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Postpartum Psychosocial and Behavioral Health: A Systematic Review of Self-Administered Scales Validated for Postpartum Women in the United States

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A B S T R A C T

Purpose: Women's poor postpartum psychosocial and behavioral health may negatively affect them and their infants. Validated postpartum screening scales can help to identify problems early, but currently there is limited knowledge in this area. Thus, we conducted a systematic examination of self-administered psychosocial and behavioral scales validated for postpartum women in the United States in the domains of depression, body image, diet, physical activity, smoking, and alcohol use. We examined the characteristics of included scales, their validation samples, and reported psychometric properties.

Method: Nine databases were searched during October 2014 through February 2015. After meeting inclusion/exclusion criteria, article information was extracted independently by two authors, compared, and differences were resolved through discussions.

Results: The final sample included 23 published articles covering 19 scales. Seventeen were in the domain of depression, and one each in physical activity and dietary domains. None was found in the domains of body image, smoking, or alcohol use. The number of scale items varied from 2 to 35. The majority of scales were originally designed for postpartum women, and validated in one or two postpartum studies with samples of predominantly adult women. If reported, scale reliability coefficients were generally 0.80 or greater and validity coefficients of 0.70 or greater. Five depression scales had favorable sensitivity and specificity using standard cutpoints, but only one was tested across adolescent, low-income, and predominantly ethnic minority postpartum populations.

Conclusion: No U.S.-validated postpartum scales were found for body image, smoking, or alcohol use. Most scales had limited validity testing, and validation was in predominantly advantaged samples. Further scale development and testing are recommended.

In the early months after giving birth, women often undergo a health transition as they adapt to the joys and demands of motherhood and infant caregiving (Devine, Bove, & Olson, 2000; Walker & Wilging, 2000). During this transition, some women may confront challenges to their psychosocial health in the form of depression (Gavin et al., 2005; Vesga-Lopez et al., 2008), and a greater percentage may experience various depressive symptoms (Walker, Timmerman, Kim, & Sterling, 2002). Still others may experience body image dissatisfaction as a result of pregnancy and associated weight gain (Gjerdingen et al., 2009b; Walker et al., 2002). Behavioral changes also occur with the transition to new motherhood. Women may have suboptimal behavioral health manifested in a poor-quality diet (Durham, Lovelady, Brouwer, Krause, & Ostbye, 2011a; Fowles & Walker, 2006; George, Hanss-Nuss, Milani, & Freeland-Graves, 2005), sedentary lifestyle (Ainsworth et al., 2013; Durham et al., 2011b; Wilkinson, Huang, Walker, Sterling, & Kim, 2004), and smoking relapse (Park et al., 2009). Although postpartum women consume alcohol less than nonpregnant women (Vesga-Lopez et al., 2008), an estimated 5.6% engage in binge drinking (Laborde & Mair, 2012).

These domains of new mothers' psychosocial (depression and body image) and behavioral health (diet, physical activity, smoking, and alcohol use) are important because of their consequences for both mothers' and infants' health and well-being.

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Postpartum depression affects about 19% of women in the first 3 postpartum months (Gavin et al., 2005), and depressive symptoms may be even more widespread (Walker et al., 2002). Postpartum depression is associated with destabilizing symptoms (Beck & Indman, 2005; Ugarriza, 2002), which can interfere with adequate parenting (Field, 2010; Gress-Smith, Luecken, Lemery-Chalfant, & Howe, 2012; McLearn, Minkovitz, Strobino, Marks, & Hou, 2006), and infant health and development (Gress-Smith et al., 2012; Kahn, Zuckerman, Bauchner, Homer, & Wise, 2002). Similarly, diets high in energy and sedentary lifestyles can contribute to postpartum weight retention or weight gain (Olson, Strawderman, Hinton, & Pearson, 2003; Walker et al., 2004). Parental smoking is linked to poorer child physical health (e.g., asthma) and behavioral problems (Cook & Strachan, 1999; Kahn, et al., 2002) and increases mothers' risk of noncommunicable diseases, such as heart disease and cancer (World Health Organization, 2011). Furthermore, many women who experience unfavorable psychosocial or behavioral health are likely to do so in two or more domains (Walker, Sterling, Guy, & Mahometa, 2013b), thereby compounding potential adverse effects on mothers and infants. Because many of these postpartum psychosocial and behavioral changes are also risk factors for chronic disease (Centers for Disease Control and Prevention, 2012; Ferketich, Schwartzbaum, Frid, & Moeschberger, 2000; Josefsson & Sydsjo, 2007; Stampfer, Hu, Manson, Rimm, & Willett, 2000), the postpartum period is a critical period for prevention-focused assessments and health services. Given the importance of psychosocial and behavioral health of new mothers, psychometrically adequate scales are paramount for research and practice.

For researchers studying the important postpartum health transition, and for health professionals striving to provide holistic health services for new mothers, a comprehensive review and analysis of psychosocial and behavioral assessment scales is essential. Looking comprehensively at such scales aids in selecting from among alternative instruments and in discerning gaps across the domains of the postpartum health transition. Key psychometric aspects of measurement scales are reliability (i.e., the consistency or reproducibility of assessments) and validity (i.e., the accuracy of assessments for the phenomenon of interest; Waltz, Strickland, & Lenz, 2005). When scales are used in screening for presence of a maternal health condition or other clinical concern, such as depression or unhealthy behaviors, the scale attributes of sensitivity and specificity are additionally important (Gordis, 2000). These screening scale attributes ideally should balance detecting those with a condition or concern, while avoiding falsely identifying those without it. Other attributes that may be relevant when applying scales in research and practice include scale length, readability, and cultural suitability of scales for diverse populations (Logsdon & Hutti, 2006; Waltz et al., 2005). For example, in clinical applications brief scales reduce the burden on people completing them and increase their acceptability (e.g., see Dalrymple et al., 2013; Zimmerman & McGlinchey, 2008). These measurement properties, thus, form the core of concerns in reviewing the adequacy of scales related to maternal psychosocial and behavioral health.

Existing reviews and comparisons of psychosocial or behavioral health scales for new mothers have focused almost exclusively on single domains of the postpartum transition, such as postpartum depression (e.g., Gaynes et al., 2005). No reviews to our knowledge have attempted to look more comprehensively and systematically at the scope and psychometric quality of psychosocial and behavioral health scales for postpartum women. Still, several reviews are noteworthy. In the psychosocial realm, one set of reviews focused specifically on measurement of perinatal or postpartum depression and compared psychometric properties of four to eight scales for measuring depressive symptoms or screening for depression (Boyd, Le, & Somberg, 2005; DeRosa & Logsdon, 2006; Gaynes et al., 2005; Jolley & Betrus, 2007; King, 2012; Zubaran, Schumacher, Roxo, & Foresti, 2010). However, many of these reviews do not include recent postpartum validation studies. In the behavioral realm, one review examined scales for physical activity measurement during pregnancy, but it did not include postpartum-specific measures (Evenson, Chasan-Taber, Downs, & Pearce, 2012). Because no review articles were found that covered the larger spectrum of scales for measuring psychosocial and behavioral health among postpartum women, a review with this more comprehensive perspective would advance understanding of the current state of maternal health assessment. (Note, scales dealing with the maternal role [Barkin, Wisner, Bromberger, Beach & Wisniewski, 2010; Fowles & Horowitz, 2006; Matthey, 2011] are outside the scope of this review.)

Finally, in this article we focus specifically on self-administered scales for postpartum women in the U.S. context for several reasons. First, there is evidence that scale attributes, such as sensitivity in accurately measuring postpartum depression, may vary by country (Gibson, McKenzie-McHarg, Shakespeare, Price, & Gray, 2009). Second, there are unique features of the U.S. health care system, such as gaps in postpartum services (Walker, Murphey, & Nichols, 2015), including in some cases a lack of health care providers with whom women feel comfortable discussing postpartum issues such as depression (Walker, Im, & Tyler, 2013a). As a result, postpartum women in the United States often find themselves facing a life transition in which they have limited contact with the health care system for their own health. In response to this gap, we sought to highlight the range of validated, self-administered scales suitable for this life transition. Self-administered scales provide potential measures for assessing where needs are greatest and a means of self-assessment that may be used in clinical and community-based programs and technology-based applications designed for new mothers.

Purpose

The purpose of this systematic review was to determine the scope and psychometric properties of self-administered scales pertinent to the postpartum psychosocial and behavioral health of women in the United States, and, in doing so, to provide a foundation for understanding the state of the science (strengths and gaps) with regard to existing scales for assessment of psychosocial and behavioral health of new mothers. The outcome of this review contributes to identifying areas where further scale development and refinement are needed, and will advance comprehensive psychosocial and behavioral health assessment in future research and practice. This review addressed the following questions.

1. What scales have been validated for study of psychosocial or behavioral health of postpartum women, and what are the descriptive characteristics of these scales (domain, number of items, readability, time to complete, original targeted populations, e.g., low-income women or adolescents, or other scale properties that might affect applicability to postpartum women)?