

Research report

Chocolate craving among children: Implications for disordered eating patterns

Fiona Cartwright^a, Werner G.K. Stritzke^{a,*}, Kevin Durkin^b,
Stephen Houghton^c, Valerie Burke^d, Lawrie J. Beilin^d

^a*School of Psychology, University of Western Australia, Crawley, WA 6009, Australia*

^b*Department of Psychology, University of Strathclyde, United Kingdom*

^c*Graduate School of Education, University of Western Australia, Australia*

^d*School of Medicine and Pharmacology, University of Western Australia, Australia*

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Abstract

The aim was to test the validity of a multidimensional model of chocolate craving among children, and to examine if the dimensions underlying the model predict consumption and eating disordered symptoms. Participants were 602 children (53% female) aged 11, 12, and 13 from 11 schools in Western Australia. Measures included the Orientation to Chocolate Questionnaire (OCQ) designed to assess three components of chocolate craving (approach, avoidance, and guilt), questions assessing body image dissatisfaction and dieting, and body mass index (BMI). Using structural equation modeling, results confirmed that chocolate craving among children is best conceptualized as a three-factor model (approach, avoidance, guilt). The underlying dimensions were differentially associated with self-reported chocolate consumption and indicators of disordered eating patterns. After controlling for BMI and gender, chocolate-related guilt was strongly associated with greater body dissatisfaction and dieting, and avoidance inclinations were also associated with dieting. Chocolate-related guilt was higher in girls than in boys. Results suggest that children experience chocolate craving as a multidimensional phenomenon reflecting some ambivalence. A gender difference in chocolate-related guilt appears to emerge in childhood, potentially contributing to a greater risk for girls to develop exaggerated concerns about body shape and weight.

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Introduction

Chocolate is a frequently and intensely craved food among women, and to a lesser extent among men (Hill & Heaton-Brown, 1994; Weingarten & Elston, 1991). Yet, no published studies have examined chocolate craving in children. Research with adults suggests that chocolate craving comprises multiple facets with distinct properties, some of which are associated with disordered eating patterns (Benton, Greenfield, & Morgan, 1998). The aim of this study was to examine chocolate craving among children and to determine if different aspects of chocolate craving may be early indicators of risk for eating

disordered symptoms such as dietary restraint and dissatisfaction with body weight and shape.

Dimensions of chocolate craving

Approach and avoidance inclinations: Historically, chocolate craving has been defined as an intense desire for chocolate (e.g. Pelchat, 1997; Weingarten & Elston, 1990). This arbitrarily restricts craving to the 'intense' end of the continuum of all possible experiences of craving, even though a weak desire is experienced as a craving by many (Kozlowski, Mann, Wilkinson, & Poulos, 1989), and vigilance for even small changes in craving along its entire continuum of intensity is a prominent feature of interventions for appetitive disorders (West, 2006). More recently, craving has been conceptualized as varying in intensity

*Corresponding author.

E-mail address: werner@psy.uwa.edu.au (W.G.K. Stritzke).

along two primary dimensions, where craving is a net action disposition determined by the relative strength of inclinations to consume a substance and inclinations to *not* consume a substance, both of which may or may not be activated in parallel (McEvoy, Stritzke, French, Lang, & Ketterman, 2004; Wiers, Houben, Smulders, Conrod, & Jones, 2006). When approach and avoidance inclinations are activated simultaneously they generate a state of ambivalence or internal conflict in the individual, which can manifest in both subjective and physiological responses to chocolate (Rodríguez, Fernández, Cepeda-Benito, & Vila, 2005). Difficulty in resisting consumption is a key feature of extreme food craving (Gendall, Joyce, & Sullivan, 1997) and can lead to overconsumption and bingeing. For example, self-identified chocolate addicts consumed almost four times the weekly quantity of non-addict controls and scored higher than controls on measures of eating disordered symptoms including dissatisfaction with body shape, with almost one third also meeting the criteria for Binge Eating Disorder (Hetherington & MacDairmid, 1993; MacDairmid & Hetherington, 1995). To the extent that avoidance inclinations fail to counter excessive approach inclinations and inhibit or reduce consumption to within socially acceptable and healthy levels individuals may experience some guilt associated with their chocolate consumption.

Guilt: Guilt is evoked when a personally relevant standard is violated (Kugler & Jones, 1992). Thus, failure to activate and act upon avoidance inclinations to regulate chocolate consumption, despite awareness of its unhealthy nutritional content, constitutes such a transgression. Self-described “chocolate addicts” reported stronger feelings of guilt than “non-addict” controls after eating chocolate, although “non-addicts” also reported an increase in guilt (MacDairmid & Hetherington, 1995; see also Macht & Dettmer, 2006). However, the “addicts” also reported experiencing guilt *prior* to consumption, which was then exacerbated afterwards. This suggests that, unlike avoidance inclinations, guilt is not necessarily instrumental in curbing consumption, but is a concomitant of consumption in individuals prepared to disregard personally relevant negative aspects of chocolate consumption.

Guilt, along with approach inclinations, has consistently emerged as a separate dimension in factor-analytic studies of chocolate craving in adults (Benton et al., 1998; Cramer & Hartleib, 2001). Guilt about chocolate consumption, but not approach inclinations, was associated with severity of disordered eating (Cramer & Hartleib, 2001) and with self-induced vomiting (Benton et al., 1998), and both dimensions were associated with bingeing (Benton et al., 1998). In these studies, however, avoidance inclinations were not examined. One aim of the present study was to test the validity of a model comprising all three dimensions implicated in chocolate craving (i.e., approach, avoidance, and guilt). Given chocolate consumption is particularly popular among children and aspects of chocolate craving have been linked to eating disorders in adults, the present

study also sought to examine the relationship between dimensions of chocolate craving and disordered eating patterns in children.

Chocolate consumption in childhood

Although children prefer chocolate over less sweet foods (Birch, Fisher, & Grimm-Thomas, 1999), it represents only 1.4% of their daily caloric intake (Seligson, Krummel, & Apgar, 1994). There is, however, evidence that parental attempts to restrict their children’s consumption of chocolate may have the reverse (or ‘rebound’) effect (Fisher & Birch, 1999). Similarly, children whose parents attempted to control their general food intake consumed more chocolate and reported higher levels of body dissatisfaction than children of parents who did not exercise such control (Brown & Ogden, 2004). Adult binge eaters have attributed their lack of food-related self control to parental control in their childhood (Puhl & Schwartz, 2003). In short, the failure to meet parental or societal expectations that chocolate ‘should’ be avoided could well be the catalyst for increased consumption, the emergence of associated guilt, and the subsequent development of dysfunctional eating attitudes and behaviors.

By age 10, virtually all children have the capacity to internalize the concept of guilt (Shorr & McLelland, 1998). Hence, children of this age could be expected to experience some guilt in relation to their chocolate consumption. The assessment of children’s chocolate craving with respect to the three underlying dimensions of guilt, approach inclinations, and avoidance inclinations may prove useful for identifying early indicators of eating-related problems.

The present study

The study had four aims. First, we tested the validity of a multidimensional model of chocolate craving in children by comparing three models. The first model assumed craving to be a unidimensional construct, where approach, avoidance, and guilt are all indicators of the same underlying construct. The second was a two-factor model, which distinguished between approach and avoidance, but assumed that guilt would be subsumed within the avoidance factor. That is, while previous findings with adults identified guilt as a dimension of chocolate craving distinct from approach inclinations (Benton et al., 1998; Cramer & Hartleib, 2001), it is possible that guilt and avoidance load on the same factor if the negative affect associated with guilt serves to enhance the same strategic goal of wanting to avoid chocolate consumption. Alternatively, guilt may load on a separate factor if it reflects the negative affect associated with ignoring or overriding the strategic goal of avoiding chocolate, in which case a three-factor model should provide the best fit.

The second aim was to examine the association between chocolate craving and consumption. Based on an ambivalence perspective, we expected that approach and avoidance

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