

Role of Peer Influence and Thin-ideal Internalization on Body Dissatisfaction and Disordered Eating in Mexican Girls

Rol de la Influencia de Pares y de la Interiorización del Ideal de Delgadez sobre la Insatisfacción Corporal y Alimentación No Saludable en Jóvenes Mexicanas

O Papel da Influência de Pares e da Interiorização do Ideal de Delgadeza na Insatisfação Corporal e na Alimentação Não Saudável em Jovens Mexicanas

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Abstract

The aim of this study was to examine the role of peer influence and thin-ideal internalization on body dissatisfaction and disordered eating. The Eating Attitudes Test, the Body Shape Questionnaire and the Questionnaire of Sociocultural Influences on the Aesthetic Body Shape Model were administered to 130 female students, with a mean age of 19.44. The results showed that thin-ideal internalization mediated the relationship between peer influence and body dissatisfaction ($\beta=0.14, p>.05$), and the relationship between peer influence and disordered eating ($\beta=0.09, p>.05$). This study supports the hypothesis that the thin-ideal internalization is an important mediator on body dissatisfaction and disordered eating in Mexican girls.

Keywords: peer influence, thin-ideal internalization, body dissatisfaction, disordered eating, young women.

Resumen

Con el objetivo de examinar el rol de la influencia de pares y de la interiorización del ideal de delgadez sobre la insatisfacción corporal y la alimentación no saludable en una muestra comunitaria, se aplicó el Test de Actitudes Alimentarias, el Cuestionario de Imagen Corporal y el Cuestionario de Influencias del Modelo Estético Corporal a 130 mujeres estudiantes, cuya media de edad fue de 19.44 años. El análisis de datos reveló que la interiorización del ideal de delgadez medió la relación entre la influencia de pares y la insatisfacción corporal ($\beta=0.14, p>.05$), así como la relación entre la influencia de pares y la alimentación no saludable ($\beta=0.09, p>.05$). Este estudio apoya la hipótesis de que la interiorización del ideal de delgadez es un importante mediador sobre la insatisfacción corporal y la alimentación no saludable en jóvenes mexicanas.

Palabras clave: influencia de pares, interiorización del ideal de delgadez, insatisfacción corporal, alimentación no saludable, mujeres jóvenes.

Resumo

Com o objetivo de examinar o papel da influência de pares e da interiorização do ideal de delgadeza na insatisfação corporal e na alimentação não saudável em uma amostra comunitária, aplicou-se o Teste de Atitudes Alimentares, o Questionário de Imagem Corporal e o Questionário de Influências do Modelo Estético Corporal a 130 mulheres estudantes, cuja média de idade foi de 19.44 anos. A análise de dados revelou que a interiorização do ideal de delgadeza mediou a relação entre a influência de pares e a insatisfação corporal ($\beta=0.14, p>.05$), assim como a relação entre a influência de pares e a alimentação não saudável ($\beta=0.09, p>.05$). Este estudo apoia a hipótese de que a interiorização do ideal de delgadeza é um importante mediador na insatisfação corporal e na alimentação não saudável em jovens mexicanas.

Palavras-chave: influência de pares, interiorização do ideal de delgadeza, insatisfação corporal, alimentação não saudável, mulheres jovens.

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DISORDERED EATING behaviors have been reported and described throughout history (Stice, 2001). However, the spiritual motivation often described in the past (Lacey, 1982) contrasts with the desire for thinness currently observed in people with unhealthy eating behaviors, such as dietary restriction, binge eating and some compensatory behaviors. Factors that seem to be involved in the development of *eating disorders* (ED) are now different than in the past (Cooley & Toray, 2001; Tylka & Subich, 2004). Among other factors, the literature identifies the effect of biological, individual, cognitive, behavioral and sociocultural elements. Among these elements, sociocultural influences are considered one of the main factors impacting the internalization of thinness as a model for the ideal body (Toro, 2004). This model is present when a person adopts or accepts the social norms about appearance and engages in behaviors to emulate social ideals (Thompson & Stice, 2001). Stice (2002) performed a meta-analysis in which he reviewed the factors increasing the risk of eating pathologies, and found that the thin-ideal internalization contributes to the presence of body dissatisfaction and eating pathology in samples of adolescents and children. This idea was confirmed in subsequent studies with American and Australian women, among 9 and 30 years old (Clark & Tiggemann, 2006; Krones, Stice, Batres, & Orjada, 2005; Stice, Maxfield, & Wells, 2003).

In the dominant culture, thinness has been exalted to such an extent that a significant number of people, mainly young women and adolescents, have a marked dissatisfaction with their body shape and weight (Espina, Ortego, Ochoa, Yenes, & Alemán, 2001; McCabe & Ricciardelli, 2004; Merino, Pombo, & Godás, 2001). This fact increases the frequency of disordered eating behaviors and the risk of developing an ED, as defined in the Diagnostic and Statistical Manual of Mental Disorders Text Revised (DSM-IV-TR of the APA, 2000).

Among the sociocultural influences increasing the effect of the dominant body model, it is possible to identify family characteristics (Haworth-Hoepfner, 2000; Huon & Walton, 2000; Le Grange, Lock, Loeb, & Nicholls, 2009; Schur, Sanders, & Steiner, 1999; Smolak, Levine, & Schermer, 1999), advertising (Sabiston & Chandler, 2010; Toro, Cervera, & Pérez, 1988; Watson, Wells, & Hudson, 2011), the role of magazine articles (Utter, Neumark-Sztainer, Wall, & Story, 2003), the images presented in media (Groesz, Levine, & Murnen, 2002; Martínez-González et al., 2003; Wertheim, Paxton, Schutz, & Muir, 1997; Yamamiya, Cash, Melnyk, Posavak, & Posavac, 2005) and the effect of peer pressure (Helfert & Warschburger, 2011; Paxton, Schutz, Wertheim, & Muir, 1999; Stice et al., 2003; Van Tergouw, 2011). In relation to peer influence, it has been reported that women, between the ages of 9 and 30, consider their peers as one of the main sources of information about diets and weight control (Clark & Tiggemann, 2008; Desmond, Price, Gray, & O'Connell, 1986; Jones, Vigfusdottir, & Lee, 2004; Sinton & Birch, 2006; Stice et al., 2003). Likewise, it has been reported a stronger influence (Ata, Ludden, & Lally, 2007; McCabe & Ricciardelli, 2001, 2005; Wadden, Brown, Foster, & Linowitz, 1991) of peers in the definition of ideal weight, body shape and popularity for women than for men. Although the effect of peer influence on body dissatisfaction has been documented in women and men of different ages (Clark & Tiggemann, 2006; Dohnt & Tiggemann, 2005; Gerner & Wilson, 2005; Helfert & Warschburger, 2011; Phares, Steinberg, & Thompson, 2004), body dissatisfaction and disordered eating behaviors have a higher prevalence on certain groups, such as adolescents. Additionally, it has been identified the existence of different prevalence rates of disordered eating in different countries. This fact is explained, from the sociocultural model, in terms of different cultural expectations about body size (Austin & Smith, 2008).

Regarding the idea of different cultural expectations about body size, authors such as Chamorro and Flores-Ortiz (2000) have reported that in contrast with the dominant western culture, Mexican culture traditionally idealizes a bigger and curved body shape. In the same line, Mexican culture values more interdependent family relationships, with closer ties to the community (Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002). It has been suggested also that these features function as protective factors against eating disorders (Warren, Gleaves, Cepeda-Benito, Fernández, & Rodríguez-Ruiz, 2005). However, few studies have focused on Mexican-American women (Kuba & Harris, 2001; Lester & Petrie, 1995). For example, Wildes, Emery, and Simons (2001) analyzed the role of ethnicity and culture in the development of unhealthy behaviors and body dissatisfaction through a meta-analysis, which included 35 studies. This analysis revealed that of the 17,781 participants only 138 participants were Hispanic. It should be noted that in these studies the Mexican-American groups are usually listed under the category of Hispanics, which also includes Americans from Mexico, Puerto Rico, Cuba and South America (Santiago-Rivera et al., 2002). In light of these findings, it is recognized that more studies with this population are necessary, particularly, comparative studies focusing on the sociocultural model of body ideal (Bojorquez & Unikel, 2004). Based on these precedents, the aim of this study was to examine the role of peer influence and thin-ideal internalization on body dissatisfaction and disordered eating in a sample of Mexican female university students.

Method

Participants

Participants were 130 female students who were recruited from a public university, from Mexico City's north area. The method of sampling was not probabilistic (convenience sampling).

Participants ranged from 18 to 22 years. All the participants signed an informed consent. A power analysis was conducted to establish the required sample size, (α level=0.05, power=0.95, and a large effect size). This analysis indicated that a minimum sample size of $n=40$ would be adequate to test the hypotheses (Cohen, 1992). The mean age of the total sample was 19.4 ± 1.3 years and the mean of the BMI (Body Mass Index) scores was 24.4 ± 3.8 . The participants in this study have had their menarche at an average age of 11.86 ($SD=1.15$) years.

The college is located in a suburb with a population of ~ 895,524 inhabitants. This suburb is part of the Metropolitan area of Mexico City (Fundación de Estudios Urbanos y Metropolitanos, 2012). The college was located in an urban zone and the participants were urban residents. The college records indicate that participants are part of the Mexican lower-middle class.

Instruments

Informed consent, in which was explained aim, stages and benefits of the study were presented and sign. In this document the anonymity of participants was assured.

The Eating Attitudes Test (EAT-40, Garner & Garfinkel, 1979) is a 40 items self-report test designed to assess anorexic and bulimic symptoms. The EAT-40 may also be useful as a screening instrument to identify current or incipient cases of anorexia nervosa (AN) in populations with high risk of developing the disorder. This instrument evaluates five factors: dietary restraint, bulimia, drive of thinness, food preoccupation and perceived social pressure. For this study, internal consistency was adequate (Cronbach's $\alpha=.83$).

The EAT was validated for the Mexican population by Alvarez-Rayón et al. (2004). It showed adequate levels of internal consistency (Cronbach's $\alpha=0.93$). Additionally, the authors established a cut-off point of 28 with 83% of sensitivity and 91% of specificity. To set the

number of participants who scored above the cut-off point and to enable comparison with published studies in other countries, we used the grading system of 0-3 points. For the following analysis and given the bias in the distribution of each item of the EAT, we used the scoring method of 1-6 points (Mumford, Whitehouse, & Choudry, 1992).

The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) is a self-report questionnaire that presents 34 items measuring dissatisfaction with the weight and body shape. The BSQ consists of two factors: normative body discomfort ($\alpha=.95$), and pathological body discomfort ($\alpha=.94$). For this study, internal consistency was adequate (Cronbach's $\alpha=.97$). The Mexican version of this questionnaire was used. The BSQ was adapted and validated in Mexican population by Vázquez et al. (2011), showing adequate levels of internal consistency (Cronbach's $\alpha=0.98$). For this questionnaire, authors suggested a cut-off point of 110 with 84% of sensitivity and 84% of specificity. The items were rated from 1 to 6.

The Questionnaire of Sociocultural Influences on the Aesthetic Body Shape Model (CIMEC in Spanish, Toro, Salamero, & Martínez, 1994) is a self-report instrument that includes 40 items that identify sociocultural influences related to ED. The CIMEC consists of four subscales: advertising influence, distress because of body image and weight reduction behaviours, influence of social models, and influence of social relations.

The CIMEC was adapted and validated for the Mexican population by Vázquez, Alvarez, and Mancilla (2000), showing adequate levels of internal consistency (Cronbach's $\alpha=0.94$). The original cut-off suggested by the authors is equal or major to 24-25. In this study, the total score of CIMEC and the subscale measuring the influence of social relations (Cronbach's $\alpha=0.63$) were used. The items were rated from

1 to 3. The influence of social relations subscale assesses the influences of friends and peers (e. g. Do you have a friend or peer who practice some kind of physical exercise with the intention of losing weight?). The total score of CIMEC assess the level of thin-ideal internalization. For this study, internal consistency was adequate (Cronbach's $\alpha=.94$).

Body Mass Index (BMI) was calculated dividing the weight of the participants (in kilograms) by their height (in cm, squared). The BMI for the Mexican population (Saucedo-Molina, Ocampo, Mancilla-Díaz, & Gómez-Peresmitré, 2001) is showed in Table 1.

Table 1
Body Mass Index for Mexican Preadolescents and Adolescents

BMI	Classification
< 15	Infra-weight
15 - 18.9	Underweight
19 - 22.9	Normal weight
23 - 27	Overweight
> 27	Obesity

Procedure

The institutional review board at Facultad de Estudios Superiores Iztacala, Universidad Nacional Autónoma de México, approved this research. After participants signed the informed consent, they completed the EAT, BSQ and CIMEC in a single session during their class break (between 10:30 and 11:30 hrs).

The questionnaires were applied in groups of approximately 15 students. The order of application was counterbalanced. In another session (approximately 15 minutes) the anthropometric measures were obtained to estimate the BMI. This was carried out by a physical anthropologist. The authors of this study gave instructions and answered the questions that arose during the application of the questionnaires.

Data Analysis

To test and to establish the influence of mediator variables, the steps suggested by Baron and Kenny (1986) were followed. Three regression equations were estimated: first, regressing the mediator variable (thin-ideal internalization) on the independent variable (peer influence groups); second, regressing the dependent variable (body dissatisfaction or disordered eating) on the independent variable (peer influence groups); and third, regressing the dependent variable (body dissatisfaction or disordered eating) on both the independent variable (peer influence groups) and on the mediator (thin-ideal internalization). *p* values less than .05 were considered statistically significant.

Results

Table 2 shows the mean BMI according to the classification for teens in Mexican population (Saucedo-Molina et al., 2001). Most of the participants showed a BMI corresponding to normal weight. However, it was observed that 37 (28.5%) participants were overweight, 13 (10%)

were obese and only two cases had low weight. The mean BMI of the total sample was 24.4, which corresponds to overweight.

Table 3 shows that an important percentage of students scored equal or above the cut-off point of the questionnaires used in the study sample. There were more cases exceeding the cut-off point for BSQ than for EAT (i.e., BSQ, 18.4%, EAT, 10.8%). This result implies that body dissatisfaction as reported by the BSQ was more frequent than eating disorders measures with the EAT.

Data analysis, presented in Figure 1, revealed that peer influence was significantly related to body dissatisfaction ($\beta=0.25$, $F=9.12$, $p<.01$), peer influence was significantly related to thin-ideal internalization ($\beta=0.44$, $F=31.21$, $p<.001$), and thin-ideal internalization was significantly related to body dissatisfaction ($\beta=0.91$, $F=330$, $p<.001$). When both variables were included in the model (thin-ideal internalization and peer influence), we observed that thin-ideal internalization fully mediated the relationship between peer influence and body dissatisfaction ($\beta=0.14$, $F=5.18$, $p>.05$).

Table 2

Characteristics of the Study Sample According to BMI, Considering the Classification for Mexican Population

Category	BMI Cut-off points	Cases (%)	<i>M (SD)</i>
Infra-weight	< 15	0	0
Underweight	15 - 18.9	2 (1.5)	18.3 (0.3)
Normal weight	19 - 22.9	78 (60)	22.0 (1.5)
Overweight	23 - 27	37 (28.5)	27.0 (1.4)
Obesity	> 27	13 (10)	32.2 (2.0)
Total		130 (100)	24.4 (3.8)

Table 3

Scores According to Cut-off Points BSQ and EAT

BSQ		EAT	
≥ 110 Cases (%)	< 110 Cases (%)	≥ 28 Cases (%)	< 28 Cases (%)
24 (18.4)	106 (81.6)	14 (10.8)	116 (89.2)

Note: The cut-off points used correspond to the adjustments and validations for the Mexican population, $n=130$.

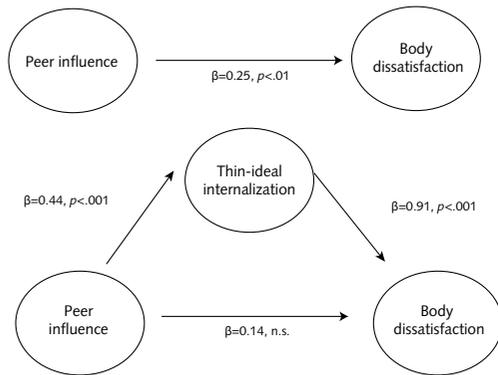


Figure 1. Thin-ideal internalization as a mediator of the relationship between peer influence and body dissatisfaction.

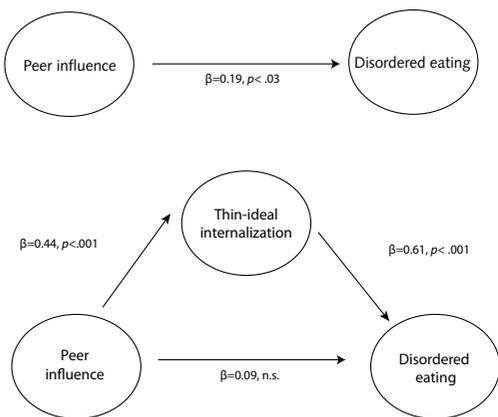


Figure 2. Thin-ideal internalization as a mediator of the relationship between peer influence and symptomatology of eating disordered.

Figure 2 shows that peer influence was significantly related to disordered eating ($\beta=0.19$, $F=5.02$, $p<.03$), peer influence was significantly related to thin-ideal internalization ($\beta=0.44$, $F=31.21$, $p<.001$), and thin-ideal internalization was significantly related to disordered eating ($\beta=0.61$, $F=76.08$, $p<.001$). When both variables were included in the model (thin-ideal internalization and peer influence), we observed that thin-ideal internalization fully mediated the relationship between peer influence and disordered eating ($\beta=0.09$, $F=38.85$, $p>.05$).

Therefore, thin-ideal internalization plays a central role in the relationships between: (a) body dissatisfaction and the influence of the peer group, and (b) symptomatology of eating disorders and body dissatisfaction.

Discussion

The BMI classification of participants in this study corresponded to overweight (28.5%), according to Saucedo-Molina et al. (2001). This result is consistent with the National Survey of Health and Nutrition 2006 (Olaiz-Fernández et al., 2006) which reports a high percentage of the Mexican population as being overweight or obese. These data might indicate deficiencies in the health sector in our country, particularly in the promotion of healthy eating habits and in the detection of weight and eating problems. Because the sample of this study belongs to the health disciplines, they lack of knowledge about weight and eating problems.

Data analysis revealed that an important percentage of participants exceeded the cut-off point of the BSQ and the EAT; the proportion of participants with body dissatisfaction was higher than the proportion of participants with disordered eating behaviors. This result is important because previous findings suggest that body dissatisfaction is a factor of risk for the development of ED. These data are consistent with meta-analytic articles that show that body dissatisfaction is the most common risk factor in eating associated pathology (Sepúlveda, Botella, & León, 2001; Thompson & Stice, 2001). Moreover, the presence of disordered eating and body dissatisfaction, factors that in some cases contribute to the development of ED (Stice, 2001), also is facilitated by the increasing social pressure towards certain standards of weight and body shape. This social pressure can take many forms, such as discrimination against people with overweight or obesity (Mancilla et al., 2004) and thin ideal promoted in the dominant Western culture (McCabe & Ricciardelli, 2004). Additionally, data on body

dissatisfaction and BMI found in this sample support the hypothesis that there is a close relationship between BMI and body dissatisfaction (Low et al., 2003; Thompson et al., 2007). It should be noted that participants identified with body dissatisfaction, disordered eating behaviors, underweight, or overweight were informed about this situation and were referred to specialized clinics after evaluation.

On the other hand, the results of this study are not consistent with those reported by Chamorro and Flores-Ortiz (2000) who indicate that Mexican culture traditionally idealizes a bigger and curved body shape. This difference suggests that sociocultural influences have changed over the time, as it has been reported in other cultures (Miller & Pumariega, 2001). It also supports the hypothesis that contemporary culture, especially with the advent of mass media, transmits models, values and attitudes that contribute to the homogenization of the dominant culture (Toro, 2006). In addition, the results of this study show that thin-ideal internalization is a mediator variable in the relationship between peer influence and body dissatisfaction. In a similar fashion, the results of this study show that this same variable mediates in the relationship of peer influence and disordered eating. This means that peer influences promote the thin-ideal internalization and this fact increases the presence of body dissatisfaction and disordered eating.

The evidence provided by this study supports the hypothesis that states that thin-ideal internalization is a risk factor contributing to body dissatisfaction and eating pathology (Thompson & Stice, 2001). In the same line, the study of Warren et al. (2005) confirms the mediational effect of thin-ideal internalization on the relationship between thinness awareness and body dissatisfaction, being significantly higher in European-American women than in Spanish and Mexico-American women. A similar result was found by Austin and Smith (2008) who, using a sample of high school students in

a city of Guanajuato, Mexico, found that thin-ideal internalization acted as a mediator variable in the relationship between thin ideal awareness and body dissatisfaction, and between thin ideal awareness and some symptoms of ED.

Additionally, the results of this study support previous findings in the literature that demonstrate that peer influences have an important role in the transmission and reinforcement of social messages that promote thin-ideal internalization (Krones et al., 2005; McCabe & Ricciardelli, 2001; Meyer & Gast, 2008; Sinton & Birch, 2006; Stice et al., 2003). This article highlights the importance of peer influence and thin-ideal internalization in the development of body dissatisfaction and disordered eating. This result needs to be considered in the design of future prevention programs.

In sum, this study supports the hypothesis that thin-ideal internalization is an important risk factor that promotes body dissatisfaction and disordered eating. In addition, the study shows that peer influence is a significant social agent in the transmission of ideas in a way that is acceptable at the sociocultural level. Therefore, the findings of this study suggest that more research is necessary to formulate explicatory models regarding the role of these variables in Mexican women samples with ED, as well as, in men samples.

There are limitations to the interpretation of these results. First, the sample of university students in this study limits the generalization of the results to the general population or to women with ED, among other things because of the cultural diversity throughout the national territory of Mexico. Second, this study used self-report questionnaires and the constructs were assessed with a single instrument. In this sense, it is necessary to investigate the relationships explored here in samples belonging to a broader population and to include samples coming from other states and regions of the country. It is necessary also to complement self-reported data with clinical interviews and observations.

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