Weight Concerns and Body Image as Related to Compensatory Behavior among Rural Pregnant Smokers
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Introduction

Weight concerns have been identified as a contributing and maintaining factor in smoking behavior. Additionally, smoking has been identified as a weight-related compensatory behavior, therefore, weight concerns among women who smoke may predict behaviors of other compensatory behaviors. Our objective was to examine the relationship between weight concerns/body image and compensatory behaviors among rural women who smoke during pregnancy.

We hypothesized that greater weight concern/body image dissatisfaction at 1st trimester would predict the following at 3rd trimester (1) greater compensatory behaviors, and (2) less pregnancy weight gain. As part of the Tennessee Intervention for Pregnant Smokers (TIPS), forty pregnant smokers were recruited at a first trimester prenatal health care visit and assessed throughout pregnancy.

Participants completed a battery of measures including the Weight Concern Scale (WCS), Body Image Concern Inventory (BICI), and Eating Attitudes Test-26 (EAT-26), which assesses compensatory behaviors. Weight was assessed using self-report and anthropometric measures gathered at doctors’ visits. VCS and BICI scores were significantly correlated with the EAT-26 scores (p < .01), a multiple regression analysis, demographic variables (i.e., age, income, education). WCS scores and BICI scores were regressed on EAT-26 scores, yielding significant effect (β = .68, F (6, 69) = 7.03, p < .01). However, standardized beta coefficients showed that VCS score (β = .38, p < .05) was the only significant predictor. Thus, greater body image concerns surmounted 1st trimester predicted more engagement in eating disordered behaviors at 3rd trimester among smoking pregnant women. Targeting body image early in pregnancy could counteract the development of potentially harmful weight control behaviors. This may be especially important in rural populations where smoking is highly prevalent and pregnancy outcomes are poor.

Methods

- Participants
  - 44 pregnant women enrolled in the TIPS study
  - Smoking at 1st trimester
  - Primarily Caucasian
  - 20% Married
  - See Table 1 for other demographic information

- Measures
  - Weight Concern Scale (WCS): Question 1: How important is losing weight or maintaining your current weight compared with other personal health concerns?
  - Body Image Concern Inventory (BICI)
  - Compensatory Behaviors: Eating Attitudes Test-26 (EAT-26), which assesses compensatory behaviors. Weight was assessed using self-report and anthropometric measures gathered at doctors’ visits. VCS and BICI scores were significantly correlated with the EAT-26 scores (p < .01), a multiple regression analysis, demographic variables (i.e., age, income, education). WCS scores and BICI scores were regressed on EAT-26 scores, yielding significant effect (β = .68, F (6, 69) = 7.03, p < .01). However, standardized beta coefficients showed that VCS score (β = .38, p < .05) was the only significant predictor.

Results

- Intercorrelations among study variables are shown in Table 2. Weight concerns (r = .40, p < .05) and body image concern (r = .67, p < .01) were significantly associated with engagement in compensatory behaviors.

- To examine Hypothesis One, a regression was conducted to examine the predictive value of weight/body image concern and background factors on compensatory behaviors. Together, weight and body image concerns, education, number of pregnancies, depression, and stress significantly predicted compensatory behaviors at 1st trimester: R² = .50, F (2, 25) = 7.05, p < .01. Each predictor was examined in terms of its relative influence on compensatory behaviors. Overall, body image had the greatest influence on compensatory behaviors (β = .34, p < .01) followed by number of pregnancies (β = .23, p < .05). Paradoxically, weight concerns did not have a significant impact on compensatory behaviors in this model (β = -.03, n.s.).

- To examine Hypothesis Two, a second regression was conducted to assess the predictive value of the same variables on change in BMI from pre-pregnancy to 1st trimester. This regression model was not significant R² = .15, F (4, 19) = 1.26 p > .10. Exploratory analyses were conducted to examine weight concerns between those with greater BMI change (i.e., >.5) to those with low BMI change (i.e., <.5). Independent sample t test revealed significantly less weight concerns among those with greater BMI change (t = 4.59, p < .05) compared to those with low BMI change (t = 4.62, 2D = 1.54, p < .05).

Discussion

- Similar to findings in non-pregnant populations (Ott, 2002), the current study found body image concerns to predict engagement in compensatory behaviors among rural pregnant women. Thus, pregnant women who are most concerned about their body are more likely to engage in unhealthy practices such as purging, laxative abuse, and excessive exercise. Although weight and body image concerns did not predict change in weight, we did find that pregnant women with less weight concern gained more weight over the course of pregnancy than those with greater weight concern. This finding provides some indirect evidence that higher weight concerns may, in fact, influence weight control practice.

- The fact that greater weight concern did not significantly predict greater compensatory practices was somewhat surprising. It may be that the transitions in the body shape have a greater impact on mothers than expected weight gain. Recent research suggests that eating disorders are common in individuals with body dysmorphic disorder (BDD) or those with dieting or impairing concerns with imagined or minor defects in physical appearance (Ruddells, et al., 2000). Further, BDD symptoms have been found to predict smoking in college age women (Sjöqvist, et al., 1998). Together, these findings suggest that future research may aim at better understanding the effects of body change during pregnancy and clinical efforts to prepare methods for bodily changes in addition to weight gain may be worthwhile.

- This preliminary investigation has some limitations but also provides directions for future research. The small sample size limited statistical power so emphasizing the need for future research before definitive conclusions can be drawn. The use of a pre-pregnancy self-report of weight and height was an additional limitation as women did not always accurately report their weight (Meyer, et al., 2008). We intentionally recruited this study to understand future studies may examine differences between women who do not smoke. Future studies may also examine differences in more rural versus more populous areas for further generalization of findings. Consideration may also be given to methods for gaining retrospective accounts of weight and body concerns. Finally, future studies may aim to understand the potential differences between weight concern and body image as well as consider utilization of additional measures of compensatory behavior that more accurately capture DSM-IV TR characteristics of compensatory behaviors.

- To our knowledge, the current study was the first to examine whether weight/body image concerns predict higher engagement in compensatory behaviors among rural pregnant women who smoke. The findings hold strong implications for programs aimed at smoking alone or promotion of optimal health in pregnant women. Specifically, screening for these concerns may allow for identification of individuals that may benefit from appropriate techniques aimed at facilitating success with cessation as well as promoting healthy weight control practices over the course of pregnancy.

Available upon request.

References