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Appetite 42 (2004) 241–247

Appetite

www.elsevier.com/locate/appet

Research Report

Validity of dietary restraint among 5- to 9-year old girls

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Received 3 July 2003; revised 14 November 2003; accepted 14 November 2003

Abstract

Dietary restraint is defined as the cognitive tendency to restrict intake and is often accompanied by the breakdown of restraint, referred to as disinhibition, leading to overeating and overweight in adults. Given recent evidence suggesting that dietary restraint and disinhibition are emerging as early as middle childhood, this study examined the validity of the restraint construct as measured in girls between the ages of 5 and 9. Dietary restraint was assessed longitudinally by questionnaire and validity was established by correlating restraint with measures previously reported to be related to restraint including weight concerns, body esteem, self-reported dieting, and measures of dietary intake when girls were ages 5, 7, and 9. Participants were 153 girls from predominately middle class, and exclusively non-Hispanic white families living in central Pennsylvania. Correlational data were used to assess relationships between dietary restraint and weight concerns, body esteem, dietary intake, and dieting. Results from this study indicate that there is evidence for the validity of the dietary restraint construct among girls by age 9. Specifically, dietary restraint was highly and positively associated with body mass index, weight concerns and body dissatisfaction and negatively correlated with dietary intake, findings similar to those reported in the adult literature.

Keywords: Dietary restraint; Validity; Children

Introduction

The construct of dietary restraint was originally defined as the cognitive tendency to restrict intake as a means of maintaining or losing body weight (Herman & Polivy, 1975), and among adolescents and adults, tends to be highly related to dieting behavior, body dissatisfaction, and weight concerns (Killen et al., 1996; Polivy & Herman, 1985; Stice & Whitenton, 2002; Wardle, 1987). Initially, dietary restraint was believed to emerge during adolescence as a consequence of the normative weight gain associated with puberty (Striegel-Moore, Silberstein, & Rodin, 1986). This weight gain was hypothesized to cause girls to become more dissatisfied with their bodies and engage in more frequent and extreme weight control measures (Attie & Brooks-Gunn, 1989; Levine, 1987). However, there is now evidence that dietary restraint and disinhibition are emerging even earlier; and it appears that maladaptive eating attitudes and behaviors may begin to emerge in girls as early as age 5 (Carper, Fisher, & Birch, 2000; Cutting, Fisher, Grimm-Thomas, & Birch, 1999). Understanding how and when dietary restraint is manifest in young girls is critical because dietary restraint may place children at risk for subsequent disordered eating (Killen et al., 1994; Marchi & Cohen, 1990; Stice, 2001; Stice & Whitenton, 2002). Because studies assessing the construct of dietary restraint during childhood are limited, the aim of this research is to explore the validity of dietary restraint, as measured in girls between the ages of 5 and 9.

When dietary restraint was first introduced as a construct, the terms ‘restraint’ and ‘dieting’ were often used interchangeably (Herman & Polivy, 1984; Polivy & Herman, 1985) and both terms implied a focus on self-imposed caloric deprivation. More recently, distinctions between restraint and dieting have been made with restraint reflecting the intent to restrict intake, while dieting represents the active use of weight control strategies to restrict intake. This distinction implies that at any given time, not all restrained eaters are currently dieting (Lowe, Foster, Kerzhnerman, Swain, & Waddes, 2001). However, Van Strien and colleagues state that a restraint scale is only

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0195-6663/$ - see front matter © 2003 Elsevier Ltd. All rights reserved.
doi:10.1016/j.appet.2003.11.007

valid "if a score reflects the degree to which an individual eats less then he or she actually would like to eat." (Van Strien, Fritjers, Bergers, & Defares, 1986) Therefore, consistent with the majority of literature and for purposes of this research the terms 'restrained eater' and 'dieter' will be used interchangeably (Herman & Polivy, 1984).

In children, understanding how the constructs of dietary restraint and dieting are interpreted can be particularly problematic. For example, it seems likely that reports indicating that as many as 60% of adolescent girls are currently dieting (Centers for Disease Control and Prevention, 2000) may overestimate dieting prevalence, because self-reported dieting may not indicate actual reduction in intake but may reflect the intent to lose weight. A study by Neumark-Sztainer and Story (1998) indicated that adolescents viewed dieting as an umbrella term for many behaviors aimed at weight control, including physical activity. In research evaluating the degree to which adolescents report and adopt weight control behaviors, 44% of adolescent females reported dieting on the previous day yet only 8.6% of the food records reflected dieting (Nichter, Ritenbaugh, Nichter, Vuckovic, & Aickin, 1995). Similarly, Field, Wolf, Herzog, Cheung, and Colditz (1993) found that self-reported frequent dieting in preadolescence and young adolescent girls was more indicative of extreme concern with weight than of actual restriction of reported intake. However, in this same study, Field and colleagues also found that by late adolescence, dieters were reporting significantly less energy intake than their non-dieting peers, but this may simply reflect greater under-reporting by restrained eaters as often seen in the adult literature.

To investigate the validity of the restraint construct associations between restraint and measures that are related to restraint among children, adolescents, and adults were examined, including: body dissatisfaction, weight concerns, and reported dieting practices. For example in a study of 9-year-olds, Hill and colleagues validated children's reports of dietary restraint by noting a significant relationship between restraint and body shape dissatisfaction (Hill, Draper, & Stack, 1994). Among adults and adolescents, numerous studies have also identified links between body dissatisfaction and restraint (Cooley & Toray, 2001; Stice, 2001; Stice, Mazotti, Krebs, & Martin, 1998; Wertheim, Koerner, & Paxton, 2001) dieting practices and restraint (Cooley & Toray, 2001; Killen et al., 1996, 1994; Leon, Fulkerson, Perry, Keel, & Klump, 1999; Patton, Johnson-Sabine, Wood, Mann, & Wakeling, 1990) and weight concerns and restraint (Heatherton, Nichols, Mahamedi, & Keel, 1995; Killen et al., 1994; Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002). Evidence for the validity of restraint among young girls would be reflected in a similar pattern of relationships among restraint, weight concerns, body dissatisfaction, and dieting practices as previously observed among these constructs in women and adolescent girls, that is, restraint should be positively related to body dissatisfaction, weight concerns, reports of dieting attempts and practices.

While the data in children are limited, studies relating dietary restraint to various measures of food intake have revealed modest predictive validity. For example, Hill and colleagues (1994) found that in a sample of 35 9-year old school children, high levels of restraint were inversely related to reported energy intake. However, similar to adult samples (Bingham, Cassidy, & Cole, 1995; Black, Jebb, Bingham, Runswick, & Poppitt, 1995; MacDiarmid & Blundell, 1997), high levels of restraint in children may be related to under-reporting, but not to actual restrictions in intake, with restrained individuals being more likely to under-report their intake. The reasons for under-reporting in highly restrained adults are unknown, however, many speculate that under-reporting may be a result of self-deception, rather than a means of deception, or that those who intend to diet may actually make attempts at dieting during the study period; regardless of the reasons for under-reporting, it is pervasive; one recent study estimated the prevalence of under-reporting between 18 and 31% (MacDiarmid & Blundell, 1998). It is also possible that girls are reporting their intentions to restrict intake rather than their actual intakes. In the present study, the availability of weighed food intake measures should shed light on the extent to which relationships between restraint and reported intake are attributable to reporting bias or whether they reflect actual relationships between restraint and intake.

Methods

Participants

Families were recruited from central Pennsylvania for participation in a longitudinal study of the 'health and development of young girls from age 5 to 9 years' using flyers and newspaper advertisements. Families with age-eligible female children within a 5-county radius also received letters inviting them to participate in the study. At entry into the study, participants included 197 5-year old girls (mean age 5.4 ± 0.3) and their parents, of whom 192 families were reassessed 2 years later when girls were 7-years old (mean age 7.3 ± 0.3). A third assessment with 183 families was done 2 years later, 4 years after the initial assessment, when girls were 9 years old (mean age 9.3 ± 0.3).

The present study includes a sample of 153 non-Hispanic White girls with complete data on all measures pertaining to this study. The 153 families that were included in the analysis did not differ from the dropped cases in terms of family income ($F = 0.87$, $p = 0.35$), mothers' education level ($F = 0.09$, $p = 0.76$), fathers' education level ($F = 1.75$, $p = 0.19$) or mean body mass index ($F = 2.11$, $p = 0.14$) across the 4-year period. All procedures were