



Research report

Direct and indirect effects of sociocultural influences on disordered eating among Malaysian male and female university students. A mediation analysis of psychological distress

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ABSTRACT

This study aimed to examine the role of psychological distress in the relationships between sociocultural influences (social pressure to be thin and weight teasing) and disordered eating. Data were collected from 584 university students (59.4% females and 40.6% males), aged 18–24 years old ($M = 20.6$, $SD = 1.4$), selected from four universities in the Klang Valley, Malaysia. Participants completed four standardized questionnaires which measured social pressure to be thin, weight-related teasing, psychological distress and disordered eating. A good fit structural equation modeling (SEM) model was developed for both sexes. For males, the SEM model revealed that sociocultural influences showed an indirect effect on disordered eating through psychological distress. For females, the model showed an indirect effect of sociocultural influences on disordered eating through psychological distress, as well as a direct effect of sociocultural influences on disordered eating. In conclusion, psychological distress mediated the relationships between sociocultural influences and disordered eating in both males and females. Our results suggest that disordered eating intervention programs on reducing psychological distress in university students may be beneficial.

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Introduction

Disordered eating refers to troublesome eating behaviors, such as restrictive dieting, bingeing, or purging, which occur less frequently or are less severe than those required to meet the full criteria for the diagnosis of an eating disorder and it is considered as an early warning sign of an eating disorder (U.S. Department of Health and Human Services, 2005). Numerous studies have shown that these abnormal eating behaviors and eating disorders particularly binge eating and bulimia nervosa frequently occur in Western countries (Hay, Mond, Buttner, & Darby, 2008; Hudson, Hiripi, Pope, & Kessler, 2007) but are beginning to emerge in non-Western countries especially among Asian countries (Cummins, Simmons, & Zane, 2005; Makino, Tsuboi, & Dennerstein, 2004; Mond, Chen, & Kumar, 2010). Disordered eating is more prevalent among female university students than adolescent girls (Erol, Toprak, & Yazici, 2006). However, it is not only a problem for females but males as well. Studies have found that there was an increased in eating problems among males (Dominé, Berchtold, Akré, Michaud, & Suris, 2009; Gadalla, 2008). Therefore, sex

differences in the development of disordered eating should be explored.

University students often claim to experience high level of psychological distress, such as depression, stress and anxiety that can have an adverse effect on their academic performance, emotion, and health (Tosevski, Milovancevic, & Gajic, 2010). University students may also eat more than usual when they experience these unpleasant emotional experiences (Cooley, Toray, Valdez, & Tee, 2007). A significant comorbid relationship between disordered eating and psychological distress has been found in both men and women in various studies (Green, Scott, Cross, et al., 2009; Green, Scott, Hallengren, & Davids, 2009; O'Brien & Vincent, 2003). The associations between psychological distress and disordered eating are likely to be bi-directional (Bradford & Petrie, 2008). Other studies found that these two variables share some similar risk factors, such as low self-esteem, body dissatisfaction (Berg, Frazier, & Sherr, 2009; Cooley et al., 2007; Green, Scott, Cross, et al., 2009; Thomas, Khan, & Abdulrahman, 2010), pressure to be thin, and weight-related teasing (Benas & Gibb, 2008; Benas, Uhrlass, & Gibb, 2010; Gilbert, Crump, Madhere, & Schutz, 2009). Yet, most of these studies focus on women but not men (Santos, Richards, & Bleckley, 2007).

Many hypothesized models emphasized sociocultural influences in the development of disordered eating (Bradford & Petrie,

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2008; Jackson & Chen, 2007; Rodgers, Paxton, & Chabrol, 2009), particularly social pressure to be thin (i.e., pressure from parents, peers, and media) and weigh-related teasing. Sociocultural pressure to be thin has been found to be related to depression and stress and disordered eating among young women (Stice, Maxfield, & Wells, 2003). For example, media influence and feedback about appearance from significant others such as family, friends and partner, have substantial influences on disordered eating (Stice et al., 2003). A 12-month prospective study done by Shomaker and Furman (2009) revealed that social pressure to be thin uniquely contributed to the prediction of disordered eating over time among late adolescents. Pressure to be thin was also found to be directly associated with depression in females but not males (Chaiton et al., 2009). The mediation effect of depression in the relationship between social pressure to be thin and disordered eating has been explored which mainly focused on adolescent girls (Stice, 2001).

Weight-related teasing, for example, by family and friends, is one type of teasing which is very common among young adults, especially overweight young adults (Libbey, Story, Neumark-Sztainer, & Boutelle, 2008). It is believed that frequent weight-related teasing during childhood may contribute to the development of disordered eating (Benas & Gibb, 2008), depression (Roth, Coles, & Heimberg, 2002; Storch et al., 2004), and anxiety later in life (Libbey et al., 2008; Storch et al., 2004). Furthermore, Suisman, Slane, Burt and Klump (2008) hypothesized that weight-related teasing may increase negative emotions, which in turn, may lead to binge eating in girls. Yet, research on the mediation role of psychological distress in the link between weight-related teasing and disordered eating among males is scarce.

Social pressure to be thin and weight-related teasing significantly predicted both psychological distress and disordered eating (Libbey et al., 2008). Hypothesized models on the influences of sociocultural factors in the development of disordered eating were developed mainly for female adolescents in Western societies or developed countries. These models may not necessarily apply to Eastern societies or developing countries (Chen, Gao, & Jackson, 2007). Consequently, this study aimed to examine the role of psychological distress in the relationship between sociocultural influences and disordered eating among university students. It was hypothesized that psychological distress (i.e., depression, anxiety and stress) is one of the possible mediator in the relationship between sociocultural influences and disordered eating among male and female university students.

Methods

Participants

Multistage random sampling approach was deployed whereby four universities in Klang Valley were randomly selected. One faculty was randomly selected for each field of study (i.e., arts, sciences, and technical fields) in each university. All students in the selected faculties were invited to participate in this study. Notifications about the study were made via posters, leaflet distributions and announcement made during lecture time by the lecturers. Participation in this study was fully voluntary and no monetary reimbursement was made. The study participants were sampled based on the sex and fields of study compositions of the actual Malaysian university student population according to the Ministry of Higher Education, Malaysia in the year 2009. A total of 584 university students (59.4% females and 40.6% males), aged between 18 and 24 years ($M = 20.6$, $SD = 1.4$), from different ethnic groups (44.7% Malay, 44.5% Chinese, 9.9% Indian, and .9% others), participated in the present study. Out of 584 participants, 41.3%

were from the arts and social sciences, followed by 31.0% from the sciences, and the remaining 27.7% from the technical field.

Procedures

Data collection was conducted from October to December 2009 by using a Malay language self-administered questionnaire. Prior to data collection, the Perceived Sociocultural Pressure Scale, Perception of Teasing Scale, and Eating Attitudes Test-26 were translated into Malay language except for Depression, Anxiety and Stress Scale-21 as there is a validated Malay version of DASS-21 for Malaysians (Ramli, Mohd Ariff, & Zaini, 2007). The questionnaires were translated into Malay language by two postgraduate students who are fluent in both English and Malay languages and back-translated into English by another bi-lingual student. This English back-translation was compared with the original English version of the scales and appropriate amendments were made.

The Medical Research Ethics Committee, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, and the Ministry of Higher Education Malaysia approved the study protocol. Permission to conduct the survey was granted from each of the selected universities prior to data collection. Participants were given an information sheet explaining the purpose of the study. After providing written consent, participants took approximately 30 min to complete a questionnaire specifically designed for the purpose of the study.

Measures

Perceived Sociocultural Pressure Scale

The Perceived Sociocultural Pressure Scale (PSPS) is an 8-item scales used to assess the perceived pressure to be thin from significant others (family, friends, and partner) and the media (Stice, Ziemba, Margolis, & Flick, 1996). Participants responded on a 5-point Likert scale rating from “strongly disagree (1)”, “disagree (2)”, “neither agree nor disagree (3)”, “agree (4)”, to “strongly agree (5)”. All items were summed up for analyses with higher scores denoting greater pressure to be thin. In the present study, its internal consistency was good for both sexes. The Cronbach's alpha coefficients for females were .92 for the total score, .87 for friends, .89 for family, .93 for partner, and .92 for media subscales. In males, the Cronbach's alpha coefficients for the total score were .95, .87 for friends, .91 for family, .87 for partner, and .88 for media subscales.

Perception of Teasing Scale

The weight-related teasing frequency subscale of the Perception of Teasing Scale (POTS) is a 6-item subscale used to assess the frequency of weight-related teasing on the individual while growing up (Thompson, Cattarin, Fowler, & Fisher, 1995). Each item rated on a 5-point Likert scale ranging from “never (1)”, “seldom (2)”, “sometimes (3)”, “often (4)”, to “very often (5)”. Higher scores indicate greater frequency of teasing during childhood or adolescence. This scale had demonstrated excellent reliability for both females ($\alpha = .95$) and males ($\alpha = .93$) in the present study.

Depression, Anxiety and Stress Scale-21

The Depression, Anxiety and Stress Scale-21 (DASS-21) is a 21-item self-reported instrument designed to measure three negative affect states, namely depression, anxiety, and stress with seven items in each subscale (Lovibond & Lovibond, 1995). Participants were asked to rate the extent to which they experienced each state in the previous week. Items were rated on a 4-point Likert scale

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