

# A Cross-Cultural Study of Adolescents – BMI, Body Image and Psychological Well-Being

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## ABSTRACT

*Physical, psychological and social changes that occur during adolescence can markedly affect dietary habits and nutritional health. Physical changes including rapid growth place extra nutritional requirements on adolescents, while culture and society require adjustments in all of the aspects of daily living, including psychosocial well-being. Adolescents become focused on the physical appearance and any deviation from the ideal figure can result in negative dieting behavior, social withdrawal, poor self-esteem and increased health vulnerability. The paper presents some of the results of an international comparative study on risk and protective factors of adolescent health and well being, related to BMI, dieting behavior and body image and their relationship to psychosocial well-being (somatic stress, anxiety, depression, life satisfaction and self-esteem). Within an ecological cultural framework, it looks at group-specific differences of Albanian and Bosnian adolescents within different socio-cultural contexts across six European countries: two EU members (Italy and Austria) and four communities in the state of socioeconomic and political transition (Croatia, Bosnia and Herzegovina, Albania and Kosovo). The survey collected data from 2000 adolescents between 15 and 18 years of age. The study demonstrated a strong relationship between BMI and body dissatisfaction, between body image and dietary habits, and strong effects of body image on all indicators of psychosocial health. In addition to expected marked gender differences in all countries, the obtained results indicate significant intracultural variations related to socioeconomic status as well as considerable intercultural variations due to variable influence specific social and cultural contexts.*

**Key words:** adolescents, acculturation, BMI, body image, psychological well-being

## Introduction

The physical, psychological and social changes that occur during adolescence can markedly affect dietary habits and nutritional health<sup>1</sup>. Physical changes including rapid growth, the onset of menarche for girls, and increase in fat and muscle mass impose extra nutritional requirements on adolescents. This rapid growth depends on adequate nutrition, which is determined by the availability of sufficient quantities of food<sup>2</sup>. Given the current societal and cultural ideals of slimness and dieting, which predominate in modern society, many adolescent girls even of normal weight experience discontent with their weight and shape which can seriously affect their psychological and physical health<sup>3</sup>. As children reach adolescence, their bodies change, and they become more aware of how they look. Many young people dislike their bodies. They may feel fat and unattractive even if their mirror image shows otherwise. Girls often think they are

fat even when they are not and boys may fear they are not big enough. However, studies show girls focus much more on their body shape and size than do boys<sup>4,5</sup>.

During adolescence the culture and society require adjustments in all of the aspects of daily living, including language, school, health care, social life, physical and mental development and psychological well-being<sup>6</sup>. Such social and psychological changes may be associated with increased vulnerability and could cause diet-related problems. Dieting behavior is considered to develop under the influence of social and cultural standards that promote a marked slimness, the fatness being absolutely unacceptable. A teen's peers may affect her/his perception of body image, especially when they reach adolescence and peer groups become very important. Also, television shows, movies, music magazines and advertisers, which play a huge part in any teenager's life often pro-

mote the idea of thinness and perfection that will most likely differ from that of the average individual. In the Western culture, thinness has come to symbolize competence, success, control, and sexual attractiveness while obesity represents laziness, self-indulgence and lack of willpower<sup>2</sup>.

Culturally bound definitions of what is desirable and attractive play an important role in the body image formation. Because of the high value Western society places upon appearance, self-esteem is enhanced for those who are judged attractive and is challenged for those who are deemed unattractive. By adolescence, especially girls are more concerned with their looks than boys, and they also perceive themselves to be less attractive than boys do. In previous studies girls who perceived themselves to be less attractive had lower self-esteem scores than did girls who were more satisfied with their appearance, and a positive relationship between dieting behavior and disturbed psychological functioning has been proven<sup>3</sup>. The results on various forms of dietary behavior disturbances imply that social, cultural and psychological characteristics play a more important role than it used to be thought before.

Because of physical changes adolescents become focused on the physical appearance, and any deviation from the ideal figure can result in social withdrawal and poor self-esteem<sup>7</sup>. In that sense, satisfaction with one's own body image can act as a protective factor of their psychological well being, while body dissatisfaction can seriously affect health by decreasing satisfaction with life and self-esteem. The amount of psychological stress, including somatic symptoms, anxiety and depression is due to challenges in the processes of socialization, particularly among immigrants in the process of acculturation.

An international comparative study, supported by the European Commission, related to the quality of life and health outcomes of adolescent youth, with particular focus on youth with immigrant experience was carried out in different socio-cultural contexts across six European countries, including those with high long-term immigration rates (Italy and Austria) and those of post-conflict communities (Croatia, Bosnia and Herzegovina, Kosovo and Albania)<sup>1</sup>. Project goals were to determine risk and protective factors of socio-cultural integration and health of adolescent immigrants, and assess the role of contextual effects through cross-cultural comparison in six countries.

The general hypothesis of the research is that the sociocultural context and socio-economic conditions in different countries representing the macrosystem of the transactional model of health, with varying degrees of cultural and linguistic familiarity and contact history for immigrants and different ethnic attitudes will influence very differently the process of adjustment of adolescent refugees and potential effects on their health and psychosocial well being<sup>8,9</sup>. The possible effects of migration and exile on adolescent health and well being are assessed within the ecological model based on the dynamic interplay of the different factors and mechanisms (social and intraindividual) and situational specificity of the symptoms, which constitute a holistic view of the child and her environment.

Within this culturally anchored ecological framework the study design contrasts two culturally different groups of Albanian and Bosnian-origin adolescents in their home countries (Kosovo and Bosnia and Herzegovina) and as refugees/immigrants in receiving countries (Italy, Austria and Croatia). The groups indicate not only different nationalities and cultures of origin but also different degrees of cultural similarity with receiving societies. In addition to socioeconomic differences related to various transition stages toward democracy and market economy, each of these countries is situated on a cultural continuum ranging from high traditionalism and collectivistic values to individualism. These orientations are directly linked to changes in family systems, socialization values, parenting styles and childrearing orientations<sup>1</sup>.

### *Aims of the work*

The objectives of the present study are to explore the potential effects of the contextual influences in different countries and the acculturation process on body mass index, body image and dieting behavior, and to analyze the relationship between diet behavior and body image, and adolescent psychosocial adjustment.

### **Methods and Sample**

An international standard version of protective and risk factor *screening survey* as a tool to identify adolescents who may benefit from medical services was developed. Among many other measures related to health and behavior, the survey also collected data on reported weight and height, dieting behavior, body image perception, and psychological well-being in terms of stress, self-esteem and life satisfaction.

Information on the height and weight of each study participant was obtained by asking: *How much do you weigh without clothes?*, and *How tall are you without shoes?*

The reported weight and height were used to calculate body mass index (BMI). Age specific cut-off points in percentiles used to define adolescent undernourishment fall below the 5<sup>th</sup> percentile, while those at risk for obesity are found at the 85<sup>th</sup> and higher percentiles according to the World Health Organization references<sup>3,10</sup>.

Two items assessed body image. *Do you think your body is..?* Response options were: *Much too thin, A bit too thin, About the right size, A bit too fat, Much too fat*. The last two responses were combined as an indicator of perceived dissatisfaction with body weight<sup>3</sup>. *Weight control* was measured on a three-point scale from 1 (*lose or gain weight*) to 3 (*I am not trying to do anything concerning my weight*)<sup>3</sup>. The other item measured the respondent's desire to change something on his/her body<sup>3</sup>. The two items are summed up and averaged to obtain the following dichotomous score: 1 (dissatisfied with body image) or 2 (satisfied).

The *index of psychological distress* was measured using the indices of the most common anxiety symptoms, depressive behavior and somatic complaints, based on

**TABLE 1**  
DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE BY GROUP

	Kosovo	Albania	Albanians in Italy	Bosnia	Bosnians in Croatia	Bosnians in Austria
Total N by group	N=438	N=320	N=318	N=359	N=301	N=198
Mean age (years)	16.3	17.2	17.3	17.3	17.0	16.8
Gender						
Females	249 (56.85%)	202 (63.13%)	174 (54.72%)	217 (60.45%)	164 (54.49%)	102 (51.52%)
Males	189 (43.15%)	118 (36.88%)	144 (45.28%)	142 (39.55%)	137 (45.51%)	96 (48.48%)
Parental employment						
Unemployed	1.14%	2.50%	0.31%	9.19%	8.97%	0.00%
Homemaker	5.25%	8.13%	2.20%	65.46%	10.63%	0.00%
Retired	22.15%	21.88%	16.67%	10.86%	23.26%	2.02%
Part-time employed	48.17%	33.75%	39.94%	12.26%	26.91%	18.18%
Fully employed	23.29%	33.75%	40.88%	2.23%	30.23%	79.80%

Hopkins Symptom Checklist 25,<sup>11,12</sup> and RADS – Reynolds Adolescent Depression Scale.<sup>13</sup> In this study count variables of anxiety, depression and somatic symptoms were used as separate variables. *Anxiety* (5 items) is assessed by difficulty relaxing, nervous arousal, tension, irritability and feeling of threat. *Depression* (20 items) items refer to dysphoric mood, sadness, loneliness, sleep disturbance, anhedonia, pessimism, self-injurious or suicidal tendency, self-depreciation, reduced speech, worry, social withdrawal, loss of interest, appetite disturbance, helplessness, confusion. *Somatic symptoms* (10 items) include those most frequently related to stress. The items are rated on a four point a Likert scale ranging from 1 (almost never) to 4 (most of the time) depending on the extent to which specific states are experienced. Higher score on every scale indicates higher level of distress. *Self esteem* is measured using a 10-item scale ranging from (1) strongly disagree to (4) strongly agree<sup>14</sup>. The Satisfaction With Life Scale (SWLS), measures life satisfaction as a cognitive-judgmental process<sup>15</sup>. It assesses an individual's conscious evaluative judgment of his or her life by using the person's own criteria. The 5 items are answered on a four point Likert scale ranging from (1) strongly disagree to (4) strongly agree.

*Demographic variables* included items related to gender, age and socioeconomic status. Several indicators of *socioeconomic status* were used in the survey, to obtain more reliable data from the adolescents Economic status was measured by two variables: family affluence scale (FAS) consisting of home ownership, adolescent's own bedroom occupancy, family car ownership and family holidays (adapted from WHO Cross National Study<sup>3</sup>), and employment status of father and mother. The FAS scale ranged from 5–20, while higher score on scale indicates higher level of family affluence. The employment status scale included the following options: fully employed (5), part-time employed (4), retired (3), homemaker (2), unemployed- looking for job (1). The third variable was parental education, ranging from low (1) to high (3) education levels. The level of mother's and father's *education*

(elementary, secondary, university) was used as a proxy for social status which, particularly in transitional countries and for immigrant populations does not necessarily imply adequate economic status, but can be an important factor for general adolescent well-being.

The cluster sampling method was used as the most appropriate for this type of cross-sectional study. Trained assistants administered the self-report questionnaires to students of secondary schools during regularly scheduled class time.

The target population included 1934 adolescents (1108 girls and 826 boys) between 15 and 18 years of age in 2003 including those from Kosovo and Albania, immigrant Albanians in Italy, Bosnian adolescents in Bosnia, and immigrant Bosnians in Croatia and Austria. The demographic characteristics of the sample divided by adolescent groups are shown in Table 1.

Between-group analyses indicated that Bosnians in Bosnia were older than their counterparts in Austria, while Kosovars were younger than their Albanian peers in Albania and Italy. With regard to parental employment, there are also significant differences between groups reflecting different socioeconomic conditions in each country. Parents of adolescents in Bosnia have significantly the lowest rates of both part-time (12.26%) and full-time employment (only 2.23%), while those in Austria are either fully-employed (79.8%) or have a part-time job (18.18%)( $p < .001$ ).

## Results

### *Mean differences between the groups*

The differences between the specific groups of adolescents in socio-economic status, body mass index, body satisfaction, dieting, psychological distress (somatic stress, anxiety, depression) and well-being (life-satisfaction and self-esteem) were assessed by two-way, 4 (group)  $\times$  2 (gender) ANCOVAs, with age as a covariate. The results of these analyses are shown in Table 2 separately for Albanian and Bosnian groups.

**TABLE 2**  
RESULTS OF ANCOVA ANALYSIS

ALBANIANS						
Variables	Kosovo	Albania	Albanians in Italy	Group F (19.86)	Gender F (60.35)	Group x gender F (2.88)
Socioeconomic status	2.21 <sup>a</sup>	2.06 <sup>a</sup>	1.91 <sup>a</sup>	197.46***		
Body mass index	2.03 <sup>a</sup>	2.05 <sup>b</sup>	2.11 <sup>a,b</sup>	9.00***	28.34***	2.93*
Body image satisfaction	1.71 <sup>a,b</sup>	1.52 <sup>a</sup>	1.56 <sup>b</sup>	20.64***	20.67***	
Dieting	2.24	2.24	2.21		12.65***	
Somatic symptoms	1.51 <sup>a,b</sup>	1.79 <sup>a</sup>	1.76 <sup>b</sup>	39.68***	82.54***	8.99***
Depression	1.83 <sup>a,b</sup>	2.02 <sup>a</sup>	2.00 <sup>b</sup>	12.38***	100.12***	4.17**
Anxiety	1.73 <sup>a</sup>	2.55 <sup>a</sup>	1.93 <sup>a</sup>	81.70***	81.07***	2.73*
Satisfaction with life	3.00 <sup>a</sup>	2.41 <sup>a</sup>	2.62 <sup>a</sup>	84.37***	10.65**	
Self-esteem	2.95	3.00	2.95		3.89**	
BOSNIANS						
	Bosnia	Bosnians in Croatia	Bosnians in Austria	F=14.81	F=33.18	F=3.29
Socioeconomic status	1.51 <sup>a</sup>	2.22 <sup>a</sup>	2.21 <sup>a</sup>	230.88***		
Body mass index	2.05 <sup>a</sup>	2.07 <sup>b</sup>	2.15 <sup>a,b</sup>	6.27***	48.10***	4.91**
Body image satisfaction	1.62 <sup>a,b</sup>	1.49 <sup>a</sup>	1.44 <sup>b</sup>	12.20***	18.17***	
Dieting	2.28	2.20	2.27		8.00**	
Somatic symptoms	1.79	1.83	1.78		168.80***	3.92**
Depression	1.99 <sup>a,b</sup>	1.86 <sup>a</sup>	1.90 <sup>b</sup>	4.51**	127.68***	3.53*
Anxiety	2.12 <sup>a</sup>	2.10 <sup>b</sup>	1.88 <sup>a,b</sup>	5.39**	103.13***	
Satisfaction with life	2.40 <sup>a,b</sup>	2.70 <sup>a</sup>	2.84 <sup>b</sup>	23.63***	22.48***	
Self-esteem	2.90 <sup>a</sup>	2.98 <sup>b</sup>	3.29 <sup>a,b</sup>	45.15***	55.79***	8.04***

<sup>a,b, c t</sup> tests with Bonferroni's adjustment; the means that share the same superscript differ significantly ( $p < .05$ ).

The Albanian groups differed significantly from each other in all analyzed variables except dieting and self-esteem. Post-hoc comparisons indicated that Kosovars had significantly higher scores than other two groups in socioeconomic status measured by parental employment and family affluence. Kosovars also displayed the lowest values of BMI and all symptoms of psychological distress, while having significantly the highest values of body satisfaction and satisfaction with life in general. On the other hand, Albanians in Italy had significantly higher BMI values than other two groups, while Albanians in Albania had higher levels of psychological distress than other Albanian groups.

Bosnian groups differed significantly in all variables except for dieting and somatic symptoms. Bosnians in Bosnia and Herzegovina had the significantly lowest socioeconomic status in Bosnian groups concerning parental education, parental employment and family affluence, while Bosnians in Austria had significantly higher scores than other groups in socioeconomic status. In addition, Bosnians in B&H reported a higher level of depression and the lower level of life satisfaction than other groups, while the level of anxiety was higher for both groups in B&H and Croatia than for those in Austria. Adolescents in Austria, in turn, had the significantly higher BMI values than other two groups, but they also ex-

pressed significantly higher self-esteem and lower level of anxiety than other two groups.

The gender effect was found for all variables in both Albanians and Bosnians, though the effect is stronger for Bosnian groups. The girls reported lower body satisfaction, more dieting, more somatic, depressive and anxiety symptoms than the boys, while boys had higher BMI values and had higher self-esteem than the girls.

The significant Group X Gender interactions included BMI, somatic stress and depression for both Albanians and Bosnians, and additionally anxiety levels for Albanians and self-esteem for Bosnians. Albanian boys in Italy had significantly higher BMI values than all other boys, while Kosovar girls had significantly lower somatic stress than girls in Albania and Italy as well as boys in Albania. Boys in Albania, on the other hand had significantly higher anxiety levels than both girls and boys in Kosovo and Italy. Kosovo girls and boys had the lowest depression level among all girls and boys. As for Bosnians, boys in Austria had significantly higher BMI than all other boys and girls. Adolescents of both gender in Austria experienced significantly lower anxiety levels than all other groups, while girls in B&H reported significantly higher depression than girls in other groups. Boys and girls in Austria and boys in Croatia reported significantly higher self-esteem than all other boys and girls.



*Body mass index*

Generally, statistically significant differences were found by regression analysis between all Albanians and all Bosnians of both sexes in both height and weight adjusted for age and socioeconomic status. Albanian girls and boys have both lower height (M=164.19 vs. 167.26 for girls and 173.33 vs. 178.00 for boys) and lower weight than their Bosnian peers (M=0.54.36 vs. 56.87 for girls and 63.42 vs.68.29 for boys). As to height, Albanian girls in Albania are also significantly lower than Kosovar girls and Albanian girls in Italy, while no significant differences were found within Albanians and within Bosnians for males. As to weight, no significant differences were found within Albanian or within Bosnian girls. However, for males, Albanians in Italy have a significantly higher weight than both Kosovar boys and Albanian boys in Albania. Among Bosnians, Bosnian boys in Bosnia have a significantly lower weight than Bosnian boys in Austria.

The results for body mass index indicated no significant differences among female groups (Figure 1). However, Albanian boys in Italy have significantly higher values than their peers in both Kosovo and Albania, while Bosnian boys in Austria have significantly higher values than boys in Bosnia, reflecting cultural and contextual effects on BMI.

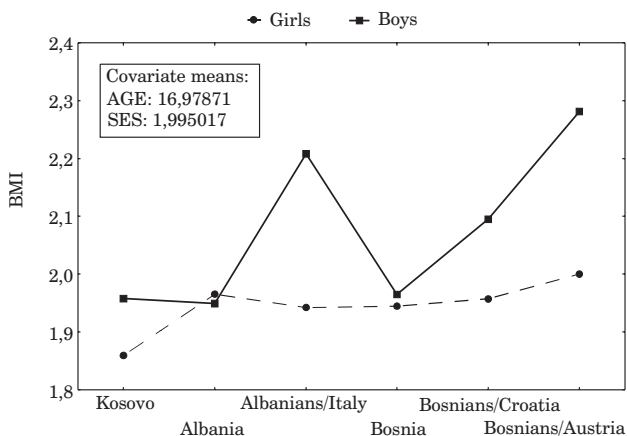


Fig. 1. BMI distribution by ethnic group and gender.

According to age and gender specific cut-off points, based on NCHS/WHO data, the results indicate that generally 91% to 95% of all girls, and 81%–92% of all boys in the study fall within the normal range of BMI. There is a clear gender difference and boys are at higher risks of being underweight or overweight. For both sexes, Albanians in Albania and Kosovo are at a significantly higher risk of being underweight as compared to Albanians in Italy, and the same applies to Bosnians in Bosnia as compared to those in Austria and Croatia. Those at the highest risk of being overweight are Bosnian girls in Croatia and Austria, and Bosnian boys in Austria as well as Albanians of both genders in Italy.

*Body satisfaction*

As to body satisfaction there are clear gender differences: more girls than boys report dissatisfaction with their body weight. The gender difference is more pronounced for Bosnians in Austria and Croatia. The only statistically significant difference for the composite measure of body satisfaction was found for Kosovo youth with the highest level of body satisfaction as compared to all other groups (Figure 2).

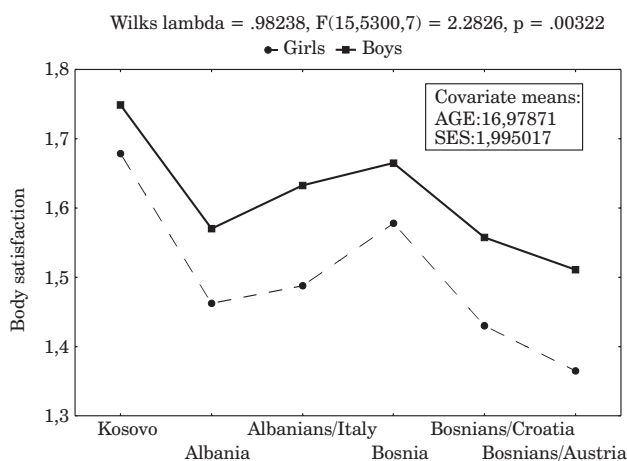


Fig. 2. Body satisfaction by ethnic group and gender.

Overall, 64% of all girls and 67% of all boys under study seem to be satisfied with how they look. Among Albanians, the most satisfied with their body image are girls (80%) and boys (86%) in Kosovo, followed by adolescents in Italy (60%–63%), while the least satisfied are those in Albania (52%–59%). In Bosnians, however, we find a rather clear pattern, roughly following the obtained BMI data. The highest body satisfaction is found in Bosnia (69%–74%), then in Croatia (58%–62%), while the least satisfied with how they look are boys and girls in Austria (51%–54%).

The findings also reflect different cultural and life style effects. A decreasing tendency of body satisfaction from Bosnia to Austria, and a different pattern for Albanians seem to reflect different social, economic and cultural pressures in these countries.

*Dieting*

Dieting is considered to represent risk behaviour as it can be associated with negative physical and psychological outcomes. Like dissatisfaction with body weight, dieting and weight control behaviour show clear gender differences, with higher levels in girls than boys. The overall percentage of dieters is rather high as 49% of all girls and 38% of all boys are trying to lose or gain weight, 34% girls and 40% boys are trying to stay the same, while only 17% of girls and 22% of boys do not control their weight at all (Figure 3). Except for gender, no significant

**TABLE 3**  
CORRELATION MATRIX BETWEEN BODY INDICATORS AND PSYCHOLOGICAL WELL-BEING

	BMI		Body satisfaction		Dieting	
	F	M	F	M	F	M
BMI	1.00	1.00	-0.13***	-0.07*	0.10***	-0.02
Body Satisfaction	-0.13***	-0.07*	1.00	1.00	-0.38***	-0.36***
Dieting	0.10***	-0.02	-0.38***	-0.36***	1.00	1.00
Somatic stress	0.07*	0.06	-0.23***	-0.18***	0.07*	0.03
Anxiety	0.06	0.04	-0.22***	-0.10**	0.08*	-0.04
Depression	0.02	0.01	-0.23***	-0.13***	0.10***	-0.01
Life Satisfaction	-0.01	-0.05	0.22***	0.09**	-0.07*	0.06
Self esteem	0.01	0.02	0.13***	0.03	-0.10***	-0.01

differences among the groups were found. The findings on dieting appear to be strongly correlated with the reported levels of body image satisfaction, as there are similar differences in body image satisfaction and dieting, across countries. On the other hand, the correspondence is clearly lower with respect to actual weight, measured by body mass index (BMI).

The obtained correlations between body mass index, dieting and body satisfaction with indicators of psychological well-being clearly indicate the importance of perceived body image (Table 3). Body mass index is significantly correlated with weight control, negative body image and somatic stress in girls, and only with body satisfaction in boys. In both sexes, positive body image, however, is not only negatively correlated with dieting, but also with somatic stress, anxiety and depressive symptoms. It is also positively associated with life satisfaction in girls and boys, and with self-esteem of adolescent girls. Weight control in its turn is positively correlated with somatic stress, anxiety and depression, and negatively with indicators of well-being, but only for girls.

In further step multiple regression analyses was performed for Albanian and Bosnian groups separately to determine the effects of BMI, body image and dieting behavior on psychological distress and well-being. The results of the regression analyses are presented in Table 4. It can be seen that dieting behaviour is not a significant predictor of psychological health. However, the two factors, including body satisfaction and gender, affect significantly all five variables of psychological health. Perception of being overweight and dissatisfaction with body size, rather than actual weight, appear to be a potent force behind psychological distress in all analyzed groups. While body satisfaction is the only significant predictor for all Bosnian groups, in Albanians the actual BMI represents the additional predictor for somatic stress and anxiety.

As to group specific results, significant positive effects were found for youth in Albania with respect to somatic stress and anxiety. In other words, lower perceived body satisfaction and higher BMI are associated with more so-

matic stress and anxiety in Albania, but not in Kosovo youth or Albanians in Italy. Also, higher perceived body satisfaction is positively associated with life satisfaction of Kosovo youth, but not of those in Albania, while there is a significant positive effect of body satisfaction on self-esteem of Albanian youth in Albania. Negative body image is associated with higher anxiety and depression

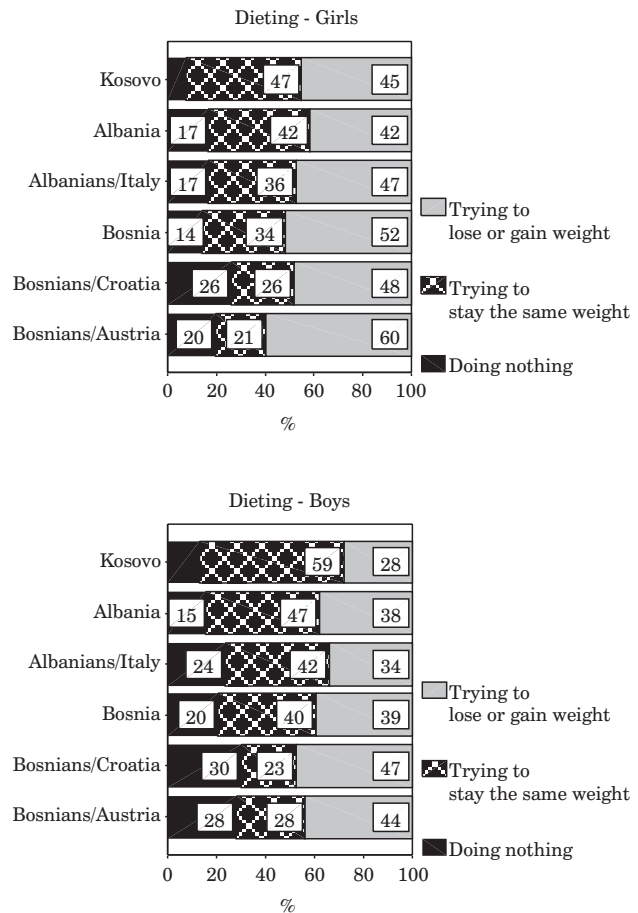


Fig. 3. Weight control by gender and ethnic group.

**TABLE 4**  
REGRESSION COEFFICIENTS OF MENTAL HEALTH INDICATORS ON PREDICTOR VARIABLES

Variables	Somatic stress	Anxiety	Depression	Life satisfaction	Self-esteem
Albanian groups	0.18	0.23	0.14	0.19	0.04
R <sup>2</sup>	30.92***	41.91***	23.84***	33.87***	5.53***
F					
Kosovo	-0.290***	-0.304***	-0.162***	0.433***	
Albania	0.100**	0.368***		-0.182***	0.117***
Albanians in Italy		-0.155***			
Sex (female)	0.221***	0.219***	0.227***	-0.058*	
BMI	0.052*	0.057*			
Body satisfaction	-0.154***	-0.141***	-0.204***	0.138***	0.130***
Dieting					
Bosnian groups	0.15	0.13	0.15	0.10	0.17
R <sup>2</sup>	31.51***	26.55***	32.05***	20.73***	37.71***
F					
Bosnia		0.106**	0.183***	-0.334***	-0.256***
Bosnians in Croatia			-0.089*		-0.077*
Bosnians in Austria		-0.188***		0.206***	0.435***
Sex (female)	0.322***	0.272***	0.275***	-0.112***	-0.160***
BMI					
Body satisfaction	-0.201***	-0.193***	-0.225***	0.180***	0.189***
Dieting					

\*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$

for youth in Bosnia, but not for Bosnians in Austria and Croatia. On the other hand, higher body satisfaction is positively associated with life satisfaction in Bosnians in Austria, but not for those in Bosnia.

Significant group effects were found for all three Bosnian groups with respect to self-esteem. More perceived body satisfaction is positively associated with self-esteem of Bosnians in Austria, while for youth in Bosnia and Croatia, and especially for girls the effects are in negative direction.

## Conclusions

The findings of this study confirm that BMI, body image satisfaction and dieting behavior differ by ethnic groups (Albanians and Bosnians) and vary within these groups by specific contexts. They also confirm the results of other international studies showing that the percentage of overweight boys and girls varies enormously across countries and regions (3–34%) in adolescence<sup>3</sup>. Prevalence is highest in Canada, Greenland and the United States, followed by England, Scotland and Wales and some southern European countries: Greece, Italy, Malta, Portugal and Spain. The Scandinavian countries and the central European countries have a lower proportion of overweight young people, and prevalence is lowest in the eastern half of the WHO European Region<sup>3</sup>.

Along these studies our results also indicate a higher prevalence of being overweight and obesity in boys, with levels for boys on average two or three times higher. The only exceptions to this are youth in Kosovo and Bosnia where boys and girls show almost identical overweight values. In general, boys are more likely to report that they are overweight or underweight, while girls in general report lower levels of self-rated body satisfaction, and are more likely to report that they are dieting.

The relationship between body satisfaction and its negative association with indicators of psychological distress, and positive association with psychological well-being have been firmly established by the obtained results in both genders, though the effects are significantly stronger in girls. Gender differences are apparent in the ways in which male and female adolescents evaluate their bodies<sup>15</sup>. Girls tend to view their bodies primarily as a means of attracting others, while boys perceive their bodies as a means of effectively operating in the external environment<sup>16</sup>.

The findings of this study confirm that dissatisfaction with body weight and dieting and weight control behaviour are common in young people, especially girls. The obtained intercultural variations (both at the level of country's cultural makeup as the ecological niche and ethnic communities) clearly indicate that culture in terms of values and behaviors is a significant determinant of the complex interplay of forces determining health outcomes.

The striking gender differences across analyzed groups illustrate the importance of gender in research and health promotion. The obtained intra-cultural differences in BMI, body image, and dieting indicate also clear effects of contextual factors of individual countries, which differently affect immigrant groups of the same ethnic/cultural origin.

The findings have implications for adolescent psychological health, as cultural pressures, predominant in industrialized countries, to have the ideal thin body shape may be of particular concern to young people, and this may have a significant effect on body image, psychological health, self-esteem and life satisfaction. Health promotion programmes should consider not only developmental, but also social and cultural factors that contribute to weight related problems and their potentially serious consequences on health.

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## KOMPARATIVNA MEĐUNARODNA STUDIJA – INDEKS TJELESNE MASE, PERCEPCIJA VLASTITOG IZGLEDA I PSIHOLOŠKO ZDRAVLJE ADOLESCENATA

### SAŽETAK

Fizičke promjene u adolescenciji uvjetovane ubrzanom rastom povezane su s posebnim prehrambenim potrebama, dok istodobno kultura i društvo zahtijevaju prilagodbe u svakodnevnom životu koje utječu na psihosocijalno zdravlje adolescenata. Adolescenti su zaokupljeni vlastitim izgledom, a svako odstupanje od idealnog izgleda može dovesti do štetnih prehrambenih ponašanja, povlačenja u sebe, niskog samopoštovanja i opće zdravstvene osjetljivosti. U radu se prikazuje dio rezultata međunarodne komparativne studije o rizičnim i protektivnim faktorima zdravlja adolescenata koji se odnose na indeks tjelesne mase, percepciju vlastitog izgleda i kontrolu težine te njihovu povezanost s indikatorima psihološkog zdravlja (somatskog stresa, anksioznosti, depresije, zadovoljstva životom i samopoštovanja). Uzorak je obuhvatio ukupno 2000 adolescenata u dobi od 15 do 18 godina, i to: albanske adolescente na Kosovu, u Albaniji i Italiji i bosanske adolescente u Bosni i Hercegovini, Hrvatskoj i Austriji. Rezultati pokazuju značajnu povezanost između indeksa tjelesne mase i zadovoljstva percipiranim vlastitim izgledom, značajnu povezanost između percepcije vlastitog izgleda i kontrole težine, kao i osobito značajnu povezanost između percepcije vlastitog izgleda i pokazatelja psihološkog zdravlja ispitanika. Pored izrazitih razlika u spolu koje su prisutne u svim skupinama ispitanika, dobiveni rezultati odražavaju i razlike koje su posljedica specifičnih utjecaja kulturnog i društvenog konteksta u pojedinim zemljama.