Social Comparison and Internalization as Mediators between Weight Status and Body Esteem in Lebanese Adolescents

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This study examined the role of social comparison and internalization of social attitude as mediators between weight status and body esteem in male and female high school students. Participants were 426 Lebanese students (M = 17.71, SD = 1.48) who completed self-report questionnaires. Using structural equation modeling (SEM), results revealed that while the same measurement and structural models exhibited good fit for both genders, structural weights were significantly different for the two genders. Further, weight status in females was significantly related to social comparison and internalization of social attitude, which in turn negatively impacted body esteem. For males, social comparison and internalization of social attitude were not significant mediators between weight status and body esteem. These findings indicate the need for school prevention programs that incorporate formative influences and processes such as internalization of societal norms and social comparison in the construction of guidance and counseling strategies.

ملخص

تهدف هذه الدراسة الى التعرف على دور كل من المقارنة الاجتماعية واستبطان الاتجاهات الاجتماعية كمتغيرين وسيطين بين حالة الوزن من جهة والتقدير الذاتي للجسم من جهة ثانية عند طلاب

المرحلة الثانوية في لبنان. تكونت العينة من 426 تلميذاً قاموا بتعبئة استبانة اشتملت على قياسات للوزن والطول والمقارنة الاجتماعية واستبطان الاتجاهات الاجتماعية والتقدير الذاتي للجسم. أظهرت نتائج تحليل النمذجة بالمعادلة البنيوية حسن مطابقة كل من نموذج القياس ونموذج البناء عند الذكور والاناث ولكن مع وجود أوزان بنيوية مختلفة عند الجنسين. كما أظهرت النتائج ايضاً ان المقارنة الاجتماعية واستبطان الاتجاهات الاجتماعية يتوسطان بشكل افضل العلاقة بين حالة الوزن والتقدير الذاتي للجسم عند الاناث منه عند الذكور. يمكن للمربين عامة وللمرشدين المدرسيين خاصة الاستفادة من هذه النتائج لفهم العمليات التي تؤثر سلباً على التقدير الذاتي للجسم وبخاصة عند المراهقات بشكل افضل ولوضع برامج وقائية تأخذ بالاعتبار دور كل من المقارنة الاجتماعية واستبطان الاتجاهات الاجتماعية في تحديد العلاقة بين حالة الوزن والتقدير الذاتي للجسم.

Adolescence may be characterized as a sensitive period for the development of body image. The extensive physical changes experienced at this time intensity awareness related to weight and shape concerns among male and female adolescents (Markey, 2010). Contemporary research suggests that body dissatisfaction has become widely prevalent among adolescent girls and boys (Barker & Galombos, 2003; Cohane & Pope 2001; Jones, 2004). Several studies pointed out that the percentages of boys and girls who aspire to alter their shape or size are estimated to be approximately 30% and 60% respectively (e.g., Levine & Smolak, 2009; Ricciardelly & Mecabe, 2001; Stice & Whitenton, 2002). The desire for thinness in females, and muscularity in males has been accompanied by an increase prevalence of obesity worldwide (Ebbeling, Pawlak, & Ludwig, 2002; Dehghan, Akhtar-Danesh & Merchant, 2005). Overweight adolescents as well as those who think they are overweight are at a higher risk for body dissatisfaction (Presnell, Bearman, & Madeley, 2007). Higher body mass index (BMI) is associated with greater levels of body dissatisfaction among adolescents (Goldfiel, Moore, Henderson, Buchholz, Obeid, & Flament, 2010; Makinen, Puukko-Viertomies, Lindberg, Siimes & Aalberg, 2012). However, this relation between weight status and body dissatisfaction seems to be different for boys and girls. Whereas boys are most dissatisfied when they deviate up or down from the average weight, body dissatisfaction for girls is related to body weight in a linear way such that the thinner is the better (Austin, Haines, & Veugelers, 2009; Presnell Bearman, & Stice, 2004). In addition, research has identified links between body dissatisfaction and maladaptive eating, behaviors, depression, low self-esteem, and

maladaptive body change strategies, (Markey, 2010). Given the widespread prevalence of body dissatisfaction and the rise in obesity statistics, and considering their associated negative consequences on adolescents, it is imperative that researchers explore the factors and processes involved in the construction of body image dissatisfaction.

1- Problem of the study

While there has been considerable attention to factors predicting body dissatisfaction among adolescent girls in Western cultures, much less research has focused on adolescent boys despite the fact that body dissatisfaction levels among them are not particularly low (Cohane, Pope 2001; Presnell, Bearman, & Stice, 2004). Further, studies about body image dissatisfaction among Lebanese youth are both limited and descriptive (e.g., Chakar & Salameh, 2011; Khawaja & Sweid, 2004; Salameh, Barbour, Issa, & Rachidi, 2011; Yehia, et al., 2011). These Lebanese studies clearly indicate that the rates of obesity and overweight are relatively high in the younger Lebanese population and that the desire to be thinner is evident even among normal weight youngsters. In order to address the gap in the literature, this study examined a model of weight status and body dissatisfaction among Lebanese males and female adolescents combining elements from sociocultural and social comparison theories.

Sociocultural theory (Thompson, Heinberg, Altabe, & Tantleff-Dunn (1999) and social comparison theory (Festinger, 1954) have been the two major theoretical frameworks proposed to explain the development of body dissatisfaction (Morrison, Kalin, & Morrison, 2004). These two theories emphasize two primary methods of body image judgments that can lead to body dissatisfaction (Choate, 2005). First, boys and girls compare themselves to sociocultural, unrealistic ideals (i.e., muscular for males and thin for females) promoted in the media, internalize these ideals into their personal belief systems as standards for evaluating their own bodies, and experience body dissatisfaction as a result (e.g., Bessenoff, 2006; Morrison et al., 2004; Miller & Halberstadt, 2005; Knauss, Paxton, Alsaker, 2008; Clay, Vignoles, & Dittmar 2005). Second, adolescents who have internalized the thin or muscular ideals are also likely to engage in self-comparison with others in order to appraise their own body image (e.g. Krcmar, Giles, & Helme, 2008; Pokrajac-Bulian, Ambrosi-Randić, & Kukić, 2008; Lin & Kulik, 2002). Some studies have found that comparing one's appearance with others, particulars with peers, is associated with

higher levels of body dissatisfaction among elementary girls (Vander Wal & Thelen, 2000) and adolescent boys and girls (Jones, 2002).

Sociocultural and social comparison theories as well as prior research studies suggest that body mass, social comparison and internalization influence body image dissatisfaction although the nature of these associations appears to be different for boys and girls. Further, Lawler and Nixon (2010) identified several shortcomings in the existing literature reporting conflicting findings regarding the meditational role of internalization among biological and sociocultural variables, and body dissatisfaction. In addition, Lawler and Nixon (2010) highlighted the need for further research to characterize the moderating role of gender between internalization and body dissatisfaction, and to investigate the contribution of peer influences and body image dissatisfaction.

2- Purpose of the study

The main purpose of the present study was to examine the contribution of weight status, social comparison, and internalization of the thinness ideal to body image dissatisfaction of Lebanese adolescents and to explore how gender moderated these relations. In this study, a conceptual model (depicted in Figures 2a and 2b) is posited. In this model, it was hypothesized that the impact of weight status on body dissatisfaction is both direct (due to negative self-evaluation of one's body) and indirect (mediated through social comparison and internalization). Internalization of the thin ideal was also hypothesized as a mediating factor between social comparison and body dissatisfaction. Further, it was hypothesized that the boys and girls have different associations among weight status, social comparison, internalization, and body dissatisfaction.

3- Methodology

3-1- Design and Participants

A non-experimental, cross sectional design was used and the data analyzed in this study were drawn from a larger data set collected between the years of 2011 and 2013 from a sample of 426 adolescents attending public and private high schools in Lebanon. The researchers recruited a cooperating team of secondary teachers who were attending a formal training program organized at the Lebanese University. Each one of the cooperating teachers was trained to administer the research questionnaire to

a sample of his/her students (20 – 30) from the 3 high school classes after obtaining appropriate consent from students' guardians. The sample included 214 males aged between 15 and 23 years (M = 18.1, SD = 1.53), and 212 females aged between 15 and 21 years (M = 17.32, SD = 1.34). In addition, 376 students came from public schools (88.5%) and 50 students came from private schools (11.5%). The sample was relatively well distributed across different areas in Lebanon: 25.1%, 22.3%, 17.8%, 17.6%, and 17.1% from Greater Beirut, Mount Lebanon, North Lebanon, South Lebanon, and Bekaa respectively.

3-2- Measures

In the current study, weight status was treated as a latent variable measured indirectly through two observed indicators or manifest variables: body mass index and actual weight as rated by participants. Using participants' self-reported measures of weight and height, body mass index was computed using the formula: BMI = weight in kilograms divided by the square of height in meters (kg/m^2). Perceived actual weight was assessed using the Stunkard Figure Rating Scale (Stunkard, Sorensen, & Schlusinger, 1983). This scale consists of 9 silhouette figures for males and females that increase gradually in size from very thin (a value of 1) to very obese (a value of 9). Participants were asked to select the figure that best represents their actual shape.

The construct of body-image has been operationalized in many different ways, including body esteem, body satisfaction, appearance satisfaction, and weight satisfaction (Grogan, 2010). In the current study, body esteem was measured using an adapted version of the Body Esteem Scale for Adolescents and Adults (BESAA) (Mendelson, Mendelson, & White, 2001). This body esteem scale, which contains 23 items, was translated from English to Arabic by two bilingual university professors to ensure the accuracy of the translation. Each one of the 23 items is rated on a 5-point scale ranging from 1 = never to 5 = always. However, item 5 was dropped out from analysis because it was left blank by a large number of respondents. After reviewing its content (I think my appearance would help me get a job), item 5 was judged as culturally irrelevant because the prospect of getting a job is not typical among most high school students in Lebanon. Three subscales were constructed by conceptually grouping together items that tap similar areas in body esteem assessment. The three subscales are: body esteem change (6 items reflecting the desire to change one's body, to look different, and how one thinks others view his/her body),

body esteem feeling (7 items reflecting one's feelings about his/her body), and body esteem figure (8 items reflecting one's overall satisfaction with his/her weight and figure). Higher scores on the scale and subscales indicate lower levels of body dissatisfaction and vice versa. The three subscales were used as manifest or observed indicators of body esteem as a latent variable. A*lpha* for the three subscales were respectively as follows: .66, .80, and .79. These reliability coefficients are relatively impressive given the small number of items in each subscale.

Social comparison as a latent construct was measured through three items as indicators adapted from Thompson et al. (1999). Participants were asked to indicate how often they compared their appearance and looked to others, particularly peers, in social gatherings, and how often they used others as a reference point to judge their weight status. A 5-point scale ranging from 1 = never to 5 = always was used. Higher scores indicate higher engagement in social comparison.

Internalization of the thin ideal was conceptualized as a latent variable measured through two composite indicator variables whose items were adapted from Rodin (1992). The first composite score represents perception of thinness as important for attractiveness and contains four items assessing attitudes toward thinness as related to fitness, attractiveness, look, and male preference. The second composite score represents perception of thinness as important for success and contains four items tapping thinness attitudes related to self-feeling, and to social, romantic, and occupational success. Participants were instructed to rate their degree of agreement on a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree, with higher scores indicating stronger internalization of the thin ideal. Despite the small number of items in each composite, the two composite measures demonstrated reasonable internal consistency coefficients with higher values for females than males (α ranging from .52 to .73).

3-3- Data Analysis

Means and standard deviations, and correlation coefficients were evaluated among observed variables using IBM SPSS Statistics, 20.0. Differences on key variables by sex and age were evaluated using Mann-Whitney test. The asymptotically distribution free (ADF) method for structural equation modeling was used to test the conceptual model with IBM SPSS AMOS, 20.0 software program. The ADF method was used instead of the standard maximum likelihood method due to serious deviation

from multivariate normality in the total and boys samples (Mardia's coefficient = 7.77 for total sample, 14.37 for boys, and .25 for girls) (Hox, & Bechger, 1998).

Following the recommendation of Mueller and Hancock (2008), a two-phase process was implemented for analyzing our model. First, the measurement models (see Fig. 1a and 1b) were analyzed without involving the proposed structural relationships in order to assess how well the latent variables (i.e. weight status, body esteem, social comparison and internalization) were measured by their respective indicators. Second, taking into account any misspecifications identified in the measurement model in the first phase, the hypothesized structural relationships were then added to the "improved" measurement model obtained in phase one and the data were analyzed using the full models (see Fig 2a and 2b). In addition, gender was tested as a variable moderating the hypothesized structural relations among the four constructs using multiple group analysis. Finally, the following indices with recommended cut-off criteria were used to assess the goodness of fit of the models: the chi-square test, the relative chi square (CMIN/DF < 2), the root mean square error of approximation (RMSEA $\leq$ .06) with its associated confidence interval, the Tucker-Lewis Index (TLI $\geq$ .96), the comparative fit index (CFI $\geq$ .95), the adjusted goodness-of-fit index (AGFI $\geq$ .90), and the standardized root mean square residual (SRMR $\leq$ .09) (Mueller & Hancock, 2008). In all analyses, an alpha level of .05 was used for statistical significance.

4- Results

4-1- Descriptive Statistics

Age was dichotomized into less than 18 vs. older than 17 years old in order to examine age differences. ANOVA analysis showed that all sex by age interactions for observed indicators as dependent variables were not significant. Further, Mann-Whitney tests showed no age differences except in BMI (Z = 2.87, p = .004, r = .14) and item1 in social comparison (Z = 2.08, p = .037, r = .10). Older participants (Mdn = 21.84) had higher BMI than younger ones (Mdn = 20.76) but were less likely to compare themselves to others in social gatherings (Mdn = 2 and 3 respectively). However, test results indicated significant sex differences in BMI (Z = 6.86, p = .000, r = .33), perceived actual weight (Z = 3.52, p = .000, r = .17), internalization of the thin ideal as important for attractiveness (Z = 1.96, p = .05, r = .09), body esteem figure (Z = 2.84, p = .004, r = .14), and body

esteem change (Z = 1.96, p = .05, r = .09). It seems that boys were heavier than girls (Mdn = 21.94 and 20.73 respectively), perceived their size as bigger (Mdn = 5 and 4 respectively), and were more strongly internalizing the thin ideal as important for attractiveness (Mdn = 11 and 10 respectively). On the other hand, girls expressed more satisfaction than boys about their weight and figure (Mdn = 30 and 28 respectively) and about how others view their body plus the desire to change it (Mdn = 23 and 22 respectively). Furthermore, boys and girls did not differ on body esteem feeling (Z = .23, p = .82), internalization of the thin ideal as important for success (Z = 1.18, p = .23), and social comparison items ($.048 \leq Z \leq 1.94$, $.052 \leq p \leq .96$).

Pearson correlation coefficients among observed study variables are presented in Table 1. Particularly important, the relationships within the observed indicators for the latent variables of weight status and body esteem were moderately strong, while the relationships within the observed indicators for the latent variables of internalization and social comparison were low-moderate in strength. In addition, girls exhibited stronger and more frequent significant correlations than boys particularly among indicators representing latent variables.

Table 1. *Pearson correlation coefficients and standard deviations among observed study variables for adolescent boys and girls*

Variable	1	2	3	4	5	6	7	8	9	10
1 BMI	--	.632**	-.071	-.025	-.443**	-.297**	-.460**	.169*	.106	.116
2 AWei	.651**	--	-.089	-.034	-.501**	-.376**	-.521**	.183**	.112	.170*
3 Atthin	-.068	-.038	--	-.488**	-.076	-.127	-.149*	.253**	.187**	.231**
4 Sucthi	-.150*	-.136*	.384**	--	-.136*	-.200*	-.230**	.328**	.240**	.314**
5 BE Fig	-.197*	-.188*	.031	-.055	--	.610**	.705**	-.214**	-.229**	-.202*
6 BE Ch	-.073	-.150*	-.060	-.037	.576**	--	.643**	-.411**	-.317**	-.363**
7 BE Fe	-.219*	-.267*	.014	-.013	.621**	.674**	--	-.346**	-.253*	-.317**
8 SC1	-.111	-.097	.160*	.124	-.099	-.280**	-.201**	--	.505**	.621**
9 SC2	-.002	.005	.038	.081	-.036	-.122	-.052	.315**	--	.373**
10 SC3	-.068	.070	.146*	.210**	-.147*	-.294**	.239**	.659**	.249**	--
SD Boys	3.84	1.42	2.93	3.13	5.98	4.40	4.80	1.09	1.37	1.27
SD Girls	2.98	1.60	3.24	3.74	6.22	4.69	5.47	1.32	1.30	1.34

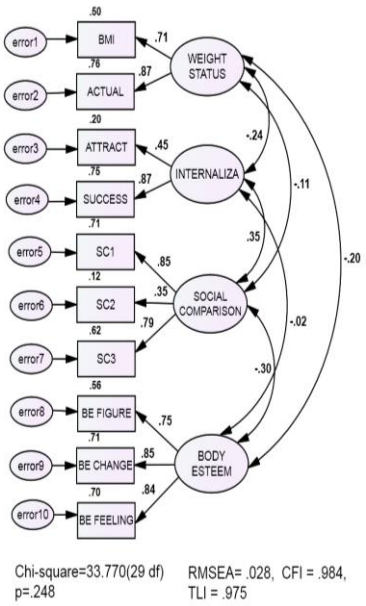
Note. Correlation coefficients for boys (n = 214) are below diagonal; correlation coefficients for girls (n = 212) are above diagonal.

Abbreviations: BMI = body mass index; AWei = perceived actual body size; Atthin = thin as attractive; Sucthi = thin as successful; BE Fig = body esteem figure; BE Ch = body esteem change; BE Fe = body esteem feeling; SC1 =

social comparison item1; SC2 = social comparison item2; SC3 = social comparison item3; SD Boys = standard deviation for boys; SD Girls = standard deviation for girls.
*$p \leq .05$; **$p \leq .01$.

4-2- Measurement Models

The results of the measurement models for boys (M1) and girls (M2) are displayed in Figures 1a and 1b. All factor loadings between indicators and corresponding latent variables were relatively high (80% of the loadings for boys and girls ≥ .71) with relatively low standard error variances (.045 ≤ SE ≤ .079 for girls and .072 ≤ SE ≤ .147 for boys; except for the success measure where SE = .256 and .670 in girls and boys respectively), supporting the construct validity of the latent variable and the reliability of the indicators. In addition, the proportion of explained variance in each indicator was relatively high (80% of R^2 values were ≥ .50), providing evidence of reliability of our measures. Consulting the cut-off criteria recommended by Mueller & Hancock (2008), the non-significant chi square values and the fit indices for both models (the root mean square error of approximation (RMSEA ≤ .06) and the Tucker-Lewis Index (TLI ≥ .96)) indicated that the measurement models were adequate for both girls and boys. There was no need to use any of the modification indices.



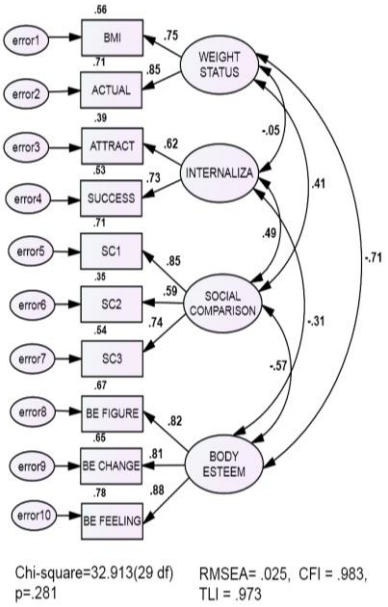
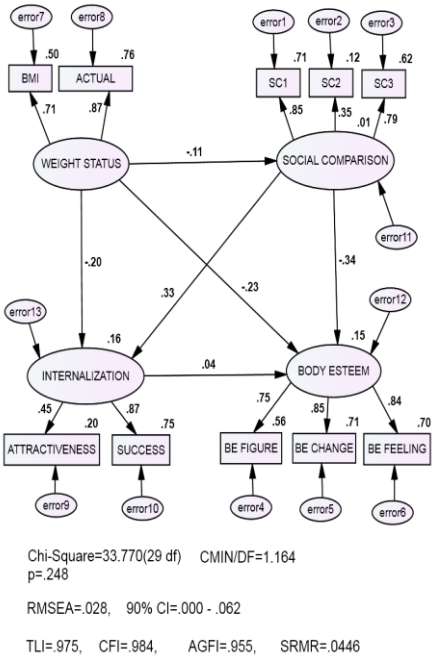


Figure 1a. ***Measurement model (M1) for boys*** **Figure 1b.** ***Measurement model (M2) for girls***

Abbreviations: BMI = body mass index; ACTUAL = perceived actual body size; ATTRCT = thin as attractive; SUCCESS = thin as successful; SC1 = social comparison item1; SC2 = social comparison item2; SC3 = social comparison item3; BE FIGURE = body esteem figure; BE CHANGE = body esteem change; BE FEELING = body esteem feeling; INTERNALIZA = internalization of the thin ideal; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis Index.

4-3- Structural Models

The results of the full models representing combined measurement and structural relations for boys (M3) and girls (M4) are displayed in Figures 2a and 2b. Results of the chi square tests and fit indices indicated that both models for boys (M3) and girls (M4) fit the observed data well (i.e. the non-significant chi-square test, the relative chi square (CMIN/DF < 2), the root mean square error of approximation (RMSEA ≤ .06), the Tucker-Lewis Index (TLI ≥ .96), the comparative fit index (CFI ≥ .95), the adjusted goodness-of-fit index (AGFI ≥ .90), and the standardized root mean square residual (SRMR ≤ .09)). However, the proportion of variances accounted for in the predicted latent variables of social comparison, internalization, and body esteem was much smaller for boys than girls (R^2 = .01, .16, .15; and .17, .32, .64 for boys and girls respectively). Most structural coefficients representing relations among latent variables were significant for boys and girls ($p \leq .05$). The path from social comparison to body esteem in model (M4) for girls was near significance (p = .086), and the paths from weight status to social comparison and from internalization to body esteem in model (M3) for boys were not significant ($p \geq .05$). As can be seen in Figures 3 and 4, the direct effect results showed that weight status was related negatively to internalization and body esteem in both girls and boys, and positively to social comparison in girls (that same path was negative bur not significant for boys). Further, social comparison was related positively to internalization and negatively to body esteem in boys and girls. In turn, internalization related negatively to body esteem in girls only and did not relate to body esteem in boys.



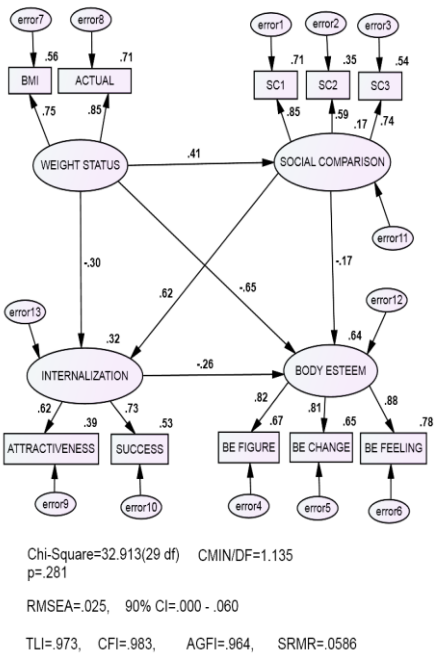


Figure 2a. ***Full model (M3) for boys*** **Figure 2b.** ***Full model (M4) for girls***

Abbreviations: BMI = body mass index; ACTUAL = perceived actual body size; ATTRACTIVENESS = thin as attractive; SUCCESS = thin as successful; SC1 = social comparison item1; SC2 = social comparison item2; SC3 = social comparison item3; BE FIGURE = body esteem figure; BE CHANGE = body esteem change; BE FEELING = body esteem feeling; INTERNALIZATION = internalization of the thin ideal; CMIN/DF = relative chi square; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis Index; CFI = comparative fit index; AGFI = the adjusted goodness-of-fit index; SRMR = the standardized root mean square residual.

The indirect effects of weight status on body esteem mediated by internalization and social comparison were relatively small (standardized indirect coefficients were -.058 for girls and .028 for boys). The indirect effects of weight status on internalization mediated by social comparison were much more substantial for girls than for boys (standardized indirect coefficients were .254 and -.036 respectively). Finally, the indirect effects of social comparison on body esteem mediated by internalization were larger for girls than for boys (standardized indirect coefficients were .158 and .014 respectively).

Upon examining the total effects that involve meditational relations (i.e., direct + indirect effects), the combined effects of weight status on body esteem turned out to be negative for boys and girls but stronger for girls

(standardized total coefficients were -.201 and -.711 respectively). Similarly, the combined effects of social comparison on body esteem came out negative but equally strong for boys and girls (standardized total coefficients were -.328 and -.329 respectively). However, the total effects of weight status on internalization was moderately strong and negative for boys but near zero for girls (standardized total coefficients were -.237 and -.051 respectively).

The results of multiple group analysis indicated that gender was moderating the hypothesized structural relations among the four constructs. Assuming that the measurement model to be true for boys and girls combined, the nested model comparison that assessed the worsening of overall fit due to imposing six constraints on the model (i.e., the six structural pathways are invariant across boys and girls) showed a statistically significant chi-square value of 31.904 ($df = 6$, $p \leq .05$). These results indicate that differences exist in the structural coefficients for boys and girls. Further, after examining the table of critical ratios of differences among all pairs of free parameters, significant sex differences emerged in the structural paths from weight to social comparison and body esteem, and from internalization to body esteem ($p \leq .05$). Sex differences in the remaining three paths from weight to internalization and from social comparison to internalization and body esteem were not significant ($p \geq .05$).

5- Discussion

The present study aimed to explore the contributions of weight status, social comparison and internalization to body esteem on subsequent body esteem of female and male adolescents in Lebanon and to evaluate the meditational role of social comparison and internalization. Another aim of this study was to examine the role of gender as a moderator of the relationships among these variables. The findings make contributions to the mounting literature on body dissatisfaction and body esteem by illuminating risk patterns for boys and girls. The hypothesized relationships between weight status, social comparison, internalization, and body esteem were confirmed for girls more than for boys. Weight status emerged as a strong, direct predictor of body image dissatisfaction highlighting the importance of investigating the unique contributions of biological factors to body image in conjunction with sociocultural and psychological factors. These findings confirm previous research that has found a direct impact of body size to body dissatisfaction and body esteem generated by negative body self-

evaluations (Goldfield et al., 2010; Lawler & Nixon, 2010; Thompson et al., 2007).

In addition, social comparison with others in social gatherings, particularly peers, emerged as a direct predictor of body image dissatisfaction among boys and girls though less significant among girls. This finding is in line with another study (Jones, 2001) reporting that, although boys were more likely to engage in weight and height comparisons, girls were equally likely to compare their body size to peers and media models at same time. Similarly, other studies (Bessenoff, 2006; van den Berg, Thompson, Brandon, & Coovert, 2002) found that frequent social comparison was associated with high body image dissatisfaction, especially among females. Lin and Kulik (2002) found that social comparisons with even a single, thin peer might be another contributor to body image dissatisfaction in addition to comparisons with ultra-thin fashion models. It seems that social comparison acts as a mechanism by which environmental influences affect body esteem and subsequent dissatisfaction (Krcmar et al., 2008).

Internalization of the thin ideal also emerged as a significant predictor of body image dissatisfaction among girls but not among boys. This finding is in line with previous research supporting such a relation among female adolescents (Chen et al., 2007; Knauss et al., 2008; Knauss et al., 2007; Jones et al., 2004; Lawler & Nixon, 2010). Other studies noted that whereas internalization was most strongly related to body image dissatisfaction in female students who viewed themselves as oversized regardless of their actual weight (Twamley & Davis, 1999), male adolescents were internalizing the media body ideal to a lesser degree than girls (Knauss et al., 2007).

The hypothesized mediated relationships between weight status and body esteem were confirmed for girls but not for boys. Both social comparison and internalization mediated the relationship between weight status and body esteem in female students. In addition, internalization mediated the relationship between social comparison and body esteem. Heavier girls tended to do more body comparing than lighter weight girls and as a consequence were more likely to have lower body esteem and body satisfaction. Another route from weight status to body esteem showed that heavier girls tended to do more body comparing than lighter weight girls and as a consequence were more likely to internalize the thin ideal and to have lower body esteem and body satisfaction. However, even though heavier girls (as well as heavier boys) were less likely to internalize the thin

ideal, those girls who internalized the thin ideal more strongly were more prone to have lower body esteem and body satisfaction. These results suggest that the impact of weight status on body dissatisfaction among girls is both direct (due to negative self-evaluation of one's body) and indirect (mediated through social comparison and internalization). These findings are consistent with those reported by Pokrajac-Bulian et al., (2008) who found that social comparison and internalization mediated the relationship between sociocultural and psychological influences, and restrictive eating behavior and body dissatisfaction. However, our findings contradict previous studies in which the meditational role of internalization could not be determined (Lawler & Nixon, 2010; Jones et al., 2004).

6- Limitations

Some limitations of the present study should be considered when interpreting the findings. Although the sample is relatively large and well distributed among different areas in Lebanon, representation of students in private school was not adequate. This may undermine generalizing the findings to the whole population of high school students in Lebanon. In addition, the cross-sectional design limits making causal relations beyond those predicted by the theories used to develop the model. Longitudinal and experimental research designs in future research are recommended to overcome this problem. Another weakness is that the muscular ideal shape that is socio-culturally desirable for boys was not included in the model, which may explain why the model was more appropriate for girls than for boys. Although self-reported data for height and weight may be questioned for accuracy, previous research has established the reliability and validity of such self-reported measures (Paradis, Perusse, Godin, & Vohl, 2008; Pietrobelli, Allison, Gallagher, Chiumello, & Heymsfield, 1998). It should also be acknowledged that a few of the measures related to social comparison and internalization of thinness as important for success had lower than ideal reliability coefficients, which may have affected some of the results.

7- Conclusion

In conclusion, the current study extends previous literature emphasizing the mediating role of social comparison and internalization between biological, sociocultural, and psychological factors, and body esteem and satisfaction. The use of a non-Western sample and the cross

validation of findings with Western and other non-Western studies contribute to better understanding of the effects of globalization on body image development of young men and women in modern times. The current study provides support for the idea that weight status and social comparison contribute to body image satisfaction among Lebanese male and female adolescents. The direct contributions of internalization to body image were true for girls only. Social comparison and internalization mediated between weight status and body esteem only among girls. In turn, internalization mediated between social comparison and body esteem among girls. Moreover, gender was found to moderate the relationship between weight status and body esteem. Thus, the present study contributes to the existing literature on adolescent body image by providing a distinct understanding of gender-related factors associated with body image dissatisfaction and highlighting the principal role social comparison and internalization play in the development of body esteem and subsequent satisfaction. Understanding the correlates of body image dissatisfaction and its psychological and sociocultural mechanisms may enable school counselors, school psychologists, and other school health professional to design more effective strategies for preventing body image problems among high school students.

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