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Hope Thinking and Past Trauma Mediate the Relationships of Body Mass Index with Perceived Mental Health Treatment Need and Mental Health Treatment Use

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Abstract

Greater body mass is associated with a greater risk of mental health conditions and more frequent mental health treatment use. However, factors that might influence perceived mental health treatment need and mental health treatment use among those of greater weight, including hope thinking, trauma history, and perceived mental health treatment stigma, are not well understood.

Objective—To determine if hope thinking, trauma history, and/or perceived mental health treatment stigma mediate the relationships of BMI with perceived mental health treatment need and mental health treatment use.

Method—Primary care clinic patients in the Midwest United States ($N = 196$; BMI range = 18.5 to 47, mean = 29.26 ± 6.61 , median = 27.90) were recruited to complete a battery of self-report measures that assessed perceived mental health treatment need, mental health treatment use, hope thinking (Trait Hope Scale), trauma history (a single-item traumatic event history screen from the posttraumatic stress disorder module of the Structured Clinical Interview for DSM-IV), and perceived mental health treatment stigma (Stigma Scale for Receiving Psychological Help).

Results—Reduced hope thinking and a greater incidence of past trauma accounted for greater perceived mental health treatment need and greater mental health treatment use among those of greater BMI. BMI was not related to perceived unmet mental health treatment need.

Conclusion—Increased perceived mental health treatment need and mental health treatment use among those of greater BMI may be explained by lower hope thinking and a greater incidence of trauma in this population. Heavier patients may benefit from interventions designed to augment hope and address traumatic histories.

Keywords

Obesity; overweight; mental health; treatment; hope; trauma

Introduction

Although greater body mass is associated with increased psychopathology (e.g., anxiety, depression, binge eating disorder; 1–5), psychosocial treatments for individuals with eating and weight difficulties have demonstrated efficacy (6–8). Thus, mental health treatments may represent appropriate platforms for addressing the needs of those of greater weight. Heavier individuals may use mental health treatment more frequently than healthy-weight individuals (9), but the factors that influence perceived mental health treatment need and mental health treatment use in the overweight and obese population are not well understood.

Several causal factors may contribute to greater perceived mental health treatment need and mental health treatment use among those with weight difficulties. Hope thinking, defined as the perception that one is capable of generating and using pathways to achieve desired goals (10), may be one such underlying factor. Indeed, greater hope thinking is associated with increased positive health practices (e.g., exercise and nutrition behavior; 11) and resistance to illness (12), and decreased anxiety (13) and body mass index (14). Similarly, early life trauma is associated with a greater likelihood of adult obesity (15–17). It is not entirely clear if hope thinking and trauma play causal roles in obesity, however, trauma is associated with binge-eating behavior (18–20), suggesting that trauma may precede obesity, and a number of prospective studies indicate that trauma in childhood predicts obesity later in life (16, 17). The relationships between hope thinking and binge eating behavior or later obesity have not been examined to our knowledge.

Whereas lower hope thinking and/or greater incidence of trauma may increase perceived mental health treatment need and mental health treatment use among those of greater body mass, several factors may reduce the need and use of mental health treatment in this population. It is well established that heavier individuals experience discrimination from a variety of sources (21). Little is known, however, about the perceived stigma associated with receiving mental health treatment among those of greater body mass and whether this perceived stigma may act as a barrier to mental health treatment utilization.

Determining which factors might be responsible for the perceived mental health treatment need and mental health treatment use among those with weight problems is clinically relevant as it would inform the treatment needs of this population. Should greater perceived mental health treatment need and mental health treatment use among those of greater body mass be explained by lower hope thinking and greater trauma incidence, this would suggest the need for interventions designed to boost hope and attend to traumatic histories. Furthermore, should greater perceived mental health treatment stigma among those with weight difficulties contribute to a decrease in perceived mental health treatment need and mental health treatment use, this would indicate that treatment providers should attempt to address potential sources of weight-related bias. The aims of the present study were to determine whether hope thinking, trauma history, and perceived mental health treatment stigma might influence the relationships of body mass index (BMI: kg/m²) with perceived mental health treatment need and mental health treatment use. We evaluated the associations of BMI with perceived mental health treatment need and mental health treatment use, and tested whether hope thinking, trauma history, and/or perceived mental health treatment

stigma mediated these associations. We hypothesized that lower hope thinking and greater trauma incidence among those of greater BMI would account for greater perceived mental health treatment need and mental health treatment use, whereas greater perceived mental health treatment stigma among those of greater BMI would account for a decrease in these outcomes.

Methods

Participants

Participants were 196 adults recruited from the waiting room of a primary care clinic in Sioux Falls, South Dakota. The sample was 72% female with a mean age of 49.37 ($SD = 18.35$) and a median annual income of \$25,000 to \$34,900. Three percent had less than a high school education, 45% completed high school, 22% completed some college, and 30% had a college degree or more. The sample was 87% White, 9% American Indian/Alaska Native, 2% African American/Black, 1% Asian, 1% unknown, and 2% Hispanic/Latino (any race). BMI ranged from 18.5 to 47, with a mean of 29.26 ($SD = 6.61$) and a median of 27.90, and did not differ across gender, income, educational attainment, race, or ethnicity.

Measures

Perceived Mental Treatment Need—Consistent with prior population survey studies of perceived mental health treatment need (e.g., 22–24), participants were first asked whether they experienced a current or past need for mental health treatment (yes or no). Those who reported a current or past need for mental health treatment were then asked whether they refrained from seeking such care (i.e., whether their health treatment need was unmet; yes or no).

Mental Health Treatment Use—This self-report survey, adapted from the National Comorbidity Survey's Health and Service Utilization interview (25), queried previous mental health treatment use across various outpatient modalities. Participants were asked to report the number of times they used each outpatient modality over the past six months. The number of visits across each modality was summed to quantify mental health treatment use. A similar approach has been used with success in several prior studies of primary care patients (e.g., 26–28).

Trait Hope Scale (THS) (29)—Participants responded to 12 items, eight of which assessed dispositional hope (the remaining four items were unscored filler items), rated on an 8-point scale (1 = “definitely false” to 8 = “definitely true”). THS total scores were used in the current analyses, with greater scores representing greater hope thinking (possible range = 8 to 64). The THS demonstrates good internal consistency (coefficient alpha range = .74 to .88) and has been extensively validated in a number of populations, demonstrating positive associations with constructs including optimism, success expectations, self-esteem, self-actualization, and meaning in life (30).

Trauma History—A single-item traumatic event history screen from the posttraumatic stress disorder module of the Structured Clinical Interview for DSM-IV (31) was used to

assess trauma history (see “original SCID trauma screen” in Appendix of 32). This self-report item asked participants if they had ever been exposed to a traumatic event, providing examples of possible traumas. This assessment approach has been shown to detect trauma history in 76% of primary care patients (32) and is recommended when comprehensive trauma screening is not feasible.

Stigma Scale for Receiving Psychological Help (SSRPH) (33)—Participants responded to five items that measured perceived mental health treatment stigma on a four-point scale (0 = “strongly disagree” to 3 = “strongly agree”). Greater scores indicate greater perceived stigma (possible range = 0 to 15). The SSRPH demonstrates acceptable internal consistency (coefficient alpha = .72) and overlaps with negative attitudes toward mental health treatment in primary care patients (e.g., 27, 33).

Procedure

Eighty-two percent of men and 88% of women approached agreed to participate in a study “designed to gain information to improve access to healthcare.” After informed consent was obtained, participants completed questionnaires and a nurse measured participants’ height and weight. Participants were then debriefed and paid \$10 for participation.

Data Analysis

BMI was treated as a continuous variable in all analyses. Although BMI has been conceptualized as a categorical variable by both clinicians and researchers, there is strong rationale that continuous variables be analyzed dimensionally when possible (34).

Mediation analysis tests whether the independent variable is associated with one or more hypothesized mediators and then whether these mediators are, in turn, associated with the dependent variable. Mediated effects are estimated by computing the product of the coefficients representing the relationship between the independent variable and each mediator variable and the relationship between each mediator variable and the dependent variable. In other words, the mediated effects are based on the extent to which the independent variable is related to the mediators and the extent to which the mediators are related to the dependent variable. In recent years, there has been great advancement in methods used to estimate mediated effects. One common method is a computer-intensive approach known as bootstrapping (35).

We were interested in testing whether hope thinking, trauma history, and perceived mental health treatment stigma mediated the associations of BMI with three dependent variables: 1) perceived mental health treatment need; 2) perceived unmet mental health treatment need; and 3) mental health treatment use. This was accomplished by estimating three separate mediation models for each dependent variable. In all analyses, BMI was the independent variable and hope thinking, trauma history, and perceived mental health treatment stigma were the mediator variables, with all mediator variables tested simultaneously. All analyses were conducted in SAS version 9.3 and mediated effects were estimated via bias-corrected bootstrapping (36). As the name implies, bias-corrected bootstrapping adjusts for potential bias in the estimate of the mediated effect (37).

The three mediation path models are depicted in Figures 1 through 3. The relationships between the variables are represented in these models with regression coefficients, which denote the number of measurement units the predicted variable changes when the predictor variable changes one unit. The direct effect, which is the unique association between BMI and the dependent variable not accounted for by the mediator variables, also is represented in each of these models. The estimated mediated effects are reported along with their corresponding bias-corrected 95% confidence intervals in the text below. Bias-corrected 95% confidence intervals that do not include zero indicate statistically significant mediated effects.

Results

Of the sample, 44.9% ($n = 88$) reported a perceived mental health treatment need, and of these, 53.4% ($n = 47$) reported an unmet mental health treatment need. Participants reported a mean of 3.13 mental health outpatient visits ($SD = 9.73$, range = 0 to 60), a mean THS total score of 34.25 ($SD = 5.39$, range = 17 to 47), a 64.8% incidence of trauma ($n = 127$), and mean SSRPH score of 5.36 ($SD = 2.67$, range = 0 to 15).

Those who reported a perceived mental health treatment need had a greater mean BMI ($M = 30.64$, $SD = 7.16$) than those who did not report such a need ($M = 28.14$, $SD = 5.92$; see Figure 1 for regression coefficient representing this relationship). The mediation path model for perceived mental health treatment need is shown in Figure 1. Less hope thinking (point estimate = .009, bias corrected 95% CI [.0003, .03]) and a greater incidence of previous trauma (point estimate = .02, bias corrected 95% CI [.009, .04]) accounted for greater reported perceived mental health treatment need among those with greater BMI. Although BMI was negatively associated with perceived mental health treatment stigma, perceived mental health treatment stigma was not associated with perceived mental health treatment need and was therefore not a significant mediator (point estimate = $-.007$, bias corrected 95% CI [$-.02$, .0002]).

There were no differences in BMI between those reporting a perceived unmet mental health treatment need ($M = 31.03$, $SD = 6.98$) and those not reporting a perceived unmet mental health treatment need ($M = 30.20$, $SD = 7.42$; see Figure 2 for regression coefficient representing this relationship). The mediational analysis (see Figure 2) revealed that hope thinking (point estimate = .004, bias corrected 95% CI [$-.004$, .02]), trauma history (point estimate = .001, bias corrected 95% CI [$-.01$, .02]), and perceived mental health treatment stigma (point estimate = $-.007$, bias corrected 95% CI [$-.03$, .008]) were not mediators of the relationship between BMI and perceived unmet mental health treatment need.

Finally, as shown in Figure 3, BMI was a near-significant predictor of the number of mental health outpatient appointments (means not reported because dependent variable was continuous). Less hope thinking (point estimate = .04, bias corrected 95% CI [.003, .11]) and a higher incidence of previous trauma (point estimate = .05, bias corrected 95% CI [.02, .12]) among those with greater BMI accounted for their greater number of outpatient appointments. However, perceived mental health treatment stigma was not a significant mediator of this relationship (point estimate = .02, bias corrected 95% CI [$-.007$, .09]).

Discussion

Participants reporting a perceived mental health treatment need had greater BMIs than those reporting no such need. The mean BMI for the group expressing a need for mental health treatment was approximately 31 (i.e., grade I obesity), compared to approximately 28 (i.e., overweight) for the group denying such need. BMI was also a near-significant predictor of mental health treatment use. As BMI increased, treatment use frequency increased. This is consistent with past research indicating that individuals with greater body mass use more general health services (9) and have higher rates of psychopathology (1–5).

A novel finding from our study is that hope thinking mediated the relationships of BMI with perceived mental health treatment need and mental health treatment use. We confirmed previous findings that BMI is negatively associated with hope thinking (14), and present the first evidence to our knowledge that decreased hope thinking may explain why those with weight difficulties have an increased perceived mental health treatment need and a greater frequency of mental health treatment use. Future research is needed to determine if hope thinking is associated with BMI because those with lower hope thinking are less likely to engage in positive health practices (11), or if hope thinking is decreased in individuals with greater BMI as a consequence of weight loss difficulty and weight-related stigma. The mediation of the relationships of BMI with perceived mental health treatment need and mental health treatment use by trauma history is also an original finding. The positive association between prior trauma and BMI is consistent with the literature (15–17), and we demonstrate that a higher incidence of trauma may account, at least in part, for increased perceived mental health treatment need and mental health treatment use among those of greater body mass. Of course, one might speculate whether, and to what extent, both hope thinking and past trauma might influence the development of lifestyle behaviors that make one prone to both greater body mass and the need and use of mental health treatment.

BMI was not significantly related to perceived unmet mental health treatment need. Furthermore, those of greater BMI reported *less* stigma associated with receiving mental health treatment. Weight has been previously demonstrated to result in healthcare avoidance because of discomfort associated with weight-related discussions with healthcare providers (38), however, our findings indicate that obesity may not be related to avoidance of mental health care. Further research is needed to confirm this finding.

The present study has a number of limitations. First, the sample was recruited from a single primary care clinic in the U.S. and comprised chiefly of Whites. Second, participants were those who presented for medical appointments and thus more frequent users of medical care may have been overrepresented. Third, although self-report measures are widely-used in mental health treatment research, they tend to underestimate visit frequency (39–41). It is possible that participants sought a greater degree of mental health treatment than they indicated. Finally, the single-item trauma screen, though economical, is an imperfect screening tool. More time-intensive assessment procedures may have more accurately detected trauma history (32).

In sum, our findings suggest that greater BMI associates with both a greater perceived mental health treatment need and a greater frequency of availing oneself of those services and that these relations are mediated by hope thinking and past trauma. Additional studies are needed to further articulate associations among these variables, as well as whether mental health interventions that address hope thinking and past trauma might have beneficial effects on health behaviors to modify body weight. Nevertheless, from a clinical perspective, the present findings suggest that those with weight difficulties may benefit from interventions designed to increase hope (see 42) and ameliorate the impact of prior traumatic events (see 43). At a minimum, clinicians should be mindful that heavier patients may present as less hopeful and with a higher incidence of trauma, and be prepared to make appropriate referrals to mental health treatment professionals when necessary.

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Figure 1.

Mediation path model of the relations between BMI, hope thinking (Trait Hope Scale total score), trauma history (no previous trauma = 0, previous trauma = 1), and perceived mental health treatment stigma (Stigma Scale for Receiving Psychological Help score), and perceived mental health treatment need (no need = 0, need = 1). Reported statistics are regression coefficients. The value in parentheses is the direct effect of BMI. N = 196.

$^{\dagger}p = .05$ $^*p < .05$ $^{**}p < .01$ $^{***}p < .001$

Figure 2.

Mediation path model of the relations between BMI, hope thinking (Trait Hope Scale total score), trauma history (no previous trauma = 0, previous trauma = 1), and perceived mental health treatment stigma (Stigma Scale for Receiving Psychological Help score), and perceived unmet mental health treatment need (no need = 0, need = 1). Reported statistics are regression coefficients. The value in parentheses is in the direct effect of BMI. N = 88. $^{\S}p = .06$ $^{\dagger}p = .05$ $^*p < .05$

Figure 3.

Mediation path model of the relations between BMI, hope thinking (Trait Hope Scale total score), trauma history (no previous trauma = 0, previous trauma = 1), and perceived mental health treatment stigma (Stigma Scale for Receiving Psychological Help score), and mental health treatment use (number of mental health outpatient appointments attended over the past six months). Reported statistics are regression coefficients. The value in parentheses is the direct effect of BMI. N = 196.

$^{\S}p = .06$ $^{\dagger}p = .05$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$.