
Integrating Diverse Theoretical Perspectives to Evaluate Potential Racial, Ethnic, and Socioeconomic Differences in Perinatal Depression

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Abstract

Perinatal depression is a prominent unwanted outcome associated with childbearing impacting approximately 14.5% of women during pregnancy and the postpartum period (Gaynes et al., 2005). Perinatal depression adversely impacts maternal well-being, mother-infant attachment, and child development (Beck, 1995, 1998; Postmontier, 2008a, 2008b). Despite its prevalence and implications, we know little about its etiology across diverse racial and ethnic groups of women with low socioeconomic status. The absence of a clear theoretical foundation that explicates potential racial, ethnic, and socioeconomic group differences impairs our ability to understand and accurately screen for perinatal depression across diverse women. This article integrates bio-psycho-social theory, the stress and coping model, and the life-course perspective and evaluates how these viewpoints enhance and/or limit our understanding of group differences in the experience of perinatal depression. This integrated theoretical perspective is proposed as a framework for future research to evaluate and improve perinatal depression screening and ultimately treatment across an increasingly diverse population of women at risk.

Overview of the Problem

Perinatal depression, depression with onset occurring during pregnancy (prenatal depression) or within the year following the delivery of an infant (postpartum depression), is a prominent unwanted outcome associated with childbearing (Gaynes et al., 2005). Approximately 14.5% of women experience a new depressive episode during pregnancy, and another 14.5% experience a new episode in the first three months postpartum (Gaynes et al., 2005). Perinatal depression adversely impacts maternal well-being, mother-infant attachment, and child development, including the development of the stress response system (Beck, 1995, 1998; Center of the Developing Child at Harvard University, 2009; Postmontier, 2008a, 2008b).

Despite the prevalence and implications of perinatal depression, we know little about its etiology across diverse racial and ethnic groups with low socioeconomic status. This is due, in part, to the fact that disparate biological and psychological theoretical perspectives, which shape our understanding of the construct of perinatal depression and its measurement, pay insufficient attention to the social context in which women experience perinatal depression and their understanding of this experience. Models that evaluate social factors to illuminate potential group differences in the etiology, presentation, or experience of perinatal depression are isolated, with little influence on the definition and measurement of the construct. The absence of a clear theoretical foundation that explicates potential racial, ethnic, and socioeconomic group differences impairs our ability to understand and accurately screen for perinatal depression across diverse groups of women. To this end, this paper aims to integrate bio-psycho-social theory, the stress and coping model, and the life-course perspective and evaluate how these viewpoints enhance and/or limit our understanding of group differences in the experience of perinatal depression.

Bio-psycho-social Theory of Perinatal Depression

In pregnancy and the postpartum, women experience biological, psychological, and social (bio-psycho-social) changes as the result of the demands of childbearing and parenting that serve as stressors (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993). Biological, psychological, and social theoretical perspectives all perceive constructs unique to the perinatal context, including childbearing and/or early parenting, as precipitating factors to depression. Models within these perspectives are differentiated by the primary mechanisms identified as triggers for perinatal depression. All three perspectives acknowledge the evidence of the association of a personal history of depression, most notably prenatal depression, with postpartum depression (Beck, 1996; Kim, Hur, Kim, Oh, & Shin, 2008; Le, Muñoz, Soto, Delucchi, & Ippen, 2004; Leigh & Milgrom, 2008; O'Hara, Schlechte, Lewis, & Varner, 1991; O'Hara & Swain, 1996; Ritter, Hobfoll, Lavin, Cameron, & Hulsizer, 2000). Alone, each perspective is insufficient as a causal explanation for perinatal depression. Together, these perspectives explore multiple risk and protective factors and their relationship with perinatal depression.

Biological Models

The predominate body of biological perspectives of perinatal depression focuses on how changes to a woman's endocrine system during pregnancy, childbearing, labor, delivery, and the immediate postpartum stress and disrupt the regulation of several hypothalamic-pituitary axes of the endocrine system, including the hypothalamic-pituitary (Harris, Huckle, Thomas, & Johns, 1989; O'Hara et al., 1991), hypothalamic-pituitary-thyroid (Lucas, Pizarro, Granada, Salinas, & Saanmarti, 2001), hypothalamic-pituitary-gonadal (Harris et al., 1989; O'Hara et al., 1991), and hypothalamic-pituitary-adrenal (Jolley, Elmore, Barnard, & Carr, 2007; O'Hara et al., 1991) axes (Steiner, 1979). These disruptions in the respective hormone levels are theorized to cause postpartum depression.

The hypothalamic-pituitary-adrenal axis model suggests that biological mechanisms related to stress predict postpartum depression. Specifically, changes to the hypothalamic-pituitary-adrenal (HPA) axis during pregnancy and the postpartum deregulate the hormonal balance of the HPA, resulting in postpartum depression (Steiner, 1979). Normally, the hypothalamus emits corticotropin-releasing hormone (CRH), which triggers the release of adrenocorticotrophic hormone (ACTH) from the pituitary gland and cortisol (which is associated with stress) from the adrenal cortex, where the amount of ACTH predicts the amount of cortisol over time (Jolley et al., 2007). ACTH levels increase greatly in early labor, followed by cortisol increases in transitional labor and immediately after delivery, and finally a sharp drop in both approximately four hours after delivery (Steiner, 1979). Jolley et al. (2007) found support for this model in a prospective study with a 22-woman convenience sample, identifying higher ACTH and lower cortisol in depressed compared to non-depressed postpartum women under stress after maximum exertion on a treadmill, and deregulated HPA functioning as indicated by no relationship between these two hormones at both six ($d=1.3$) and twelve ($d=1.1$) weeks postpartum.¹

However, strictly biological models pay insufficient attention to the influence of social context on biological variables or their interaction with the psychosocial environment. The

¹ Cohen's d effect size is the difference between the mean standard (z) scores divided by the standard deviation, where 0.2 is a weak, 0.4 is a moderate, and 0.8 is a strong association between two variables (O'Hara & Swain, 1996).

relationship between the endocrine system and postpartum depression is complex and not fully or adequately explained by the biological mechanisms that these models describe. This is in contrast with a review of literature on predictors of postpartum depression, which provides compelling evidence for the role of psychosocial predictors, most notably low partner and social support, stress, and lower socioeconomic status in the development of postpartum depression (Beck, 1996; Logsdon & Usui, 2001; O'Hara & Swain, 1996; Surkan, Peterson, Hughes, & Gottlieb, 2006). Specifically, strictly biological models do not adequately explore indirect effects of psychosocial stress, where psychosocial stress, in addition to biological changes related to labor and delivery, impacts the biological function, which in turn impacts postpartum depression. While Jolley et al. (2007) used physical activity as a stressor, their findings most closely matched results from studies in which psychosocial stressors were used to stimulate the HPA axes in adult women with histories of childhood abuse. These studies revealed women with a history of abuse had higher cortisol levels in response to current stressors, or had lower baseline cortisol levels that rose to normal in response to stress. While these studies were not in the perinatal context, they may suggest a differential biological response to perinatal stress based on a history of psychosocial stress and call for further exploration of psychosocial models.

Psychosocial Models

Psychosocial models of perinatal depression are located along a continuum of theoretical perspectives, varying in the degree to which they focus on psychological factors (e.g. cognitive behavioral), in addition to social factors, most notably social support. As with biological models, all of these models conceptualize pregnancy, labor, delivery, and postpartum-related experiences as potential stressors, inclusive of the psychosocial context. "Stressors are demands made by the internal or external environment that upset balance or homeostasis, thus affecting physical and psychological well-being" (Glanz & Schwartz, 2008, p. 21). The focus is either on the nature and magnitude of general stress, through the experience of life events, usually within the prenatal and/or postpartum context, or specific stress related to parenting or infant temperament.

Stress and Coping Model

As a prominent psychosocial model, the stress and coping model explicates the role of stress and social support (coping resource) in the development of postpartum depression through the meaning of the perinatal experience to the woman (appraisal) and behaviors employed to manage the associated stress (coping strategies), theorized to mediate her reaction to the related stress (Glanz & Schwartz, 2008; Honey, Morgan, & Bennett, 2003). A woman's appraisal of perinatal experiences may vary according to the meaning of specific stressors. For example, delivery-related stress via complications may be appraised as a woman's failure to cope with the subsequent demands of motherhood, parenting-related stress may be appraised as inadequate parenting skills, and life stressors concurrent with the postpartum period contribute additional stress during postpartum adjustment (Terry, Mayocchi, & Hynes, 1996). Thus, the likelihood a woman will develop depression is associated with her coping strategies, coping resources, and the meaning and level of stress experienced (Terry et al., 1996).

Coping strategies are cognitions and behaviors that mediate a woman's efforts to influence the impact of stress on a situation-specific basis (Terry et al., 1996). Problem-focused coping strategies are considered a direct response to stress when it is appraised as controllable, while emotion-focused coping strategies are an indirect response to stress when it is appraised as uncontrollable (Glanz & Schwartz, 2008; Honey et al., 2003). Coping resources, such as social

support and self-esteem, protect against the effect of stress by helping women manage the stress and therefore have an indirect impact on the development of perinatal depression (Glanz & Schwartz, 2008).

Overall, the evidence supports a stress and coping model of perinatal depression, which through vulnerability (prenatal depressive symptoms); childcare related stress (including infant fussiness); maladaptive coping (negative appraisal, emotion-focused coping strategies); and social support, accounts for approximately half of the variance in symptoms (Cutrona & Troutman, 1986; Honey et al., 2003; Terry et al., 1996). However, these findings are not based on diverse samples of women.

A related prospective study among low-income women of color found that prenatal stress was positively associated, and prenatal social support and income were negatively associated with postpartum depression, accounting for 27% of variance in postpartum depression symptoms ($df=83$, $\chi^2=146.31$, Goodness of Fit Index (GFI)=0.91, Root Mean Square Error of Approximation (RMSEA)=0.062) (Ritter et al., 2000). However, there was no interaction between social support and stress, and the relationship between self-esteem and postpartum depression symptoms was fully explained by prenatal depression. While Ritter et al. (2000) found these effects of stress on symptoms consistent across racial/ethnic groups in the study, further investigation of the more complex models exploring the role of specific coping strategies among diverse women is needed to determine their applicability across women. Despite this, these existing studies explicate constructs that may help us evaluate the possibly differential impact or experience of stress as a result of reduced access to resources, discrimination, and oppression related to race, ethnicity, or socioeconomic status (Surkan et al., 2006).

The stress and coping model provides further insight into the complex role of stress in perinatal depression and creates a framework with which we can evaluate the possibly differential impact or experience of stress, as well as how it may interact differently with coping behaviors and resources across groups of women to result in a different experience and presentation of perinatal depression. However, it does not address the aforementioned biological aspects of stress and depression directly. At best, these models address biological causes of postpartum depression indirectly and abstractly through history of depression and/or prenatal depressive symptoms. While it is probable that psychosocial stress interacts with biological factors to impact the individual's experience of stress experienced prenatally, postpartum, and over the life-course, the precise nature of these relationships is unclear in the current literature.

Integration of these distinct perspectives into a more comprehensive bio-psycho-social theory of perinatal depression, with a focus on the role of stress and coping, is the first step towards addressing the primary limitation of each perspective alone. However, the bio-psycho-social theory and stress and coping model, with their collective focus on bio-psycho-social influences in pregnancy and the postpartum, are still limited in their ability to explain racial, ethnic, and socioeconomic group differences in the manifestation of perinatal depression. Risk and protective factors related to the stress and coping model are relevant as experienced over the woman's life-course, and are not limited to the perinatal period (Lu & Halfon, 2003). Research testing the aforementioned models often included history of depression or mental illness as covariates, but lifetime exposure to risk and protective factors was largely overlooked. In addition, research of racial, ethnic, and socioeconomic group differences in the area of disparities in birth outcomes reveals that socioeconomic status alone does not explain group differences in birth outcomes. Specifically, when controlling for socioeconomic status, racial, and ethnic group

differences in birth outcome disparities, most notably infant mortality, remain (Geronimus, 1992; Lu & Halfon, 2003).

Life-course Perspective

To address these limitations, Lu and Halfon (2003) proposed a life-course perspective that integrates two theories of group differences in birth outcomes, helpful in developing our understanding the problem of potential racial and ethnic group differences, including and beyond those associated with socioeconomic status, in the manifestation of perinatal depression. The life-course perspective posits that that bio-psycho-social risk and protective factors influence health through mechanisms of early life (early programming; see also, Barker, 1990) and ongoing experiences over the life span which have a cumulative impact (cumulative pathway; see also, Geronimus, 1992) (Lu & Halfon, 2003). Within this perspective, group differences in health are the result of differential early and ongoing exposure to bio-psycho-social risk factors associated with social disadvantage and inequities that accompany low socioeconomic status, and those specifically associated, or intensified, with racial and ethnic minority status, such as racism and discrimination. Examples of early programming that are relevant to the perinatal depression context include the aforementioned effects of stress and depression in pregnancy (Center of the Developing Child at Harvard University, 2009) and the postpartum (Beck, 1995; Logsdon, Wisner, & Pinto-Foltz, 2006; Sohr-Preston & Scaramella, 2006) on the fetus and infant.

The cumulative pathway component of the life-course perspective focuses on the continued and cumulative effect of the differential experience of social inequality, which is thought to compound with age (Geronimus, 1992). Research testing the cumulative pathway component provides some support for this component, where the health status of black women declined at a rate significantly higher than white women, especially among women of low socioeconomic status (Geronimus, 1996). However, the mechanisms by which differential exposure to bio-psycho-social risk factors result in group differences over the life span are not well understood. The cumulative impact may be the result of HPA deregulation, as described above in the review of the study by Jolley et al. (2007), as the result of chronic or reoccurring exposure to stress resulting from racism and discrimination.

The life-course perspective has several implications for the study of racial, ethnic, and socioeconomic group differences in the construct of perinatal depression. It suggests that socioeconomic status measured over the life-course is a more accurate predictor of perinatal depression than as measured during the perinatal period alone (Lu & Halfon, 2003). We are not fully evaluating the impact of socioeconomic status by focusing on income and employment during pregnancy and the postpartum. In addition, it suggests that socioeconomic status over the life-course is unlikely to fully explain racial and ethnic group differences in the experience and manifestation of perinatal depression. The existing birth outcomes research suggests that higher socioeconomic status over multiple generations may not be as protective for women of color as it is for whites (Foster, Wu, Bracken, Semanya, & Thomas, 2000; Geronimus, 1996). This indicates there may be a distinct effect of life-long coping with racial discrimination on the experience and manifestation of perinatal depression (Geronimus, 1992). For example, women of color may choose to remain in social environments where they are exposed to greater bio-psycho-social risk factors, to avoid exposure to race-based discrimination in other environments, even if their socioeconomic status affords them other options (Mullings et al., 2001). In addition, women of color with higher socioeconomic status may adopt coping behaviors that make them vulnerable to adverse health outcomes. The social constructs of race and ethnicity may increase

life time exposure to race-based discrimination with adverse consequences for health outcomes (Lu & Halfon, 2003).

The life-course perspective is not without its practical limitations. First, measuring socioeconomic status accurately over the life-course requires a longitudinal design, preferably over at least two generations. This requires extensive resources, and time to wait for results, both of which are infrequently available. Second, the precise causal mechanisms that result in group differences in health outcomes are not clear, making it very difficult to focus efforts on specific measures. In addition, it is likely that different health outcomes are associated with different combinations of risk and protective factors, further complicating measurement.

Implications for Future Research

Despite the limitations of the life-course perspective, it is apparent that investigating lifetime exposure to substantiated bio-psycho-social risk and protective factors of perinatal depression, to the extent possible based on research design, will provide greater insight than looking at these factors in the context of pregnancy and the postpartum alone. Key risk and protective factors for further study include stress, coping, social support, and socioeconomic status. Ultimately, the exploration of racial and ethnic group differences in the construct of perinatal depression over the life-course, especially in the context of low socioeconomic status, are critical to our understanding of the construct and its measurement. An integrated theoretical perspective provides us with the tools necessary to evaluate and improve perinatal depression screening and ultimately treatment across diverse populations at risk.

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