Disordered eating attitudes have a long history of clinical and research implications, and have been linked to a multitude of psychological and behavioral consequences, including lower self-esteem and greater anxiety, as well as personality and eating pathologies [1–3]. A more recent line of research has focused on linking eating and weight-related attitudes to biological consequences. The article by Schvey and colleagues [4] in this issue of the Journal looks at eating restraint and weight and shape concerns that are associated with bone mineral density (BMD) and markers of bone turnover in youth. Your first reaction to this article may be “What?” “It’s not only what we eat but also how we think about food and our weight that influences our health?” In a word, yes.

Schvey and colleagues [4] examined the relationships among disordered eating attitudes, which included eating restraint, disinhibition, and concern with eating, weight and shape, and markers of bone health (including BMD, bone formation, resorption, and stress) among overweight adolescents. This study adds to the existing research conducted with older and predominantly female healthy weight samples [5–7] in a number of conceptual and methodological ways, and provides a template for understanding the clinical implications of disordered eating attitudes.

First, Schvey and colleagues [4] included adolescent males and females. Studies targeting both genders are needed, given the tremendous underrepresentation of research focused on understanding eating and weight-related concerns among boys. These studies need to comprehensively elucidate both mean-level and relationship differences between boys and girls. For example, there may be differential mechanisms linking disordered eating attitudes to BMD and markers of bone turnover. Emotional challenges are known to lead to decreased progesterone and estrogen in women, as well as increased cortisol levels, which both directly accelerate bone loss. Furthermore, the menstrual phase may be associated with different cognitive restraint scores [5,8,9], although there is limited evidence in adolescent samples. Future research would benefit from controlling for menstrual phase in addition to puberty status. Drawing from the more general body image literature, the way adolescent males and females cope with weight and shape concerns may also differ [10], and subsequently may explain differences in the mechanisms linked to bone health and stress outcomes. Boys have also reported using different nutritional supplements to help with weight and body changes compared to girls [11]; and these supplements may be indirectly related to biomarkers of bone health. Finally, the motivation for cognitive restraint and weight/shape concerns may be as different for boys and girls as the outcomes. Future research should delve into understanding the differential weight and body-related motives among adolescents, given the reported drives for muscularity and thinness [12]. Without disregarding the possibility for different motives of disordered eating, Schvey and colleagues [4] provide an incomplete picture linking disordered eating attitudes and bone health among girls and boys, and further efforts are needed to attempt to disentangle the likely unique antecedents and mechanisms.

Second, the use of varied measures and methods of assessment in the field of disordered eating attitudes seems to be important. The specific relationships among the disordered eating subdomains and indicators of bone health suggest we need to continue to extricate the conceptual and measurement issues pertaining specifically to cognitive restraint. The majority of research with adult women suggests that cognitive restraint is associated with markers of bone turnover and BMD [5–7]. Schvey et al. [4] found a relationship between cognitive restraint measured by self-report and BMD that did not remain after controlling for a number of sociodemographic variables. Looking closely at the correlations, it is also apparent that the two measures of cognitive restraint (i.e., self-report and interview) demonstrate the lowest intercorrelation, and the self-report measure is unrelated to all other dimensions of disordered eating. So what does this mean? First, as alluded to by prominent researchers in the field, we need to better assess the reliability and validity of these self-report measures. Advanced statistical modeling such as Item-Response Theory and Confirmatory Factor Analytical approaches may be considered to address this issue. It would be important, for example, to look at whether
the measures address the same underlying constructs for boys and girls. Second, we need to pay attention to the long-standing confounding issues with the measurement of restrained eating and disinhibition [13,14]. Although Schvey and colleagues [4] included these dimensions as separate correlates in the models assessing stress and bone health (a strength over a multitude of previous reports), researchers have suggested using a two-factorial classification accounting for the scores for both restraint and the tendency have suggested using a two-factorial classification accounting for the scores for both restraint and the tendency for overeating in a moderator-like relationship [13,14]. Taken together, further measurement considerations and subsequent treatment of the measures is certainly needed in the field of disordered eating attitudes.

At the theoretical level, weight and shape concerns may be more salient stressors linked to cortisol levels and BMD, respectively, compared to cognitive restraint. Whereas Schvey and colleagues [4] did not anticipate this finding, there is some emerging literature with adults [15] and adolescents linking similar constructs to biological markers of stress and immune function. This area of research is important, and provides a contextual picture that body-related stress is uniquely linked to possible indicators of longer term physiological health risks. Future longitudinal research should test the implicated directional relationships among these constructs, whereby weight and shape concerns lead to higher levels of cortisol, which leads to disturbed bone health. The use of theory-driven approaches would further improve this area of research and the clinical applications. Furthermore, the identification of potential mediators and moderators of the relationship between disordered eating attitudes and physiological outcomes needs to be driven by conceptual and theoretical perspectives. Logical variables of interest in this capacity would include lifestyle behaviors such as physical activity, dietary habits, and substance use, to name but a few.

Finally, the study’s focus on severely overweight youth is novel, contributes uniquely to the literature, yet imposes a controversial yet necessary practical debate. Although there is no discounting the detrimental mental and physical health outcomes related to cognitive restraint among healthy weight and underweight individuals, overweight youth would likely benefit from some level of eating restraint to promote a healthy weight. In fact, actual obesity, independent of perceptions of weight status, provides a rational motivation for eating restraint [17]. Among the population of obese youth in the Schvey et al. study [4], the mean scores on all disordered eating measures were very low, suggesting that the bigger issue may be helping these obese youth become aware of their weight and the associated health implications. Weight misperception may be becoming more prevalent as the obesity rates continue to rise—suggesting youth may not consciously restrict their food intake or avoid certain foods because they do not realize their weight is a health risk. In a recent study in London, UK, more than a quarter of the adolescents sampled were unaware of their excess weight [18]. In a sample of Canadian youth [19], the misperception of weight among overweight girls and boys was greater among those who had become conditioned to the obesogenic environment in their close proximity (i.e., having parents and friends who were also overweight). With the prevalence of obesity showing no signs of decline, helping adolescents recognize their weight-related risks is an important first step in educating them on healthy eating restraint cognitions and behaviors. A treatment-seeking sample similar to Schvey and colleagues [4] would be an excellent target for obesity intervention. Therefore, we need to reach a consensus on what constitutes healthy restrictive eating and then we need to advance research and practice focused on developing new measures to assess this healthy restraint in addition to furthering the efforts targeting disordered eating attitudes. The antecedents, mechanisms, and outcomes associated with healthy and disordered eating attitudes then need to be identified.

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References


