a victim of domestic violence in one's relationship; thus, prior exposure to violence may be linked to lower marital satisfaction [20]. The expression of violence is correlated with high levels of marital dissatisfaction and hinders active self-expression and self-control in the partner [11]. Yucel demonstrated that couples reporting verbal or both verbal and physical aggression from their partners exhibited significantly lower marital satisfaction compared to those who reported no aggression [24]. Moreover, the impact of verbal and physical aggression on marital satisfaction is considerably greater for partners experiencing both forms of aggression compared to those experiencing only verbal aggression [12].

The study also found a significant correlation between marital satisfaction and PDD. These results align with previous research by Yoo et al., which linked lower marital satisfaction to PDD [33]. Similarly, Qi et al. identified marital satisfaction as a significant factor influencing PDD [34]. This finding can be explained by the typical decrease in marital satisfaction experienced by both partners within the first 12 to 24 months postpartum. Moreover, it confirms that one partner's satisfaction tends to decrease more significantly when the other partner's satisfaction declines sharply [33]. This decrease may reflect the challenges faced by new parents as they transition to parenthood. When becoming parenting partners, couples often experience increased marital conflict and dissatisfaction. In other words, first-time parents may exhibit a significant increase in hostility, disagreement, and problem severity in the years following childbirth [15].

Spousal psychological disorders, such as depression and anxiety, are often accompanied by conflicts and increased negative emotions like anger and sadness. Furthermore, depressed individuals are more likely to withdraw from their partners during conflicts, reducing the likelihood of conflict resolution and potentially exacerbating depressive symptoms. This relationship is stronger in couples reporting marital distress compared to those reporting higher marital satisfaction [9]. Negative marital experiences can become a source of depression for couples, and a husband's depression may increase a wife's depression over time. In such negative circumstances, the emergence of depressive

symptoms in both partners is not uncommon [34]. Marital discord can also contribute to the risk of PDD. In families characterized by frequent arguments and conflicts between spouses or between spouses and extended family members, increased family discord can significantly impact marital satisfaction and elevate the risk of PDD [14].

The study also found a significant association between domestic violence and PDD. These results corroborate previous research by Beydoun et al., which suggests that violence significantly impacts PDD [35]. This association can be explained by the severe physical, behavioral, and psychological effects that violence can have on mothers. When witnessed by others, such as neighbors, friends, or relatives, this trauma can lead to negative self-perceptions and perceptions of others. Consequently, women experiencing domestic violence are more likely to develop PDD compared to those who have not [35]. Mental health problems are at least three to five times more prevalent among women subjected to intimate partner violence. Therefore, spousal violence during pregnancy can be a risk factor for the development of PDD symptoms [36].

A possible explanation for the link between maternal experiences of violence and the risk of PDD lies in the cultural, social, and behavioral aspects of violence. Evidence suggests that women who have experienced violence may be reluctant to disclose their experiences due to factors such as self-esteem, confidence, dignity, worth, and social stigma [35]. Thus, expressing depressive symptoms may be a reaction to violence and an indirect request for help. Furthermore, domestic violence is often considered a private matter that should be kept hidden, hindering prevention efforts and potentially leading to persistent problems and the development of PDD [36].

Finally, the analysis of indirect paths revealed that domestic violence could influence PDD through the mediating variable of marital satisfaction. Specifically, domestic violence decreased marital satisfaction, which in turn increased PDD. These findings align with previous studies, such as Azad et al., which demonstrated that both violence and marital dissatisfaction are significant predictors of PDD and are also indirectly related [37]. This finding can be explained by the fact that violence, regardless of its form, has detrimental physical, psychological, behavioral, and developmental effects on victims. Perpetrating acts of violence against a spouse, both during and after pregnancy, not only contributes to PDD but can also lead to marital conflict and dissatisfaction, which in turn increases the likelihood of experiencing more severe PDD [37]. Frequent arguments, sexual violence, and verbal and physical aggression are all violent and harmful behaviors that appear to increase the risk of PDD fivefold among women who experience these conditions [13]. Women who are victims of domestic violence experience more marital conflict and report lower marital satisfaction. Marital dissatisfaction limits opportunities for self-expression among women who are victims of domestic violence; therefore, PDD in these women may be a passive reaction to the experienced violence [8].

This study has several notable strengths. The utilization of SEM enabled the examination of complex relationships between domestic violence, marital satisfaction, and PPD, extending beyond simple correlations to explore mediating pathways. Furthermore, the study's focus on postpartum women, a particularly vulnerable population, represents a significant contribution to the existing literature. However, several limitations should be acknowledged. The convenience sampling method may limit the generalizability of the findings to other postpartum populations. The reliance on self-report measures introduces the potential for response bias, especially concerning sensitive topics such as domestic violence. While education level was controlled for as an inclusion criterion, other potentially confounding variables, including socioeconomic status, parity, and history of mental health issues, were not explicitly addressed and may have influenced the results. Finally, the study's focus on women attending health centers within a single city in Iran may further restrict the generalizability of the findings to other cultural contexts.

Conclusion

The present study examined the complex relationship between domestic violence, marital satisfaction, and PDD. Our findings provide empirical evidence supporting the hypothesis that marital satisfaction mediates the association

between domestic violence and PDD. Specifically, the results revealed a significant negative correlation between domestic violence and marital satisfaction. This suggests that women experiencing domestic violence are likely to have lower levels of marital satisfaction. Furthermore, a significant positive correlation was found between marital satisfaction and PDD, indicating that higher levels of marital satisfaction may be associated with an increased risk of PDD. The significant indirect effect of domestic violence on PDD, mediated by marital satisfaction, highlights the crucial role of marital quality in the pathway linking domestic violence to PDD. These findings have important implications for clinical practice and public health interventions. Mental health professionals should be aware of the potential impact of domestic violence on postpartum women's mental health. They should assess for both domestic violence and marital distress during routine postpartum care. Additionally, interventions aimed at improving marital satisfaction may be beneficial in reducing the risk of PDD among women exposed to domestic violence. Future research should explore the underlying mechanisms of this relationship, including the role of stress, social support, and coping strategies.

Ethical Consideration

The Ethics Review Board of the Islamic Azad University Ahvaz Branch approved the present study with the following number: IR.IAU.AHVAZ.REC.1402.028.

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Conflict of interest

There are no conflicts of interest regarding the publication of the current research.

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Authors' contributions

B.M: Study concept and design, acquisition of data, analysis, and interpretation of data. S.B: Administrative, technical, and material support, study supervision, and statistical analysis. F.N: Critical revision of the manuscript for important intellectual content.

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