



Research Article

Body Mass Index and Weight Loss in Overweight and Obese Korean Women: The Mediating Role of Body Weight Perception



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SUMMARY

Purpose: This study were to assess the relationships among BMI, body weight perception, and efforts to lose weight in a public sample of Korean women who are overweight and obese and to examine the mediating role of body weight perception on the relationship between BMI and weight loss efforts.

Methods: This cross-sectional study used data from the 2008 Korea National Health and Nutrition Examination Survey. The sample was 1,739 Korean women 20 years old or older with body mass index (BMI) ≥ 23 kg/m². Bivariate relationships among variables of interests were assessed. Three separate regressions were used to test the mediating role of body weight perception on the relationship between BMI and weight loss efforts.

Results: BMI and body weight perception were significant correlates of weight loss efforts. BMI was significantly associated with weight perception, but a large proportion of women underestimated their weight. Weight perception partially mediated the relationship between BMI and weight loss efforts in Korean women.

Conclusion: In light of the high prevalence of overweight or obesity and the many health consequences associated with obesity, Korean women should be aware of a healthy body weight and try to achieve that weight. Nursing interventions should consider body weight perception to effectively motivate overweight and obese Korean women to lose weight, as necessary.

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Introduction

Over the past several decades, Korea has experienced rapid economic growth, resulting in unhealthy changes in lifestyle and diet that have led to significant increases in obesity (Yoon et al., 2006). A recently published study using nationally representative data showed that one in two Korean women aged 20 or older is overweight or obese, while more than 60% of women aged 50 or older are considered overweight or obese (Boo & Froelicher, 2012a). Excess weight is a risk factor for numerous chronic conditions, including diabetes mellitus and cardiovascular disease (Must et al., 1999). Weight loss can favorably reduce the risk for such diseases (Hamman et al., 2006; Pi-Sunyer et al., 2007). Therefore, overweight or obese individuals need to be counseled and encouraged to embark on efforts to lose weight.

Research has shown that trying to lose weight is related to the level of overweight (Andreyeva, Long, Henderson, & Grode, 2010;

Bersamin, Hanni, & Winkleby, 2010; Bish et al., 2005; Koo & Park, 2011), but not everyone who is overweight or obese tries to lose weight (Andreyeva et al.; Bersamin et al.; Bish et al.; Koo & Park). A study by Koo and Park showed that only 23.5% of overweight and 17.2% of obese middle-aged Korean women are trying to control weight. This may be an indicator of a low level of readiness for weight loss in overweight or obese individuals. Thus, an important opportunity exists for the success of weight loss interventions. Sociodemographic factors such as age, race, education level, income, and smoking status are also related to trying to lose weight (Anderson, Eyster, Galuska, Brown, & Brownson, 2002; Bersamin et al.; Bish et al.; Lee et al., 2005). Although these factors are useful in deciding where to direct weight loss interventions, they may not be helpful in designing more effective or appropriate weight loss interventions. A better understanding about what motivates overweight or obese individuals to try to lose weight might help in designing more effective weight loss interventions.

Motivation for weight loss in women can include body weight perception, which is the subjective evaluation of one's body weight and is related to weight loss concerns or health behaviors (Clarke, 2002; Putterman & Linden, 2004). Studies from the United States have demonstrated that dissatisfaction with weight is a strong

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predictor of trying to lose weight in women (Anderson et al., 2002; Lemon, Rosal, Zapka, Borg, & Andersen; 2009). Other studies have found complex relationships among body mass index (BMI), weight perception, and weight loss efforts in African Americans (Lee et al., 2005; Wang, Liang, & Chen, 2009). It has been suggested that associations between BMI and weight loss efforts may be mediated by body weight perception (Lee et al.). If such effects exist in the general population of Korean women who are overweight or obese, we can enhance our understanding of the complex relationships among actual weight, weight perception, and weight loss efforts. The finding will also provide insights in designing more effective weight loss interventions for Korean women who are overweight or obese.

However, most previous studies about body weight perception in Korea have generally focused on adolescents or college students in very narrow geographic areas or have examined issues related to eating disorders (Kim, 2012; Kim, Kim, Cho, & Cho, 2008; Lee & Oh, 2004). Relatively little is known about perceived body weight in adult Korean women who are overweight or obese in terms of BMI and trying to lose weight. Previous studies only bivariate analyzed the relationships among them (Kim, Jeong, Kim, & Park, 2004; Koo & Park, 2011). In addition, body weight perception is likely to be influenced by cultural factors so that the evidence from Western countries may not be appropriate for Koreans. Therefore, the purposes of this study are to systematically assess the relationships among BMI, weight perception, and weight loss efforts in a nationally representative sample of Korean women who are overweight or obese and to examine the plausibility of the mediating effect of body weight perception on the relationship between level of obesity and weight loss efforts. Figure 1 shows the conceptual framework of this study. It is hypothesized that (a) women who are overweight or obese are more likely to try losing weight, and (b) excess body weight leads to self-perceived overweight or obesity, which (c) in turn results in the efforts to lose weight (This study does not aim to evaluate the impact of the covariates).

Methods

Study design

This is a cross-sectional secondary data analysis. Data from the 2008 Korea National Health and Nutrition Examination Survey IV (KNHANES IV) by the Korea Centers for Disease Control and Prevention (KCDC) were used. KNHANES IV used a stratified, multi-stage probability sampling design. Details of the sampling design and survey procedures of the original study are provided elsewhere (Boo & Froelicher, 2012a, 2012b).

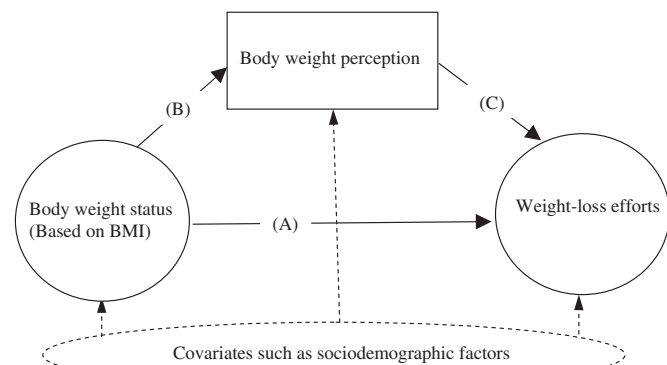


Figure 1. Conceptual framework: Relationship among body weight, body weight perception, and weight-loss efforts. Note. BMI = body mass index. This study does not discuss the impact of the covariates.

Setting and sample

The sample for this study was limited to women who were aged 20 or older, completed the survey, and were overweight or obese (BMI ≥ 23 kg/m²). Women who were pregnant or breast-feeding were excluded because pregnancy or lactation may influence BMI and weight control behavior. Of the 5,374 women participants in the original KNHANES IV survey, 3,814 women were aged 20 or older and completed the survey. Among them, 1,879 women had a BMI greater than 23 kg/m²; 33 of these women were pregnant and 22 women were breast-feeding. Thus, 1,824 women were eligible for the analysis of this study. Among them, those with missing data on demographic characteristics ($n = 77$), on body weight perception ($n = 7$), and on whether they were trying to lose weight or not ($n = 1$) were excluded, yielding a final sample of 1,739 women for the analysis of this study.

Ethical consideration

The original survey, KNHANES IV, was approved by the KCDC Institutional Review Board. Informed consent was obtained from each KNHANES participant. This study used only de-identified existing data with no subject contact. The SPSS data set and the data directory were downloaded directly from the KCDC website (<http://knhanes.cdc.go.kr/>); the downloaded electronic data were protected with a password.

Data collection and measurements

Face-to-face interviews and physical examinations were performed in a mobile examination center or in public health centers. Variables were defined as follows:

Overweight and obesity

Overweight and obesity are based on BMI. BMI, defined as weight in kilograms divided by height in meters squared (kg/m²), was calculated using measured height and weight. Overweight and obesity in this study were defined as $23 \text{ kg/m}^2 \leq \text{BMI} < 25 \text{ kg/m}^2$ and $\text{BMI} \geq 25 \text{ kg/m}^2$, respectively, based on the Asian-Pacific region of the World Health Organization (WHO) data (WHO, 2000).

Body weight perception

Weight perception was assessed using responses to the following survey question: Do you consider yourself now to be very underweight, slightly underweight, about the right weight, overweight, or obese? Because few women reported themselves to be very underweight, those who reported themselves as very underweight or slightly underweight were collapsed into a single category for this study. Thus, the variable used in the analyses of this study included four categories: underweight, about right, overweight, and obese.

Weight loss efforts

Attempts to lose weight were assessed with the following question: During the past 12 months, what have you been trying to do about your body weight? Response choices were "gain weight", "lose weight", "stay the same", and "nothing". These responses were dichotomized for this study: Women who answered that they were trying to lose any amount of weight were identified as those trying to lose weight (yes/no).

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