Addressing Depression and Psychological Need Satisfaction of Post-Cesarean Mothers

D'Netra Smith

College of Humanities and Social Sciences, Grand Canyon University, Phoenix, AZ, USA
Email: dr.dnetrasmith@phdcounselor.com

Abstract

There were 1,174,545 cesarean births in the United States in 2021, with 316,349 being considered low risk/uncomplicated (meaning no multiple births, breech presentation, prior cesarean delivery, and preterm gestation). A challenging recovery period for those mothers impacts the fulfillment of their needs. Mothers experiencing a cesarean birth may experience mood disturbances, feelings of loss of control, and higher risks of pain, infection, and internal injury, requiring extended recovery. It is assumed that challenges of the postpartum period after cesarean delivery are linked to a mother's psychological health, as physical and psychological health is interrelated. Millions of mothers self-report symptoms of PPD and are often untreated or undiagnosed, even though research shows that the physical process includes factors contributing to postpartum depression. However, it is unclear if there is any significance between levels of postpartum depression and levels of basic need satisfaction/fulfillment for mothers who experience a cesarean delivery. Therefore, this study aimed to examine the connection in which depression predicts levels of need satisfaction, applying the self-determination theory. The original research question inquires if the level of depression can be used to predict levels of basic need satisfaction (i.e., autonomy, competence, relatedness) with mothers' post-CS. A predictive quantitative nonexperimental study was chosen to carry out the research. The participants included 157 American mothers, women who were 20 - 54 years of age, experienced an uncomplicated CS, and were willing to self-report on the Postpartum Depression Screening Scale (PDSS) and the Balanced Measure of Psychological Needs (BMPN) scale, as well as report demographic information (age and race) through an online survey. The PDSS consisted of total scores that were categorized into two groups: High (score ≥ 60) and Low (score ≤ 59). The BMPN consisted of six variables identified by the instrument, including 5-point Likert scaled scores for satisfaction/dissatisfaction of autonomy, competence, and relatedness. The findings illustrated that when the age and race variables were

viewed separately, there was no significant predictability for each of the six outcome variables. However, when PPD was considered (controlling for age and race), significant predictability was shown for autonomy dissatisfaction, competence dissatisfaction, and relatedness dissatisfaction. PPD did not significantly predict autonomy, relatedness, and competence satisfaction. The findings imply that depression, autonomy, competence, and relatedness needs are significant variables to consider with mothers in the postpartum period, post-CS.

Keywords

Postpartum Depression, Cesarean, Behavioral Health, Self-Determination Theory

1. Background of the Study

According to Osterman et al. (2022), the Centers for Disease and Controls (CDC) data reveals that there were a total of 3,664,292 childbirths recorded in the United States in 2021. Postpartum depression (PPD) affected one out of every eight women, as indicated by Bauman et al. (2020), while cesarean sections (CS) accounted for one in three births. The CDC's report states that in 2021, there were 1,174,545 cesarean deliveries, with 316,349 falling into the low-risk and uncomplicated cases category. This refers to situations without multiple births, breech presentation, prior cesarean deliveries, or preterm gestations, as defined by Osterman et al. (2022). The CDC consistently collects comprehensive birth data annually, collating information from various states across the country.

The CDC's most recent reports of PPD identify that 1 in 8 women experience PPD (Bauman et al., 2020). Nevertheless, there is no clear statistical information about the intersection between mothers who undergo CS and those who experience PPD. Research studies often focus on comparing vaginal births to cesarean births, attempting to decipher which group of mothers is more prone to, or severely affected by, postpartum depression (Kunwar et al., 2015; Chin et al., 2014; Jin et al., 2016). However, these studies frequently yield inconclusive results, failing to precisely quantify the incidence of PPD following either delivery mode (Rondó et al., 2016). The emphasis on delivery methods in the studies has contributed to the uncertainty surrounding PPD.

Recognized by the CDC, postpartum depression remains an ongoing public health concern due to an increasing number of self-reported symptoms registered by mothers throughout the United States (Ko et al., 2017). Unfortunately, many affected mothers remain untreated and undiagnosed, often due to their healthcare providers downplaying their needs. Furthermore, there is a dearth of legislation mandating screenings and treatment protocols (Rowan et al., 2015). The nature of these needs varies from person to person, with their intensity fluctuating at different times during the postpartum period.

The needs commonly encompass various aspects: the requirement for increased information and knowledge to care for themselves and their newborns, the necessity to comprehend the changes in their roles following childbirth, the urge to comprehend and share anxieties and fears, and the need for confidence and support (Slomian et al., 2017). These needs can be categorized as psychological, biological, social, and cultural essentials, all from the perspective of the mothers. Research has indicated that fulfilling these fundamental psychological needs—autonomy, relatedness, and competence—can be significantly compromised as mothers adapt during the postpartum period (Ryan & Deci, 2017; Graves & Luciano, 2013; Nigatu et al., 2014), irrespective of whether they have undergone vaginal birth (VB) or cesarean section (CS). Furthermore, other studies have revealed that CSs are associated with heightened risks of pain, infection, extended recovery due to internal injury, and emotional disturbances that lead to feelings of loss of control—all impacting mothers' fulfillment of their needs (Deluca & Lobel, 2014). Some women who have undergone a CS express a sense of inability to achieve their potential as mothers (Noy et al., 2015). For others, meeting basic psychological needs is more problematic, often resulting in lower self-confidence, disempowerment, and a sense of failure (Noy et al., 2015). Even so, research indicates a likelihood of mothers succumbing to symptoms of PPD if they have experienced a cesarean birth (Rondó et al., 2016), with biological and psychological factors contributing to the diagnosis. Biological factors include dysregulation in the hypothalamic-pituitary-adrenal system, inflammatory processes, and genetic vulnerabilities (Yim et al., 2015). Numerous psychological factors have also been examined, including significant life events, chronic stressors (such as financial concerns), relationship status, and support from family and significant others (Yim et al., 2015). Nonetheless, research has highlighted numerous sociocultural elements contributing to PPD symptoms, showing significant variations across cultures. Lee and Ahn (2013) exemplify how stereotypes, racial prejudice, and economic instability are causative elements linked to depression and anxiety, displaying distinct cross-cultural variations pre- and post-childbirth. The study delves into how mothers from disadvantaged socioeconomic backgrounds and diverse races perceive and address their PPD challenges. African American women, for instance, grapple with an internal struggle between depressive feelings and embodying the image of a "strong black mother," illustrating a divergence in how they navigate their emotions and societal roles, differing from mothers of other ethnic backgrounds (Lee & Ahn, 2013). The study with mothers in India/South Asia highlighted significant correlations between PPD and factors encompassing low socioeconomic status, limited educational attainment, societal expectations for male offspring, unfavorable life occurrences, prior psychiatric conditions, and diminished partner support (Bright et al., 2018). The research review indicates a broad spectrum of maternal needs influenced by varying sociocultural factors, which needs further exploration.

Keeping that in mind, we adhere to the fact that, biologically, the surgical process is generally uniform for all mothers who undergo this type of procedure, and similar contributing factors influence these mothers (Thivierge et al., 2013; Puia, 2013). Psychologically, however, the experience may differ, and the link between PPD and the satisfaction of basic psychological needs for all mothers remains unexplored. To shed light on this topic, focusing on the autonomy, competence, and relatedness needs of mothers who undergo uncomplicated CSs is valuable for clarifying their individual needs and the potential onset of depression.

1.1. Theoretical Foundations

The guiding theoretical framework chosen for this study was the self-determination theory (SDT). The SDT, rooted in a humanistic approach, provides valuable insights into understanding human motivation. This theory emphasizes the importance of fulfilling three fundamental psychological needs—autonomy, competence, and relatedness—to attain optimal well-being (Deci & Ryan, 1985). Ryan and Deci (2017) introduced the SDT, positing that the satisfaction of autonomy, competence, and relatedness stands as essential prerequisites. It is hypothesized that individuals experience heightened motivation in pursuing their objectives when these three needs are adequately met. Conversely, when these needs remain unmet, it can result in a reduced capacity for psychological adaptation and overall well-being (Ryan & Deci, 2017). Additionally, circumstances that jeopardize or hinder the fulfillment of these needs lead to suboptimal well-being, a phenomenon referred to as "need thwarting" (Healy et al., 2014). To gain a deeper understanding of these foundational concepts within the SDT, it is crucial to acknowledge the core need constructs underpinning the theory and this study.

1.2. SDT and Basic Psychological Needs

The concept of needs encompasses a vast and diverse range of interpretations. Throughout its definition, overarching terms such as necessity, obligation, requirement, deficiency, inherent, and the resolution of unsatisfactory conditions are commonly found (Merriam-Webster, year). Deprivation emerges as a central theme within these terms. Given that individuals can encounter deprivation across various aspects of their lives and at different times, needs become an integral facet of human existence. These needs can be classified in several ways, including social, environmental, physical, spiritual, and psychological.

In line with the SDT, needs are psychologically characterized as fundamental innate requisites for well-being and optimal functioning (Deci & Ryan, 1985). As mentioned earlier, the three explicitly acknowledged needs within SDT are autonomy, competence, and relatedness. Drawing from these principles, SDT has applications in fields such as education, business, injury rehabilitation, and behavioral health (Paterson et al., 2013; Trépanier et al., 2015; Silva et al., 2014).

These three needs have been evaluated and explored in diverse populations, examining various symptoms and factors to determine potential relationships between variables.

Autonomy pertains to an individual's inherent need to feel motivated by their own volition and to make choices regarding their actions and outcomes in daily life (Deci & Ryan, 1985; Biondi et al., 2015). Autonomy is fulfilled by recognizing the value of specific actions, fostering a positive response, and ultimately enhancing psychological well-being (Ryan & Deci, 2017; Chen et al., 2015). An experimental longitudinal study involving Korean physical education teachers and students examined the impact of supportive, indifferent, and controlling (thwarting) environments on participants' satisfaction, dissatisfaction, frustration, and intrinsic motivation toward activities (Cheon et al., 2019). The findings indicated that environments not conducive to students' autonomy needs led to dissatisfaction with self-directed activities, ultimately suppressing intrinsic motivation and causing disengagement (Cheon et al., 2019). Conversely, engagement and satisfaction were elevated in autonomy-supportive environments, with participants' perception of autonomy mediating these effects. Nonetheless, psychological deprivation reportedly surfaced as external circumstances began to impede functioning.

The extent to which an individual experiences autonomy can be either enhanced or undermined, particularly through the application of rewards and threats (Deci & Ryan, 1985). Building on this notion, Healy et al. (2014) extended the concept in their study, revealing that athletes' perceptions of need satisfaction predicted positive outcomes, such as vitality, in sports participation. Conversely, unfavorable outcomes like depression, burnout, and eating disorders were predicted by need thwarting (Costa et al., 2015; Pelletier et al., 2013). A theoretical link between athletes' psychological need satisfaction was established, wherein compromised needs prompted self-protective adaptations detrimental to health and well-being, underscoring the importance of fostering greater autonomy support.

Competence pertains to an individual's essential requirement to experience effectiveness, value, and efficiency when confronting various life challenges (Ryan & Deci, 2017; Chen et al., 2015). The fulfillment of competence is achieved through the autonomous enhancement of one's skill set across tasks of varying complexities (Chen et al., 2015). Positive feedback received during the pursuit of such tasks bolsters motivation and fulfills this need (Deci & Ryan, 1985; Ryan & Deci, 2017). Should a person's self-perceived level of competence need satisfaction go unfulfilled, their motivation to engage in or enhance their performance in that particular area diminishes (Deci & Ryan, 1985; Ryan & Deci, 2017). In this context, thwarting creates adverse adaptability and the readiness for novel challenges and situations. Research on the fulfillment of competence has uncovered a positive correlation with satisfaction and overall well-being, alongside a negative correlation when feelings of anxiety and depression are present (Healy et al.,

2014; Gunnell et al., 2013).

Relatedness encapsulates the fundamental need to experience a sense of belonging through connections with others and receiving support (Ryan & Deci, 2017; Chen et al., 2015). The fulfillment of relatedness arises from establishing and nurturing meaningful, close, and empathetic relationships (Chen et al., 2015). Instances where individuals experience disconnection, lack of support, detachment, isolation, abandonment, or rejection often indicate relatedness thwarting and contributing to the unmet need. For instance, research has indicated that feelings of rejection and isolation lead to heightened social sensitivity as individuals develop an internal expectation of persistent exclusion (Costa et al., 2015). Conversely, inclusion and relatedness support elevate the likelihood of experiencing motivation and contentment (Gonzalez & Chiviacowsky, 2018; Guiffrida et al., 2013).

Although each need included in the SDT is distinct, they collaborate for healthy human functioning and psychological well-being. Several studies have demonstrated the importance of acquiring satisfaction of all three needs in studies of a group of adults in Belgium evaluating sleep quality (Campbell et al., 2015) and Syrian refugees suffering from psychological distress (Weinstein et al., 2016). Furthermore, the basic psychological need assumptions of the SDT have also contributed to several mental and physical health studies that measured daytime functioning and sleep (Campbell et al., 2015), eating disorders (Matusitz & Martin, 2013), behavioral healthcare (Vansteenkiste & Ryan, 2013), predictability of mental health disorders (Zhou et al., 2017), and interventions for depression, weight loss (Legault, 2017), and diabetes (Moreau et al., 2015). These studies employed the SDT extensively across several spectrums, although many more studies have utilized the SDT framework over the years. The majority have resulted in consistent data analysis validating or adding to the SDT assumption regarding the importance of satisfying autonomy, competence, and relatedness needs.

1.3. SDT and Postpartum Depression

This study aimed to refine and augment the self-determination theory (SDT) concepts. Deci and Ryan's framework postulates that fulfilling the needs for autonomy, competence, and relatedness is an innate capacity crucial for achieving physical and psychological well-being (Deci & Ryan, 1985). Failure to attain this satisfaction can lead to struggles sustaining overall well-being and motivation (Deci & Ryan, 1985; Chen et al., 2015). Existing literature on SDT proposes that meeting these basic needs fortifies motivation and is an integral component of life satisfaction, susceptible to contextual events (Martela & Ryan, 2016).

The juncture of SDT and postpartum depression has been explored in a limited capacity, albeit with a few conducted studies. For instance, Kestler-Peleg et al. (2015) investigated breastfeeding motivation and maternal well-being in Israel. The findings unveiled a positive correlation between controlled breastfeed-

ing motivation and adverse facets of well-being, such as depression—consistent with SDT tenets (Kestler-Peleg et al., 2015). Likewise, Brenning and Soenens (2017) employed SDT as the theoretical underpinning in their study on parenting behaviors, need satisfaction/frustration, and PPD. Their longitudinal examination highlighted that thwarted needs bore a stronger connection to PPD, while the association between need satisfaction and PPD lacked significance (Brenning & Soenens, 2017). The outcomes of both studies affirmed the predictive nature of PPD in line with certain aspects of the SDT.

Consideration of the SDT and PPD together in a single study is at the core of this research to help guide further understanding of women in the postpartum period. This study clarifies the assumption that psychological health is connected to the fulfilled alignment of autonomy, competence, and relatedness needs. Through its analytical outcomes, this research could shed light on the correlation between PPD and the satisfaction of basic psychological needs for mothers who delivered via CS.

2. Methodology

The central research question was formulated to delineate the research type and identify the predictor and outcome variables that were instrumental in addressing the study's focal point. Crafting a specific question offers a focused direction on what needs measurement, enabling the development of a statistically sound response (Goertzen, 2017). The core research query aimed at tackling the issue is as follows: RQ: Does the level of depression predict levels of basic need satisfaction (i.e., autonomy, competence, relatedness) during the first year following delivery in postpartum women who experienced an uncomplicated CS? The null hypothesis (H0) states that the level of depression does not predict levels of basic need satisfaction during the first year of delivery in postpartum women who experienced an uncomplicated CS. The alternative hypothesis (H1) states that the level of depression does predict levels of basic need satisfaction during the first year following delivery in postpartum women who experienced an uncomplicated CS.

In this research study, a non-experimental quantitative predictive correlational design was employed to investigate the connection between basic psychological needs and the outcomes of depression in mothers during the postpartum period following a CS. The choice of quantitative predictive correlational research aimed to enhance the understanding of a phenomenon by uncovering the strength and direction of relationships between variables without implying a causal relationship, as seen in experimental approaches (Lomax & Li, 2013; Edmonds & Kennedy, 2016). This study examined the linear relationship among autonomy, competence, relatedness, and depression to elucidate the strength and nature of these relationships without any manipulation.

The quantitative predictive correlational design was selected based on its suitability for comprehending connections between variables that may not neces-

sarily have a cause-and-effect relationship (Warner, 2013; Watson, 2015). The statistical data derived from the utilized instruments contributed to establishing the association between one variable's value and another's, quantifying predictability. Thus, this research design significantly aided in addressing the research question and determining whether to accept or reject the hypothesis.

2.1. Variables

In this study, the criterion constructs—autonomy, relatedness, and competence—were evaluated following the guidelines of the Basic Psychological Needs (BMPN) instrument. Six scaled variables were utilized to facilitate a multivariate regression analysis (MRA), incorporating a predictor construct grouped into categories (i.e., depression levels) as determined by the Perinatal Depression Screening Scale (PDSS). These six variables encompass autonomy satisfaction, autonomy dissatisfaction, competence satisfaction, competence dissatisfaction, relatedness satisfaction, and relatedness dissatisfaction. Multivariate regression analysis is commonly employed under circumstances that involve:

- Multiple scaled/interval outcome variables.
- A categorized/grouped independent/predictor variable.
- Independent observations (Izenman, 2013).

Consequently, a predictive quantitative research design, incorporating multivariate regression analysis, was opted for to yield objective insights into the research problem and question. Additionally, demographic characteristics such as age and race were recorded and included in the dataset. The variables were reviewed for any outliers that could impact the kurtosis and skewness of the analysis (Field, 2013).

2.2. Instruments

The Perinatal Depression Screening Scale (PDSS) was employed to examine the predictor variable, which pertained to levels of depression. Meanwhile, the Basic Psychological Needs (BMPN) instrument was utilized to investigate the criterion variable, encompassing levels of autonomy, competence, and relatedness. Additionally, demographic data from participants (such as age and race) were collected to provide linkable and generalizable results (Goertzen, 2017). While these demographics were not initially part of the research question, their analysis can provide a more comprehensive interpretation of their impact on the variables.

Developed by Cheryl Beck and Robert Gable in 2002, the PDSS was published by Western Psychological Services in Torrance, California (Beck & Gable, 2002). This self-report instrument consisted of 35 items, utilizing a 5-point Likert scale, and was designed for new mothers to gauge postpartum depression levels (2002). The content scales assessed a range of aspects, including Sleeping/Eating Disturbances, Anxiety/Insecurity, Emotional Liability, Mental Confusion, Loss of Self, Guilt/Shame, and Suicidal Thoughts—interrelated factors with Diagnostic and Statistical Manual (DSM) criteria for postpartum depression (Beck &

Gable, 2002). Cumulative scores from these scales were grouped into three categories/levels. Scores ≤ 59 indicated normal adjustment, scores of 60 - 79 indicated significant levels, while scores ≥ 80 indicated positive screenings (Zhao et al., 2015). The coefficient alphas for content scales surpassed 0.75, signifying good internal consistency (Spies & Plake, 2003). Additionally, strong to excellent internal consistency was demonstrated, with alpha scores of 0.96 for the diagnostic sample and a range of 0.80 to 0.94 for content scales (Spies & Plake, 2003).

The BMPN instrument was utilized to examine the outcome variables: autonomy, competence, and relatedness. The BMPN was structured to assess psychological need constructs in alignment with the principles of the self-determination theory (SDT) (Sheldon & Hilpert, 2012). Following rigorous pilot testing, a measurement scale comprising 18 items—6 items for each of the mentioned variables—was developed in 2012 by Kennon Sheldon and Jonathan Hilpert for adults aged 18 and above (Sheldon & Hilpert, 2012). Specifically, items 1 to 6 pertain to the competence scale, items 7 to 12 correspond to the relatedness scale, and items 13 to 18 relate to the autonomy scale. Each set of items associated with a particular need can compute three distinct scores: satisfaction, dissatisfaction, and an aggregate score. The questionnaire's components are rated on a 5-point Likert scale, making it feasible to complete within a 5 to 10-minute timeframe (Sheldon & Hilpert, 2012).

2.3. Study Sample

The selected participants for this study were women aged 20 years and older who had undergone an uncomplicated CS. Additionally, participants were required to be U.S. citizens. Recent data from the CDC (Osterman et al., 2022) revealed that in 2021, a total of 1,174,545 mothers aged 20 and above underwent a CS, with 316,349 of those being categorized as low-risk/uncomplicated cases, indicating no multiple births, breech presentation, prior cesarean delivery, and preterm gestation. The inclusion criteria were set at 20 years old due to the capture of this CDC information. Also, Younger females might face additional difficulties as a vulnerable demographic due to their physical immaturity (Rolfes et al., 2016), and we want to minimize any possible risks from the study. The 2016 Health of Women and Children Report (AHRQ, 2013) offered data from the latest available postpartum depression (PPD) statistics found within the Pregnancy Risk Assessment Monitoring System (PRAMS), sourced from self-reports across 27 states in 2012. From this data, an estimated one in ten women was projected to experience postpartum depressive symptoms. The CDC/PRAMS also presented demographic breakdowns, including White, Black, Hispanic, American Indian/Alaskan Native, and Asian/Pacific Islander populations (Ko et al., 2017).

Convenience sampling was utilized due to the specification of a particular population, and a sample was drawn from a readily accessible subset of that population (Creswell, 2014). Collecting data from the entire pool of 316,349 mothers who underwent an uncomplicated CS (Osterman et al., 2022) would be

challenging. Hence, opting for a convenient sample from the broader population was deemed more feasible. Public advertisements were utilized to enhance recruitment, targeting the general public (Wise et al., 2016). In this instance, the desired audience was reached through social media platforms catering to the specific population relevant to the research. Volunteers were sought online through social media outlets like Facebook, where permission to share a study flyer was obtained from publicly accessible domains. Platforms related to the study's target population were contacted to post the flyer. The flyer included a direct link to the survey/questionnaire, ensuring ease of access for participants.

As a non-probability sampling technique, convenience sampling allows participants to consider their time, purpose, and connection to the study (Etikan et al., 2016). Hence, the sample for this study comprises participants who willingly agreed to participate and satisfy the stipulated criteria. Prospective participants accessed the survey link provided within the social media flyer and were then assessed through Qualtrics based on specific criteria, confirming their age of 20 or older, U.S. citizenship, possession of a high school diploma or equivalent, and having undergone an uncomplicated CS within the previous year. Qualtrics was utilized as the data collection instrument, with accompanying instructions to ensure anonymity.

To diminish the potential for bias, having a representative sample encompassing a range of maternal experiences is important. Given the availability of statistics on five distinct demographics (non-Hispanic/White, non-Hispanic/Black, Hispanic, American Indian/Alaskan Native, and Asian/Pacific Islander) in CDC reports, the aim was to attain a balanced representation. While convenience sampling permits inclusivity and diversity, its drawback lies in the uneven representation of each demographic due to the first-come, first-served nature of the approach (Bornstein et al., 2013). Broadening the perspectives through which the data is analyzed can enhance the research's robustness (Young & Holstein, 2017). Therefore, by incorporating variety within the sample and transparently delineating the method's limitations, the research can provide a comprehensive insight into commonalities and disparities.

To determine the appropriate sample size, an a priori power analysis was conducted using the G*Power online tool, which informed the description of the sample. G*Power indicated that a minimum of 146 participants (N = 146) was necessary to ensure adequate statistical analysis at a 95% confidence level and a 0.05 interval for regression analysis. However, it is noteworthy that this number was surpassed due to using Qualtrics' online recruitment tool. As a result, a convenient sample of 157 diverse mothers fitting the research criteria became the selected sample for the study.

3. Results

The initial assessment of normality involved examining the skewness of each variable. Skewness analysis indicated that all BMPN variables displayed a minor negative skewness, as shown in Table 1. This implies that, for the negatively

Table 1. BMPN descriptive statistics.

BMPN Subscales	Min	Max	Mean	Median	SD	Skewness	Kurtosis
Autonomy Satisfaction	3.00	15.00	9.75	10.00	2.99	−0.35	−0.26
Autonomy Dissatisfaction	3.00	15.00	9.17	9.00	3.25	−0.11	−0.74
Competence Satisfaction	3.00	15.00	10.01	10.00	3.04	−0.38	−0.38
Competence Dissatisfaction	3.00	15.00	9.39	9.00	3.24	−0.19	−0.66
Relatedness Satisfaction	3.00	15.00	10.17	10.00	3.17	−0.37	−0.43
Relatedness Dissatisfaction	3.00	15.00	9.44	10.00	3.24	−0.28	−0.65

skewed variables, there is a propensity for higher scores to be more prevalent than lower scores. In contrast, the total depression score appeared to show an opposing pattern, with a skewness value of 0.11, as indicated in Table 2.

The second assessment of normality, which involved evaluating kurtosis, aimed to ascertain whether eliminating outliers contributed to an improvement in normality. While kurtosis is influenced by outliers, considering all aspects remains vital for accurate analysis (Privitera, 2016). By employing boxplots, statistical outliers were identified and subsequently excluded from the distribution to enhance the analysis. As illustrated in Table 3, the BMPN scaled items were denoted with asterisks, indicating non-normally distributed data. Among the variables, only the total depression score exhibited a normal distribution. However, the dataset failed to meet the assumptions necessary for conducting multivariate regression. When results exhibited high kurtosis (non-normal distribution), efforts were made to align the distributions with a normal curve. This is where the management of outliers became crucial. Identification of statistical outliers through boxplots and their removal was implemented. Despite these attempts, the BMPN variables did not achieve normal distribution, as indicated by the asterisks, and the PDSS variables also did not satisfy the criteria. As a result of these findings, an alternative approach was considered—specifically, a shift towards logistic regression analysis, prompted by the necessity for a non-parametric test. The final examination for normality was the Kolmogorov test, although the corresponding chart is not presented here. Nonetheless, the outcomes mirrored those obtained through the kurtosis analysis, with only the PDSS variable demonstrating normal distribution.

Given the absence of the requisite normal distribution for the original plan of conducting multivariate linear regression and taking into account the statistical disparities observed in PDSS and BMPN scaled scores, the utilization of logistic

Table 2. PDSS descriptive statistics.

	N	Min	Max	Mean	Median	SD	Skewness	Kurtosis
Total PDSS Score	157	35.00	175.00	101.49	101.00	34.88	0.11	−0.66

Table 3. Normality statistics of scaled items: with and without outliers included.

	Outliers Included	Outliers Removed
Autonomy Satisfaction	0.11***	0.13***
Autonomy Dissatisfaction	0.10**	0.15***
Competence Satisfaction	0.11***	0.17***
Competence Dissatisfaction	0.10***	0.17***
Relatedness Satisfaction	0.09**	0.14**
Relatedness Dissatisfaction	0.11***	0.18***
Total Depression Score	0.05	NA

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

regression was employed. This aimed to establish a balance in predicting the outcomes (autonomy, relatedness, competence) based on the predictor variable (depression) while also controlling for age and race as explanatory variables. Notably, the assumptions of the logistic regression analysis remained intact, indicating the appropriateness of this approach for the research. Each assumption relevant to logistic regression is addressed below to confirm the study's compatibility with this methodology.

In logistic regression, linearity assumes that explanatory variables do not necessarily need to exhibit a linear relationship with the logit of the outcome variable (Vatcheva et al., 2016). The suitability of the chosen model is best evaluated through model fit statistics and pseudo-R2/Nagelkerke values (Smith & McKenna, 2013). All assumptions pertinent to logistic regression were systematically examined and assessed within the parameters of this study.

Dichotomous variables are discrete elements that can only take one of two possible outcomes when measured (Vatcheva et al., 2016). This study's outcome variables were autonomy, competence, and relatedness. The scores for each satisfaction/dissatisfaction outcome, as assessed by the BMPN, were on a scale of 1 - 5, constituting interval/scaled data. However, each outcome variable underwent dichotomization through median splitting. Participants who scored above the median for any of the six outcomes were categorized into the high satisfaction/dissatisfaction group. In contrast, those at or below the median were grouped into the low satisfaction/dissatisfaction category. When independent variables are typically categorized for comparison with interval/scaled outcomes, methods like t-tests or MANOVA are suitable (Vatcheva et al., 2016). However, the need satisfaction levels, as outcome variables rather than independent va-

riables, were dichotomized due to the non-normality assumption. Consequently, logistic regression, which requires a dichotomous outcome variable (Vatcheva et al., 2016), was employed in lieu of multiple regression because the assumption of normality was not met.

Multicollinearity arises when multiple predictor factors exhibit correlations among themselves, potentially leading to distorted data and rendering variables statistically insignificant (Vatcheva et al., 2016). The objective is to demonstrate significance while maintaining minimal or no multicollinearity. Conventionally, a correlation coefficient of 0.80 is a cutoff for detecting multicollinearity (Vatcheva et al., 2016). In this study, the predictor variables (depression, age, race—dichotomized as White or non-White) demonstrated low or negligible levels of multicollinearity. The correlations ranged from −0.11 to 0.14, as depicted in Table 4.

A goodness-of-fit test evaluates the degree to which an anticipated distribution aligns with the observed data collected from a population (Smith & McKenna, 2013). It assesses whether the sample data accurately represents the expected outcomes. The examination of predictors was conducted, involving a model-fitting process that encompassed all six outcome variables. The objective was to determine if any predictors significantly contributed to predicting autonomy, competence, and relatedness satisfaction or dissatisfaction. Three goodness-of-fit statistics were employed to assess the predictive quality of the model containing the three predictors (White ethnicity, age, and PPD) in relation to the satisfaction/dissatisfaction of autonomy, competence, and relatedness among post-CS women. First, a comparison was made between the predictive accuracy of the baseline (constant) model, which included no predictors, and the model featuring all three predictors. The intention was to observe whether the addition of predictors improved accuracy.

Autonomy Satisfaction: The prediction accuracy slightly increased from 57.3% in the baseline model to 59.9% upon incorporating the three predictors. The omnibus test of model coefficients indicated that the model comprising all three predictors did not achieve statistical significance, χ^2 (3), (N = 157) = 0.96, p = 0.81. Here, the p-value must be less than 0.05. The Nagelkerke R2 value, at 0.008, signifies that less than 1% of the variance in predictions of women's satisfaction with autonomy can be accounted for by the model encompassing the participant's race, age, and postpartum depression levels. In Table 5, the significance column (p-values), values should be less than 0.05; however, none met this

Table 4. Multicollinearity results.

	White	Age	PDSS
White	1.00	−0.11	0.05
Age	−0.11	1.00	0.14
PDSS	0.05	0.14	1.00

Table 5. Logistic regression results: autonomy satisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether participant is White	−0.24	0.33	0.55	1.00	0.46	0.79	0.41	1.49
Age	0.00	0.02	0.00	1.00	0.98	1.00	0.95	1.05
Postpartum depression	0.00	0.00	0.34	1.00	0.56	1.00	0.99	1.01
Constant	−0.47	0.96	0.24	1.00	0.62	0.63		

criterion. Consequently, the null hypothesis was retained.

Autonomy Dissatisfaction: The predictive accuracy improved from 53.5% in the baseline model to 81.5% once all three predictors were introduced. The omnibus test of model coefficients indicates that the model comprising all three predictors is statistically significant, with $p < 0.001$. The Nagelkerke R2 value, at 0.52, signifies that 52% of the variance in predicting women's autonomy dissatisfaction is accounted for by the model encompassing race, age, and postpartum depression levels. Among the predictors, postpartum depression emerged as the sole statistically significant factor for autonomy dissatisfaction ($p < 0.001$) while controlling for race and age. Moreover, in the B coefficient column of Table 6, the odds reveal that women with elevated postpartum depression levels are 1.06 times more likely than their counterparts with lower postpartum depression levels to experience high levels of autonomy dissatisfaction. As a result of these findings, the null hypothesis was rejected in this instance.

Competence Satisfaction: Upon incorporating the three predictors, the predictive accuracy experienced a marginal increase from 52.9% in the baseline model to 56.7%. However, the omnibus test of model coefficients reveals that the model encompassing all three predictors does not demonstrate statistical significance, with $p = 0.96$. The Nagelkerke R2 value, amounting to 0.003, indicates that less than 1% of the variance in predicting women's competence satisfaction can be accounted for by the model that incorporates the participant's race, age, and postpartum depression levels. In the Sig column, the p values need to be less than 0.05 for significance; however, none met this criterion, as demonstrated in Table 7. Consequently, the null hypothesis was retained.

Competence Dissatisfaction: Incorporating the three predictors enhanced predictive accuracy from 51.6% in the baseline model to 78.3%. The omnibus test of model coefficients indicates that the model comprising all three predictors holds statistical significance, with $p < 0.001$. The Nagelkerke R2 value of 0.49 reveals that 49% of the variance in predicting women's competence dissatisfaction is accounted for by the model encompassing race, age, and postpartum

Table 6. Logistic regression results: autonomy dissatisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether the participant is White	−0.27	0.43	0.41	1.00	0.52	0.76	0.33	1.75
Age	−0.04	0.04	1.55	1.00	0.21	0.96	0.89	1.03
Post-partum depression	0.06	0.01	38.88	1.00	0.00*	1.06	1.04	1.08
Constant	−4.49	1.38	10.51	1.00	0.00	0.01		

Table 7. Logistic regression results: competence satisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether the participant is White	0.10	0.32	0.10	1.00	0.75	1.11	0.59	2.09
Age	−0.01	0.02	0.19	1.00	0.66	0.99	0.94	1.04
Post-partum depression	0.00	0.00	0.04	1.00	0.83	1.00	0.99	1.01
Constant	0.25	0.95	0.07	1.00	0.79	1.29		

depression levels. Thus, as a collective, the model represents the observed data effectively. However, it is important to note that postpartum depression was the sole statistically significant predictor of competence dissatisfaction, with $p < 0.001$, while controlling for race and age. Additionally, in Table 8, the B coefficient column indicates that women with high levels of postpartum depression are 1.06 times more likely than their counterparts with lower levels of postpartum depression to experience high levels of competence dissatisfaction. In this case, the null hypothesis was rejected.

Relatedness Satisfaction: Upon inclusion of the three predictors, the predictive accuracy improved modestly from 51.6% in the baseline model to 62.4%. However, the omnibus test of model coefficients indicates that the model encompassing all three predictors lacks statistical significance, with $p = 0.52$. The Nagelkerke R^2 value of 0.019 suggests that approximately 2% of the variability in predicting women's relatedness satisfaction is accounted for by the model incorporating the participant's race, age, and postpartum depression levels. It is worth noting that no predictor variables exhibited statistical significance in the Sig column, as p-values did not fall below 0.05, as shown in Table 9. As a result, the null hypothesis was upheld.

Table 8. Logistic regression results: competence dissatisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether the participant is White	0.42	0.42	0.99	1.00	0.32	1.52	0.67	3.43
Age	0.00	0.03	0.00	1.00	0.96	1.00	0.94	1.07
Post-partum depression	0.05	0.01	38.61	1.00	0.00	1.06	1.04	1.07
Constant	−5.78	1.43	16.30	1.00	0.00	0.00		

Table 9. Logistic regression results: relatedness satisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether the participant is White	0.05	0.32	0.03	1.00	0.87	1.06	0.56	2.00
Age	0.00	0.02	0.00	1.00	0.95	1.00	0.95	1.05
Post-partum depression	−0.01	0.00	2.15	1.00	0.14	0.99	0.98	1.00
Constant	0.65	0.95	0.47	1.00	0.49	1.92		

Table 10. Logistic regression results: relatedness dissatisfaction.

	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Whether the participant is White	0.82	0.42	3.84	1.00	0.05	2.27	1.00	5.13
Age	−0.01	0.03	0.03	1.00	0.87	0.99	0.93	1.06
Post-partum depression	0.05	0.01	37.09	1.00	0.00	1.05	1.03	1.07
Constant	−5.67	1.39	16.73	1.00	0.00	0.00		

Relatedness Dissatisfaction: Upon incorporating the three predictors, the predictive accuracy improved from 58.6% in the baseline model to 78.3%. Notably, the omnibus test of model coefficients established that the model integrating all three predictors exhibits statistical significance, with $p < 0.001$. The Nagelkerke R^2 value of 0.45 signifies that approximately 45% of the variance in predicting

women's relatedness dissatisfaction can be accounted for by the model incorporating race, age, and postpartum depression levels. Notably, postpartum depression emerged as the sole statistically significant predictor of relatedness dissatisfaction ($p < 0.001$), even when factoring in race and age. This significance is reflected in the B coefficient column of Table 10, where the odds reveal that women with elevated postpartum depression levels are 1.05 times more prone than their counterparts with lower postpartum depression levels to experience high levels of relatedness dissatisfaction. Consequently, the null hypothesis was rejected in this particular instance.

4. Discussion

Given the persistent challenge of achieving normality, whether with or without explanatory variables, as previously highlighted, an adaptation to the regression model is necessary to present the outcomes of the predictor/explanatory variable and its connection to each criterion variable (Lund & Solutions, 2015). These modifications lead to reporting results through logistic regression, aligning with the adjusted research question and hypotheses.

The application of logistic regression analysis produced outcomes for this predictive quantitative correlational research study, with meticulous steps taken to ensure its appropriateness for the study's goals. When examining the goodness-of-fit model, it became evident that only the basic/constant model displayed enhancement when considering all three predictors collectively for autonomy, competence, and relatedness satisfaction. By factoring in age, race, and the degree of postpartum depression, predicting satisfaction levels among women post-CS became feasible. Conversely, all three models proved fitting for autonomy, relatedness, and competence dissatisfaction, signifying that the prediction of dissatisfaction levels across these three needs can be accomplished while controlling for age, race, and postpartum depression among women post-CS. Upon analyzing the predictor variables individually, no statistically significant outcomes emerged, indicating that the variables positively influenced the six subscale outcomes, aside from postpartum depression.

The observed trend highlighted the potential of PPD to serve as a robust predictor of autonomy, competence, and relatedness dissatisfaction, even when assessed independently. Conversely, the influence of age and race, when taken individually, did not yield significant outcomes. Nonetheless, the predictive capacity was enhanced, controlling for both explanatory variables and PPD. These two variables positively impacted the model, warranting thorough consideration in the realm of PPD and CS research. It is worth noting that the existing literature often lacks consistency in its coverage of these two constructs, or the findings frequently present a blend of perspectives (Gaillard et al., 2014; Kendall-Tackett et al., 2015; Tikmani et al., 2016).

The research questions included the following:

1) Is postpartum depression predictive of a level of autonomy for women

post-CS while controlling for race and age?

2) Is postpartum depression predictive of a level of competence for women post-CS while controlling for race and age?

3) Is postpartum depression predictive of a level of relatedness for women post CS while controlling for race and age?

The inquiries were tackled by analyzing the goodness-of-fit model, individual assessment of predictor variables, and consideration of confidence intervals and significance levels. The findings answer the research questions: PPD emerges as a predictive factor for autonomy, competence, and relatedness levels among women following CS, even when accounting for age and race, thereby rejecting the null hypothesis.

5. Limitations

Numerous precautions were undertaken to minimize potential risks and limitations that could compromise the study's validity. These measures included establishing explicit inclusion and exclusion criteria to address concerns (Warner, 2013). Despite these efforts, it is important to recognize that limitations are inherent in all research endeavors, and identifying them could enhance the study's overall quality (Warner, 2013; Creswell & Creswell, 2017).

One of the observed limitations pertained to the convenience sampling strategy identified. Using a non-probability convenience sampling approach via the Qualtrics online platform led to the swift recruitment of participants, leaving little room for the engagement of individuals beyond the Qualtrics database (Etikan et al., 2016). This limitation emerged due to the potential inability to attain a diverse and representative sample through convenience sampling, particularly as participants were selected on a first-come, first-served basis (Creswell & Creswell, 2017). The unequal distribution of participants across cultural groups necessitated grouping minority participants into a single category (non-White) for simplification purposes. Allowing for a longer response time for mothers recruited through social media could have contributed to a more desirable participant pool (Bornstein et al., 2013). Additionally, the study's focus on women aged 20 - 54 precluded making inferences about younger age groups.

The study was firmly grounded in the Self-Determination Theory (SDT), which furnished a solid foundation. Its core principles offered insight into basic psychological needs that were testable using a reliable instrument, the BMPN. The SDT primarily emphasized autonomy, relatedness, and competence as key variables (Ryan & Deci, 2017). Nonetheless, a limitation lies in the narrow scope of basic psychological needs examined through the lens of the SDT. Other theoretical needs, such as those outlined in Maslow's hierarchy of needs—esteem, safety, physiological, love and belonging, and self-actualization—were not included due to the time constraints of the study. The absence of a suitable instrument to assess Maslow's theoretical needs impacted the study's breadth.

Lastly, the chosen predictive quantitative correlational design offered reliabil-

ity and efficiency, producing quantifiable data within a defined timeframe (Choy, 2014). Nevertheless, the absence of a phenomenological perspective meant that the research process might have unknowingly influenced participants. An in-depth understanding of the phenomenon, captured through direct, immediate experiences and perspectives shared by individuals facing similar circumstances, might have provided a more compelling and comprehensive view. Qualitative feedback and face-to-face data collection were not incorporated, limiting participants' perspectives (Creswell & Creswell, 2017).

6. Implications

The findings of this study have important implications for counselor educators, offering practical insights that can inform their educational approaches. One significant implication revolves around how counselor educators educate students about using instruments and screening tools for mothers. It is evident that even when prompted by questions on depression instruments and answering positively for depression symptoms, some women might not recognize themselves as experiencing postpartum depression due to cultural stigma or fear (Hansotte et al., 2017). Professionals may inadvertently downplay symptoms, thereby validating the women's fears or minimizing their importance (Rowan et al., 2015). Educating students about these challenges can reduce the number of untreated women.

Furthermore, the research findings hold value for counselor educators as they provide insights into the population's needs beyond the criteria outlined in the DSM. Given that individuals' identities and mental health are intertwined with their needs, it is crucial to adopt a perspective that transcends criteria-based methods (Maracek & Gavey, 2013). Counselor educators can encourage an alternative approach to diagnosing, fostering professional growth and development through critical thinking and differentiation (McKeachie, 2014). This could involve prompting students to conduct clinical evaluations while considering cultural awareness and applying theory. Counselor supervisors might address challenges related to clinical judgment by combining standardized screenings, theoretical insights, identification of immediate needs, preventive care measures (e.g., doula support, social worker, counselor, education), and devising strategies to extend services to meet needs and reduce instances of PPD.

Additionally, practical implications within counseling education could encompass a needs-based approach, as suggested by the linkage between autonomy, competence, relatedness, and PPD. Counselor educators could introduce students to Self-Determination Theory (SDT) using experiential methods, enabling students to assess their well-being by engaging in self-reflection, dialogue, and connections with personal experiences related to the theory's concepts—including autonomy, relatedness, and competence satisfaction/dissatisfaction. This approach could provide a deeper understanding of how well-being is intertwined with the fulfillment or lack thereof of psychological needs (Goodman et al., 2015;

Ryan & Deci, 2017; Gagné et al., 2015). Such practical implications can empower students to apply theories and concepts more effectively in their future professional roles.

Given the intersecting biological and medical dimensions of postpartum depression, a valuable step could be fostering collaboration between the counseling profession and other medical practitioners and community workers. Such collaborative care initiatives can amplify awareness about the issue on a broader scale. Collaborative mental health care, leveraging multidisciplinary teams for specialized postpartum care, has effectively addressed and treated PPD symptoms (Li et al., 2016). Integrating knowledge, perspectives, concepts, and tools from interdisciplinary approaches can yield multiple benefits in advancing the comprehension of shared objectives (Littlechild & Smith, 2013; Brown et al., 2014). Consequently, the results obtained from this study could catalyze the development of deeper meaning, expectations, and value for both mothers and families. This can be achieved by creating public service announcements and distributing comprehensive resources to families, extending beyond mothers.

The guidelines for postpartum care appear to have leaned on inconsistent and outdated data, consequently leading to the neglect of this crucial phase (Haran et al., 2014; Corrigan et al., 2015). The findings from this study could play a role in motivating the formulation of more robust policies and legislation catering to mothers. By furnishing statistical evidence of the heightened likelihood of depression predicting the levels of need satisfaction, these results might pave the way for the development of policies. The United States could benefit from adjusting legislative implications and laws, necessitating the holistic evolution of services and research (Rhodes & Segre, 2013). Moreover, these findings could foster advocacy efforts and encourage the allocation of grants for further research. Establishing an evidence-based correlational relationship between need satisfaction and PPD could provide a solid foundation for advocating policy change. Emphasizing a review of diverse standards to foster respect for diversity and human dignity while encompassing wellness is a critical implication that is strongly recommended.

Analyzing the theoretical implications within research involves assessing the appropriateness of employing the theory to rationalize and elucidate the constructs of the study. When assessing the suitability of Self-Determination Theory (SDT), it becomes imperative to evaluate the fundamental constructs of the theory in conjunction with its underlying assumptions. While researchers have applied SDT across domains such as education, organizations, and injury rehabilitation (Silva et al., 2014), its exploration within the context of postpartum mothers who underwent a cesarean section (CS) remains relatively scarce. When delving into the specific components of the topic constructs, SDT has been employed in discrete studies that specifically address the intersection of depression and motherhood (Gaston et al., 2013).

In assessing the implications of SDT in the context of postpartum depression

(PPD), it becomes essential to consider the core assumptions and constructs of the theory within the unique circumstances and experiences of this population (Healy et al., 2014). The implications of this study reinforce the significance of accounting for various variables, such as age and race, which might contribute to deficits in maternal satisfaction. According to SDT, fulfilling autonomy, relatedness, and competence needs is pivotal for achieving psychological well-being (Deci & Ryan, 1985; Ryan & Deci, 2017). Furthermore, SDT posits that individuals, regardless of their demographic, possess an inherent growth potential, seeking alignment and connection with these basic needs (Chen et al., 2015).

In line with Deci and Ryan's perspective (2017), this natural alignment of needs can become compromised during the postpartum period, particularly for mothers who have undergone a CS. This study sheds light on this concern, as it demonstrates that some mothers reported elevated levels of dissatisfaction across all three needs, coupled with heightened levels of depression. For certain mothers, the struggle to have these fundamental needs met during the postpartum period can potentially contribute to diminished psychological well-being (Noy et al., 2015).

The findings of this study also suggest a negative association between intrinsic needs such as autonomy, competence, and relatedness satisfaction and postpartum depression (PPD). This could indicate that participants who exhibited such responses were internally motivated to fulfill their needs. According to SDT, these needs are met by recognizing the value in actions, independently mastering tasks, nurturing meaningful relationships, and fostering a proactive response (Ryan & Deci, 2017; Chen et al., 2015). While the levels of depression did not strongly predict the levels of need satisfaction, it is worth noting that the average depression score for the studied population was significant (p = 101.49), suggesting the presence of potential nuances that warrant further investigation.

Corresponding to SDT, a hypothesis can be formulated that activities like holding the baby, breastfeeding, and maintaining a regular eating routine might be intrinsically motivated, contributing to maternal psychological well-being. However, the biological effects of a cesarean section can impede a mother's ability to engage in these activities, such as holding the baby comfortably or participating in daily functions due to physical discomfort (Richez et al., 2015; Chin et al., 2014). Consequently, if adequate support is lacking to aid in this adjustment, it may lead to dissatisfaction with these basic needs. The results align with the study's findings, implying a relationship between need dissatisfaction (thwarting) and the experience of postpartum depression.

7. Recommendations and Future Research

This study has offered a fresh perspective on comprehending postpartum depression in the context of basic psychological needs, opening up avenues for several recommendations to enrich the research further. One potential enhancement pertains to the sampling strategy, suggesting the consideration of

stratified random sampling to enhance diversity and the generalizability of findings to the broader population. The research already included demographic representation, considering categories such as non-Hispanic/White, non-Hispanic/Black, Hispanic, American Indian/Alaskan Native, and Asian/Pacific Islander (Osterman et al., 2022). Implementing stratified random sampling would involve creating subgroups (strata) based on these demographics and drawing random samples that proportionally match the population percentages in each category (Creswell, 2014).

Furthermore, a suggestion for refining the sampling process is incorporating additional demographic information. This study did not include mothers' socioeconomic status and relationship status. Literature has highlighted higher prevalence rates of PPD among women of color (Liu & Tronick, 2013), those with lower socioeconomic status (Lee & Ahn, 2013), and those with less relationship support (Bright et al., 2018). Including such information in the sample could provide more comprehensive insights for future analyses. Incorporating mothers who experienced vaginal births in the sample is also essential.

Exploring other theoretical perspectives can also enrich the research perspective (Creswell & Creswell, 2017). For instance, the humanistic paradigm of SDT (Hansen et al., 2014) could be effectively integrated with other theoretical approaches, such as grounded theory. Doing so may further illuminate the transformation of predictive variables into basic psychological needs that manifest as suffering, deficiency, or dissatisfaction, extending beyond the criteria defined by the DSM.

Considering a qualitative/phenomenological design could also contribute significantly. As discussed, PPD's onset is variably defined, occurring within four weeks (according to the DSM), six weeks (according to the World Health Organization), or up to 12 months (as per the American College of Obstetrics and Gynecology) after childbirth (Silverman et al., 2017). This variability in time frames as explanatory predictors warrants further exploration. A longitudinal study could assess different time points, potentially shedding light on the evolving predictor-outcome relationship. Including mothers who experienced vaginal births in the sample is also essential. Even so, an exploration of postpartum anxiety can be considered as well.

The study's findings indicate that, on average, participants scored higher on the Postpartum Depression Screening Scale (PDSS). This finding raises concerns, especially considering that the study's sample represents only a limited subset of the population that underwent CSs. If this trend reflects a broader need for safeguarding and support for women, urgent policy adjustments are warranted. This underscores the critical importance of promptly addressing this issue.

In light of these observations, it would be prudent to incorporate an additional validated instrument for assessing PPD. Shifting the p-value cut-off to 0.05 may provide varying findings within the dissatisfaction scores, which may be worth examining. Additionally, it is worth noting that the research topic con-

verges both medical and behavioral health dimensions. Exploring a different tool that bridges these aspects could present an integrated approach, potentially advancing research and advocacy endeavors aimed at deeper comprehension of PPD, CS, and fundamental psychological needs. This, in turn, would contribute to enhancing education and treatment methods for affected mothers.

The data and recommendations stemming from this research can serve as a foundation for prompting others to reevaluate how the field acknowledges, instructs, diagnoses, and addresses the needs of this population. Given the urgency of the matter, it is imperative to acknowledge postpartum depression as a global concern that cannot be overlooked or evaded. It requires thorough consideration and comprehensive action. Taking into account the information provided, preventive measures can aid in decreasing the outcomes and improving the overall health of mothers.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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