



Dietary restraint and self-discrepancy in male university students



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ABSTRACT

Self-discrepancy describes the distance between an ideal and the actual self. Research suggests that self-discrepancy and dietary restraint are related, causing a significant impact on the person's well-being. However, this relationship has been mostly reported in female and mixed populations. In order to further explore dietary behaviors and their relations to self-discrepancy and well-being-related variables in men, a survey was applied to a non-probabilistic sample of 119 male students from five Chilean state universities (mean age = 21.8, SD = 2.75). The questionnaire included the Revised Restraint Scale (RRS) with the subscales weight fluctuations (WF) and diet concern (DC), the Satisfaction with Life Scale (SWLS), the Satisfaction with Food-Related Life Scale (SWFL), the Nutrition Interest Scale (NIS), and the Self-discrepancy Index (SDI). Questions were asked about socio-demographic characteristics, eating and drinking habits, and approximate weight and height. A cluster analysis applied to the Z-scores of the RRS classified the following typologies: Group 1 (22.7%), men *concerned about weight fluctuations*; Group 2 (37.0%), men *concerned about diet and weight fluctuations*; Group 3 (40.3%), *unconcerned about diet and weight fluctuations*. The typologies differed in their SDI score, restriction on pastry consumption and reported body mass index (BMI). Students with higher DC and WF scores had a higher BMI, and tended to report high self-discrepancy not only on a physical level, but also on social, emotional, economic and personal levels. This study contributes to the literature on subjective well-being, dietary restraint and self-discrepancy in men from non-clinical samples.

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1. Introduction

The transition from high school to university entails significant changes in the student's lifestyle, including eating behaviors. An increase in weight and fat is expected during this transition (Deliens et al., 2013; Provencher et al., 2009), but the students, particularly those who gain considerable weight, may experience this as a significant stressor (Schnettler et al., 2013).

The Self-Discrepancy Theory (Higgins, 1987) asserts that individuals compare their self to an ideal self and when a discrepancy exists between the two, negative states arise (Vartanian, 2012). Body image, the mental representation of the size and shape of the body (Camargo et al., 2010), tends to be a cause for self-discrepancy (Vartanian, 2012). The assessment of the real and the ideal body involves a complex relationship between cognitions, emotions and behaviors, self-esteem, identity, and social and cultural norms (Camargo et al., 2010; Toro-Alfonso et al., 2012a; Toro-Alfonso et al., 2012b). When the actual body does not match the ideal, the individual may act upon those negative states and try to diminish the discrepancy, sometimes in unhealthy ways (Schnettler et al., 2013).

One set of behaviors that may result from physical discrepancy is dietary restraint, the intentional and sustained restriction of food intake to maintain or lose weight (Ogden, 1994). A chronic tendency to restrict food intake comes, paradoxically, with episodes of binge eating (Herman & Polivy, 1980), and despite efforts, restrained eaters do not

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eat less than those unrestrained, and are even more likely to have a higher body mass index (BMI) (Masuda et al., 2015), be overweight (Provencher et al., 2009), and have a higher risk of developing disordered eating behaviors (Altamirano et al., 2011).

Research on disordered eating behaviors has focused on female populations (Silva, 2010; Silva & Urzúa-Morales, 2010). While women are more prone to body dissatisfaction and disordered eating behaviors, studies from North and Latin America show that these problems have risen among men in the last decades (Gempeler, 2006; Masuda et al., 2015), i.e. body dissatisfaction has been reported to rise from approximately 15% to over 40% among men in the last three decades (Toro-Alfonso et al., 2012a). Moreover, disordered eating is known to have similar underlying factors in both genders (Mak & Lai, 2012; Schnettler et al., 2014), such as emotional dysfunctions and affect dysregulation, interpersonal problems, depression, and concern and dissatisfaction with weight or some aspect or part of the body, often as a result of media-idealized images (Ambwani et al., 2014; Toro-Alfonso et al., 2012b; Valls & Chabrol, 2014).

Strauman et al. (1991) stressed that the psychological roots of dissatisfaction with one's appearance and maladaptive eating behaviors are likely to include generalized structural self-discrepancies. It can then be hypothesized that disordered eating, including dietary restriction, relates to other self-discrepancies besides the body, such as the aforementioned factors of emotional functioning, social relationships and the assessment of the self as a whole.

Men seem to experience disordered eating and physical discrepancy significantly less than women (Camargo et al., 2010; Míguez et al., 2011), but they are also aware of their body and their level of satisfaction with it (Toro-Alfonso et al., 2012a). Besides, some of their body concerns are unlike those that women report, such as the distinction between dissatisfaction with fat mass and dissatisfaction with muscle mass (Minnich et al., 2014; Valls & Chabrol, 2014). For women, the ideal is to be thin; men may want to be skinnier yet thicker, i.e. have musculature coupled with low body fat (Gempeler, 2006; Magallares, 2013; Toro-Alfonso et al., 2012b; Vartanian, 2012).

Studies in male athletes in Puerto Rico (Toro-Alfonso et al., 2012b) and Brazil (Fortes et al., 2015), in male gay populations in France (Valls & Chabrol, 2014) and across Latin American (Toro-Alfonso et al., 2012a), and in undergraduate students in Spain (Magallares, 2013), suggest self-discrepancy in men on a personal level: adherence to the traditional model of masculinity (Toro-Alfonso et al., 2012a) relates to body dissatisfaction and indicators of dietary problems. This model, consistently found in Latin American countries (Toro-Alfonso et al., 2012b), considers dominance of men over women and other men; it implies a social demand for men to show physical strength, dominance, and disconnection from emotions to "prove" they are men. Despite this association with strength, complying with social expectations regarding their identity makes men vulnerable and puts them at risk of developing physical and psychological problems, i.e. in the health domain (Courtenay, 2000) even the choices of how and what to eat (e.g. red meat) are intended to assert masculinity (Rothgerber, 2013). Nonetheless, when masculinity and dietary concerns are associated, they are seen as a sign of personal deficit and lack of masculinity. This masculinity bias (Reas & Stedal, 2015; Yu et al., 2015) is one of the reasons men at risk of or with eating disorders rarely seek professional help (Courtenay, 2000; Toro-Alfonso et al., 2012a).

Research on dietary restraint in female and mixed samples points out that dietary behavior and physical self-discrepancy are likely to co-exist, with a subsequent impact on well-being. (Halliwell & Dittmar, 2006; Polivy & Pliner, 2015; Strauman et al., 1991; Vartanian, 2012). One component of well-being considered in this impact is life satisfaction, the assessment people make of their own life, globally or by domains (Diener et al., 1985). The individuals' assessment of their food-related behaviors (Grunert et al., 2007), known as satisfaction with food-related life, also becomes relevant when approaching dietary behavior and self-discrepancies. Studies have linked dietary restraint

and weight issues with poor psychological health (Bentley et al., 2015; Schnettler et al., 2014), low psychological well-being (Tomba et al., 2014), and low levels of satisfaction with life and food-related life (Schnettler et al., 2013; Schnettler et al., 2014; Schnettler et al., 2015; Remick et al., 2009).

It is less clear whether self-discrepancies, other than physical ones, are involved in dietary restraint and decrease well-being. Furthermore, fewer studies focus on male subjects only (Gempeler, 2006; Toro-Alfonso et al., 2012a; Toro-Alfonso et al., 2012b), thus the particularities of dietary concerns in men have been less reported. Consequently, the aims of this study were to distinguish and characterize typologies of male university students based on dietary restraint, satisfaction with life and their food-related life, self-discrepancy, eating habits and nutrition interest.

2. Method

2.1. Sample

The convenience sample comprised 119 male undergraduate students (mean age = 21.8, SD = 2.75) from five state universities in different geographical areas of Chile. The Ethics Committee of the Universidad de La Frontera approved the study. The questionnaire was pretested with 30 undergraduate students from said university with similar characteristics as the sample and no changes were required in the instrument. The questionnaire was administered through an online survey program (*QuestionPro Inc*) in March and May 2014. All participants were volunteers and signed informed consent statements before responding.

2.2. Instruments

The questionnaire included the following scales:

The *Revised Restraint Scale* (RRS; Herman & Mack, 1975; Herman & Polivy, 1980): a 10-item scale that assesses Diet concern (DC), the tendency of a person to restrain their food intake and the fear to gain weight, and Weight fluctuations (WF). The scores provide a measure of chronic food restriction and allow classifying individuals into chronic dieters and non-dieters, usually using the median of the scores. The Spanish version used in this study was proposed by Schnettler et al. (2014), with the same factor structure as the original English version, although the two dimensions group seven of the ten original items. Cronbach's α for the overall scale was 0.76, for the DC subscale $\alpha = 0.68$ and for the WF subscale $\alpha = 0.71$. To evaluate the psychometric properties of the RRS, a confirmatory factor analysis (CFA) was used, with LISREL 8.8. The parameters were estimated by robust maximum likelihood. A CFA model fits reasonably well if the goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) are greater than 0.90, and if the root mean square error of approximation (RMSEA) is lower than 0.08 (Lévy & Varela, 2006). The CFA performed with the seven items of the RRS meant that the bifactorial structure could be validated with an acceptable goodness-of-fit (RMSEA = 0.075, GFI = 0.92, AGFI = 0.91).

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985) and The *Satisfaction with Food-related Life* (SWFL; Grunert et al., 2007). The SWLS consists of five items to evaluate overall cognitive judgments about a person's own life. Similarly, The SWFL consists of five items to assess the person's food-related life. In the present study, the SWLS and SWFL scales presented adequate levels of internal consistency (Cronbach's α : 0.863 and 0.821, respectively) and a single factor for all the items (explained variance: 66.35% and 59.31%, respectively).

The *Nutrition Interest Scale* (Desai & Ratneshwar, 2003): a five-item measure of a person's concern about the consumption of a specific type of food based on its nutritional value. Item 5 is not nutrition-related ("I exercise"). Cronbach's α in the original study was 0.82. In this study, the NIS comprised one factor that explained 64.78% of the variance, and Cronbach's α was 0.81.

The *Self-Discrepancy Index* (Dittmar et al., 1996; Halliwell & Dittmar, 2006): a 7-item scale that measures the participant's assessment of the difference between his actual and ideal self. Participants were presented with the sentence "I want to be..." and rated each of the following six dimensions according to the degree of improvement they considered was needed, ranging from "As I am" to "Much better than I am": 1. Intellectually: one's intelligence and mental capacities. 2. Physically: divided in one item for attractiveness -beauty, looks- and one for performance -weight and capacity for sports-. 3. Socially: the quality of the participant's relations with friends and family. 4. Personally: the individual's character, qualities and abilities; 5. Emotionally: emotions and feelings experienced or ideally to be experienced; and 6. Economically: money and finance-related status and prestige. A global score (global self-discrepancy) is also derived from the responses of the seven items. In this study, the SDI scale's $\alpha = 0.85$, and the one-factor structure including all items explains 53.14% of the variance.

Spanish-language versions of these scales, except for the NIS, were used in this study, having shown good levels of internal reliability in Chile (Schnettler et al., 2013, 2014; Schnettler et al., 2015; Silva, 2010; Silva & Urzúa-Morales, 2010). Two bilingual translators translated the NIS from English to Spanish, and a third bilingual translator back-translated the Spanish version into English. The differences found were resolved by discussion, with all the translators arriving at agreed final versions of the NIS.

Students were also asked about the frequency of consumption of nine food groups categorized by the National Statistics Institute in the *Surveys of Family Budgets*. They were asked about intake restriction of certain foods, drinks and condiments, and their reasons to do so; their place of residence during the semester and with whom they live; gender, occupation and education level of the head of the household; and their estimated weight and height, in order to obtain their BMI (kg/m^2).

2.3. Statistical analyses

To distinguish student types by dietary restraint, a cluster analysis (hierarchical conglomerates) was used, with linkage by Ward's method and the squared Euclidian distance as the measure of similarity between objects. This analysis was applied to the Z-scores resulting from the factor analysis of the RRS scale. The number of groups was obtained by the percentage change of the recomposed conglomeration coefficients. To describe the segments, Pearson's Chi Square test was applied to the discrete variables and a one way analysis of variance for the continuous variables. The continuous variables in which the Levene's statistic indicated homogeneous variances and for which the analysis of variance resulted in significant differences were subjected to Tukey's multiple comparisons test. The continuous variables with non-homogeneous variances and for which the analysis of variance resulted in significant differences were subjected to Dunnett's T3 Multiple Comparisons test. These results were analyzed using the SPSS v. 16.0 software for Windows in Spanish.

3. Results

3.1. Sample description

The average BMI of the sample was $24.07 \text{ kg}/\text{m}^2$ ($SD = 3.3$) and 69.7% were in the normal weight range. The average SWLS score was 21.36 ($SD = 4.9$) and the SWFL score was 19.80 ($SD = 4.8$), from a possible maximum score of 30. The average SDI score was 1.94 ($SD = 0.69$) from a possible maximum score of 5. The average INS score was 13.32 ($SD = 4.7$) from a 4-item possible maximum score of 24, while the fifth item, "I exercise", had an average score of 3.8 ($SD = 1.46$) from a possible maximum of 6. Most students reported exercising "sometimes" (30.3%) and "almost always" (18.5%). Lastly, the average RRS score was 12.10 ($SD = 3.64$) from a possible maximum of 45.

The majority reported eating bread (69.7%), coffee, sugar and tea (59.7%) and soft drinks and juices (47.9%) on a daily basis; meat (59.7%), dairy and eggs (47.9%), oils and butter (37.0%), fruit (46.2%), vegetables (40.3%) cereals and pastas (57.1%) 2–3 times a week; and fish and other seafood (51.1%) occasionally. Most of the participants report not restricting sugar (52.9%), fat and fried foods (55.5%), salt (59.7%), coffee (58.8%), pastry (68.1%), cereals and pasta (92.4%) or red meat (91.6). Over half of the sample report restriction of alcohol either due to health problems (6.7%), to prevent disease (10.9%) or because they dislike it (23.5%).

3.2. Typologies of male students

Three typologies of male students were categorized: Group 1, Concerned about weight fluctuations (22.7%); Group 2, Concerned about diet and weight fluctuations (37.0%); Group 3, Unconcerned about diet and weight fluctuations (40.3%). These types differed significantly in z-scores of the RSS components Diet Concern and Weight Fluctuations ($p \leq 0.001$), and in their reported BMI ($p \leq 0.05$) and NIS score ($p \leq 0.001$); in their SDI scores on the physical level regarding weight and sports, as well as the social, the personal and economic levels ($p \leq 0.05$); the physical dimension regarding beauty and attractiveness and the emotional dimension ($p \leq 0.001$); and in the total score of the SDI ($p \leq 0.001$). In terms of types of food that they tend to restrict, each group only differed in the consumption restriction of pastries ($p \leq 0.005$), possibly due to this type of food's high sugar and caloric content.

Group 2 had the highest score on Weight Fluctuations, similar to Group 1, but significantly higher than Group 3. Similarly, Group 2 had the highest score on Diet Concern, significantly higher than the score of Groups 1 and 3 (Table 1).

Letters in horizontal orientation indicate statically significant differences according to Dunnett's T3 Comparison test ($p \leq 0.001$), for non-homogeneous variables.

Regarding the BMI, Group 2 had the highest score, similar to Group 1, but significantly higher than Group 3. Group 2 had a NIS score significantly higher than the other types (Table 2).

For the Self-Discrepancy Index, a higher score means a higher self-discrepancy, and Group 2 had the highest scores in all dimensions and in the global assessment. Group 2's scores on the physical level regarding attractiveness, on a personal level, on an emotional level, and the overall score for this scale were significantly higher than for the rest of the groups. Group 2's scores were significantly higher than Group 3 on the physical level regarding weight and sports, on a social level and on economical level. The scores on these last three dimensions showed no significant differences in Groups 2 and 3 (Table 3).

In terms of consumption restriction of pastries, Group 1 had a higher proportion of students who reported restricting due to health problems (11.1%). Group 2 had a significant proportion of students who reported restricting this kind of food to prevent diseases (31.8%), and Group 3 comprised a significant proportion of students who reported not restricting pastry consumption (81.2%) (Table 4).

According to the RRS scores and median, 66.7% of students in Group 1 can be categorized as chronic dieters; in Group 2, this figure reaches 100%. On the contrary, in Group 3, 91.7% of students may be considered non-dieters.

Table 1

Z score averages of groups obtained from cluster analysis, male students of state universities in Chile, May 2014.

Component	Group 1 (n = 27)	Group 2 (n = 44)	Group 3 (n = 48)	F	P-value
Weight fluctuations	0.546 a	0.711 a	-0.959 b	99.493	0.000**
Diet Concern	-0.601 b	0.989 a	-0.568 b	80.020	0.000**

** Significant at 1%.

Table 2

Average BMI and NIS average scores from cluster analysis, male students of state universities in Chile, May 2014.

Component	Group 1 (n = 27)	Group 2 (n = 44)	Group 3 (n = 48)	F	P-value
BMI ¹	24.69 a	25.08 a	22.80 b	6.513	0.002*
Nutrition Interest Scale ¹	11.59 b	15.54 a	12.27 b	8.988	0.000**

*Significant at 5%. **Significant at 1%.

¹ Letters in horizontal orientation indicate statically significant differences according to Tukey Comparison test ($p \leq 0.001$), for non-homogeneous variables.

The types did not differ in their SWLS and SWFL scores. They also did not differ in their frequency of consumption of nine food groups consulted, living conditions (living with or without parents) and exercise frequency; restriction of sugar, salt, fat and fried foods, rice and pastas, and meat; frequency of lunch and dinner and their place of residence, their place of residence (urban–rural), educational level of the head of the household and socio-economic status.

4. Discussion

The three typologies of male university students that were detected showed distinct concerns regarding weight and diet. Nevertheless, the presence of chronic dieters in the groups *concerned about weight fluctuations* (Group 1, 22.7%) and *concerned about diet and weight fluctuations* (Group 2, 37.0%) is remarkable. Therefore, our results support the need to further research eating disorders and dietary restraint in male samples.

It must be noted, however, that the overall sample, and each of the three groups, reported moderate levels of satisfaction with life and food-related life. Nonetheless, this state of well-being coexists with self-discrepancies on several aspects besides the expected one in terms of physical performance and appearance. According to Higgins (1987)'s Self-discrepancy Theory, individuals with eating disorders may be particularly vulnerable to wide discrepancies between actual and ideal selves because of the over-evaluation of physical appearance. In this respect, the significantly higher discrepancy reported by those *concerned about diet and weight fluctuations* (Group 2) on a physical level related to beauty and attractiveness is highlighted, more than this group's discrepancy related to weight and sports, which did not differ from the type *concerned about weight fluctuations* (Group 1). This result is in line with findings by Matthews et al. (2012) in a college students sample analyzed separately by gender, in the sense that, among life domains (e.g., family, friends, etc.), satisfaction with physical appearance was determined to be most strongly related to disordered eating behaviors.

Nevertheless, the analysis of the discrepancy in other dimensions delivers noteworthy results. In this regard, the significantly higher discrepancy on an emotional level (feelings, emotions) must be highlighted in the type *concerned about diet and weight fluctuations* (Group 2). Lavender and Anderson (2010) reported that difficulties in emotion regulation are related with both disordered eating and body

Table 3

Self-discrepancy scores from cluster analysis, male students of state universities in Chile, May 2014.

Component	Group 1 (n = 27)	Group 2 (n = 44)	Group 3 (n = 48)	F	P-value
On a physical level (weight, sports, etc.) ²	2.37 ab	2.75 a	2.27 b	3.468	0.034 *
On a physical level (beauty and attractiveness) ¹	1.44 b	2.16 a	1.54 b	5.594	0.001 **
On a social level (friends, family, etc.) ¹	1.48 ab	2.00 a	1.38 b	6.570	0.002 *
On a personal level (as a person in general) ¹	1.48 b	2.09 a	1.62 b	3.838	0.024 *
On an emotional level (feelings, emotions) ¹	1.30 b	2.18 a	1.50 b	9.969	0.000 **
On an economical level (money, status, etc.) ¹	2.37 ab	2.39 a	1.85 b	4.311	0.016 *
I Want To Be Scale ¹	1.77 b	2.27 a	1.72 b	9.183	0.000 **

*Significant at 5%. **Significant at 1%.

¹ Letters in horizontal orientation indicate statically significant differences according to Dunnett's T3 Comparison test ($p \leq 0.001$), for non-homogeneous variables.² Letters in horizontal orientation indicate statically significant differences according to Tukey Comparison test ($p \leq 0.001$), for non-homogeneous variables.**Table 4**

Eating habits (%) with statistically significant differences in groups of male university students from various regions of Chile obtained by cluster analysis, May 2014.

	Group 1 (n = 27)	Group 2 (n = 44)	Group 3 (n = 48)
Restricted consumption of pastries	P = 0.003		
No restriction	66.7	54.5	81.2
Yes, due to health problems	11.1	2.3	0.0
Yes, to prevent diseases	3.7	31.8	12.5
Yes, I dislike it	18.5	11.4	6.2

dissatisfaction in college men. Another remarkable result in the same group was the significantly higher discrepancy on a personal level, which may be associated to following the traditional model of masculinity in Latin America (Toro-Alfonso et al., 2012a), because dietary concerns are seen as a sign of personal deficit and lack of masculinity (Reas & Stedal, 2015; Yu et al., 2015). Also, the higher discrepancy on an economic level (money, status) in Group 2 aligns with studies indicating that males with eating disorders, while also concerned or dissatisfied with weight and appearance, may continue to place importance on socioeconomic attainment due to male-specific pressures to be financially successful (Tabler & Utz, 2015). In addition, the higher discrepancy on a social level (friends, family) in Group 2 is partially in line with the findings by Bentley et al. (2015) in a sample of both genders, in respect that individuals who report eating disorders have poorer social support. In this regard, some studies suggest that individuals with eating disorders are impaired in other important domains of their lives, such as social relations, reporting significantly lower positive relationships with others (Tomba et al., 2014). Notwithstanding, the results of this study must be further explored in the future, aiming to include female university students for whom it can be hypothesized that dietary restraint may be related to self-discrepancy in the physical dimensions to a higher degree.

Research shows that restraint, as a way of managing weight, is counterproductive, as it is linked to episodes of binge eating and higher weight. In this regard, men in Group 3, *unconcerned with weight and diet* (40.3%), had a lower BMI than Group 1 and 2. This is in line with findings by some authors (Herman & Polivy, 1980; Masuda et al., 2015; Provencher et al., 2009) who point out that those who are concerned with weight and diet, and thus turn to eating restraint behaviors, are more likely to have a higher BMI and be overweight. Specifically, Masuda et al. (2015) explains that there is an association between cognitions about food, weight and body image –such as the ones measured in this study– and the BMI. Their physical self-discrepancy, in terms of weight/sports and attractiveness, was also lower in Group 3, suggesting a smaller distance between the ideal and the actual body. It is also notable that this group was made up almost entirely (91.7%) of non-dieters.

On the contrary, 100% of Group 2, *concerned about diet and weight fluctuations*, classified as chronic dieters. Men in this group showed other characteristics besides DC and WF that relate to dietary restraint: in average, they have the highest BMI and the highest physical and global self-discrepancy in the sample. They report being interested in

nutrition and tend to restrict pastry consumption “due to health problems”. Students in Group 1, *concerned about weight fluctuations*, also share some of these characteristics: WF, a higher BMI compared to those unconcerned, a high physical discrepancy on weight/sports and appearance, and restriction of pastry, “to prevent diseases”. 66.7% of men in Group 1 would classify as chronic dieters, although in general this group reports having a low interest in nutrition, which is in line with the low score on Diet Concern. Indeed, men report less concern about their weight than women (Deliens et al., 2013) and more focus on their body shape (Gempeler, 2006). They also tend to report binge eating instead of restricting (Minnich et al., 2014), and to tend to compensate weight gain or the effects of eating through exercise instead of vomiting (Masuda et al., 2015). The first tendency may explain why there were no students that reported being concerned only about diet, even though there are chronic dieters in the sample. On the other hand, exercise frequency was not significantly different among types.

Gempeler (2006) and Schnettler et al. (2014) make the distinction between successful and unsuccessful dieters. Both restrict their food intake but only the former are able to control their weight, with a low tendency to overeat. In this study, dieters can be found in Groups 1 and 2. Group 2, *concerned with diet and weight fluctuations*, is similar to the group described by Schnettler et al. (2014), made up by male and female undergraduates with high restraint and high tendency toward overeating. Similarly, men in Group 2 had the highest average BMI of the sample, and also showed higher physical and emotional discrepancy; the latter is considered a trait related to binge eating (Gempeler, 2006; Minnich et al., 2014), which may explain weight fluctuations. Masuda et al. (2015) assert that the BMI may be indicative of greater disordered eating cognition, which in turn is associated with greater disordered eating behavior.

However, as it was previously mentioned, Masuda et al. (2015) state that a man's actual size and shape does not appear to predict disordered eating behavior, and instead the focus should be on the ways they think about food and weight, and their body image. As mentioned before, while men in this study reported middle levels of satisfaction with life and food-related life, self-discrepancy was present in all seven levels considered, suggesting the presence of negative affects (Higgins, 1987) toward various aspects of the self.

The dietary restraint in all three groups was not related to the frequency of consumption of foods groups considered in this study, contrary to the results by Ramos et al. (2013) in an adolescent sample. However, there seem to be differences in the intake amount of each type of food, which may explain the higher BMI in Groups 1 and 2. Given that in this study the amount of food consumed was not enquired, this should be approached in future research. Nevertheless, in line with Schnettler et al. (2014), in this study there were differences in both food restriction and in the reasons for such restrictions reported by chronic dieters and non-dieters. In Group 1, a higher proportion of students restricted pastry consumption due to health problems; in Group 2, a significant proportion restricted it to prevent diseases; and in Group 3, most students did not restrict pastry consumption. Schnettler et al. (2014), in a sample of both genders, also found that chronic dieters restricted certain foods due to health problems. This suggested that some students care to avoid eating foods that negatively affect their health, and mainly their weight, and this is supported by the findings in this research. However, the foods reportedly restricted due to health problems in the study by Schnettler et al. (2014) included sugar, pastries, fatty and fried foods, pasta and rice. This may be related to having women in the sample, since women tend to have a greater interest than men in healthy diets (Leblanc et al., 2015).

Limitations of this study include the non-probabilistic nature of the sample and its relatively small size, which does not allow generalization of the results. Also, all data were self-reported, thus responses may be affected by social desirability and recall or response bias. Another limitation of this study is that a measure of body shape perception was not included to complement weight measures. Future research must

take this in consideration, as well as the distinction between fat mass and muscle mass, and the possible differences between ideal self among groups, given that in this study the type of measurement only allowed to account for the distance between ideal and actual self for all groups. It is also not clear from this study whether this fat-muscle distinction would correspond to the physical discrepancy on weight/sports or attractiveness. Another limitation is that the sample did not distinguish alleged subpopulations of men at risk of developing disordered eating behaviors. Lastly, future studies should consider different age groups and life stages in the Chilean and Latin American male population (see Miech et al., 2015; Reas & Stedal, 2015) and their vulnerabilities and strengths when facing body issues and eating habits; they should also seek to explain whether the lower BMI in those unconcerned with weight and diet (Group 3) is a cause or a consequence of this lack of concern.

Altogether, this study points to the relation between dietary restraint and different levels of self-discrepancy in a sample of male undergraduate students. Students with concern over weight, or diet and weight, reported higher self-discrepancy, not only on a physical level, but also on social, emotional and personal levels. Those with higher dietary restraint behaviors (Group 2, *concerned with diet and weight fluctuations*) were more likely to report a high global self-discrepancy. Considering that both dietary restraint (Polivy et al., 2014; Vartanian, 2009) and high self-discrepancy (Higgins, 1987; Strauman et al., 1991) are related to low self-esteem, this type of students may have lower self-esteem and self-confidence. The restraint in young men may be seen as an effort to decrease such self-discrepancy. How people relate to their own body is mediated by individual and social factors that go beyond the physical domain (Camargo et al., 2010; Toro-Alfonso et al., 2012a; Toro-Alfonso et al., 2012b). Indeed, students in Group 2, comprising chronic dieters, presented self-discrepancy, not only physically but also in the social, personal, emotional and economic dimensions. Therefore, future research should further focus on these forms of discrepancy that appear to be related to eating restraint in male students, aiming to prevent physical and psychological problems. In addition, health professionals should take into account the different kinds of self-discrepancies among male chronic dieters in the design of prevention and intervention strategies. This is particularly relevant considering that self-discrepancy is likely to be a risk or causal factor in depression (Kelly et al., 2015) and dietary restraint is linked with poor psychological health and well-being (Bentley et al., 2015; Schnettler et al., 2014).

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Contributors

- Ligia Orellana: recruitment of participants and data collection; conducted literature searches and provided summaries of previous research studies; wrote the first draft of the manuscript.
- Klaus G. Grunert: provided input to drafts of the manuscript; interpretation of the data.
- José Sepúlveda: designed the study and wrote the protocol.
- Germán Lobos: recruitment of participants and data collection.
- Mariana Denegri: designed the study and wrote the protocol; recruitment of participants and data collection.
- Horacio Miranda: statistical analysis.
- Cristian Adasme-Berrios: recruitment of participants and data collection.
- Marcos Mora: recruitment of participants and data collection.
- Soledad Etchebarne: recruitment of participants and data collection.
- Natalia Salinas-Oñate: conducted literature searches and provided summaries of previous research studies; statistical analysis.
- Berta Schnettler: designed the study and wrote the protocol; provided input to drafts of the manuscript; statistical analysis; interpretation of the data.

All authors declare approval of the final manuscript.

Conflict of Interest

All authors declare that they have no conflicts of interest.

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