

Discontent with Financial Situation, Self-rated Health, and Well-being of Adolescents in Bosnia and Herzegovina: Cross-sectional Study in Tuzla Canton

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Aim To examine the relationship between quality of life, self-rated health, and well-being and to establish the relationship between discontent with familial financial situation and health in adolescents living in the Tuzla Canton.

Method The study comprised a random sample of 356 high school students aged 16, coming from 15 different classes of 16 high schools in the Tuzla municipality. Data were obtained using a validated self-reporting questionnaire on demographic and socioeconomic background, structure, and dynamics of the adolescent's family, life-style, perception, and satisfaction with the financial situation and current health status, as well as social relationships and health care provided in school settings.

Results In 11% (n = 40) of students' households several poverty indicators were present. Twenty three percent (n = 82) of the examinees were dissatisfied with the financial situation in their families, and 73% of them came from local, non-refugee families. They presented with progressive symptoms of unhappiness and expressed discontent with their health condition, and even self-hate in comparison with adolescents who were satisfied with the financial situation in their families ($\chi^2 = 21.5$; $P = 0.001$). The prevalence of self-rated mental symptoms was significantly lower among adolescents who were satisfied with their financial situation than in those who were dissatisfied (symptoms of depression 57/274 vs 40/82, $P = 0.001$; sadness 73/274 vs 45/82, $P = 0.001$; moroseness 34/274 vs 19/82, $P = 0.001$; under-sedation 29/274 vs 18/82, $P = 0.001$; bad marks and school failures 31/274 vs 20/82, $P = 0.001$; suicidal attempts 11/274 vs 7/82, $P = 0.001$, respectively). Using linear regression analysis we found that adolescents' satisfaction with the financial situation was a major factor predicting depression (OR, 1.57; 95% CI, 1.158-1.855), loss of appetite (OR, 0.82; 95% CI, 0.561-1.235), distraction (OR, 1.19; 95% CI, 0.837-1.154), unhappiness (OR, 1.05; 95% CI, 0.686-1.405), and inability to perform at school as expected (OR, 1.24; 95% CI, 0.903-1.581).

Conclusion Discontent with the financial situation significantly reduces the quality of mental health, leads to inappropriate patterns of behavior, and endangers future perspectives and well-being of adolescents.

Home and family are of the utmost importance for emotional, cognitive, and behavioral development during adolescence. The family structure evolved throughout history as a result of social, cultural, and economic development. Concerning the importance of family for the health of adolescents, many risk factors have to be taken into account. Single-parent families carry a higher risk of poverty, which often means a worse health situation as single-parent structures and stepfamilies predispose for developmental problems (1). The influence of traditional and patriarchal family pattern on the health and development of adolescents widely varies (2), depending on factors such as parents' unemployment or overwork and relations with members of the extended family. The quality of the relationship with the mother may be a very important protective factor (1-3).

On the other hand, adolescence has traditionally been viewed as a period of optimal health, characterized by low morbidity and chronic disease rates. However, some studies demonstrated that adolescents in Western countries have worse health than their parents at the same age. The increasing trend in the number of suicides, depression cases, and other symptoms of mental diseases is currently the prevailing one (3-5). In the years that went by, physical, cognitive, and social changes undergone by adolescents forced the traditional family system to adapt to the novel circumstances (5-7). During adolescence, unstable family environment causes acute stress and may lead to adolescent's insecurity and the impression that he or she is unable to cope with prospective life challenges. Given that a normal adolescent's growth and progress are characterized by dramatic changes in physical status, social relations, identity, sexuality, and behavioral patterns, a high level of family instability may lead to difficulties during this transition period and result in poorer adoles-

cent outcomes across a variety of developmental domains. Health-related quality of adolescents' lives represent rather unexplored field of research (8,9).

The 1992-1995 war transformed Bosnia and Herzegovina from a country with an average gross national income into a poor country (10). Both the collapse of the former socialist system and war led to physical and socio-economic devastation and unemployment. Despite the success of post-war reconstruction, the economy has never managed to recover. Acutely-induced and widespread poverty, and a high level of unemployment, represent fairly recent phenomena in everyday life of Bosnia and Herzegovina. In spite of the fact that a large number of Bosnians are well educated (10,11), at present about 19.5% of the population are below poverty limit and suffer serious shortages in almost all aspects of their lives. Poverty is defined as a pronounced deprivation in well-being, where the latter stands for an individual possession of income, health, nutrition, education, assets, housing, and a number of rights in the society (12,13).

In this study, we analyzed the relationships between the quality of life, self-rated health, and well-being of Bosnian adolescents who lived in the largest Canton of Bosnia and Herzegovina. We hypothesized that poverty and quality-life factors were the central causes of social differences encountered among adolescents, capable of greatly influencing their health. Inequalities in social standards, encountered among adolescents, may lead to their poor health and influence their social and psychological well-being and mental health.

Participants and methods

Research data were collected through a cross-sectional study carried out in April 2006 in 16 second grade classes of the secondary school in the Tuzla municipality. The study was per-

formed with the permission of the Tuzla Canton Ministry of Culture, Sport, and Education. The ethical approval for the research was obtained from the Ethical Research Committee at the Tuzla University School of Medicine. During the interview, the interviewer (one of the authors) was alone with the examinees.

Subjects

Our study included all high schools in the municipality of Tuzla, comprising students attending the second grade (ie, students born in 1989). We did not include schools for students with special needs.

Our population numbered a total of 2705 adolescents (1304 girls and 1401 boys). About 26% of adolescents born in 1989 ($n=703$) did not attend school at all (10,11). We used a cluster sample for practical reasons, with class rather than individual as the main unit. According to the type of education they offer, high schools in the municipality of Tuzla are divided as follows: technical schools (50 second grade classes), vocational schools (28 second grade classes), and grammar schools (18 second grade classes). The sample was targeted at the age of 16, and all types of schools were included. We estimated that our sample needed to comprise 15 out of 96 classes, randomly selected, because we wanted to have equal number of girls and boys. We expected that the whole sample to comprise 389 adolescents, but only 356 out of 389 completed the questionnaire in an appropriate manner (about 16% of the total population; response rate 91.5%). There were 172 participants (48%) from 7 classes of technical schools (mostly boys), 116 participants (33%) from 5 classes of vocational schools (boys and girls), and 68 participants (19%) from 3 classes of grammar schools (mostly girls). Out of whole study sample of 356 participants, 163 (46%) were boys and 193 (54%) were girls (Table 1). This distribu-

Table 1. Demographical structure of high-school respondents from the Tuzla Canton

School	No. (%) of examinees		
	girls	boys	total
Technical school	96	76	172 (48)
Vocational school	67	49	116 (33)
Grammar school	30	38	68 (19)
Total	193 (54)	163 (46)	356 (100)

tion was in accordance with that of the whole population. The participation in the study was voluntary (12).

Questionnaire

The questionnaire was designed in accordance with the World Health Organization Questionnaire of life assessment (WHOQOL), which is commonly used in studies dealing with adolescent life quality (14-17). The part of the questionnaire on quality of life, environmental factors, family structure, perceived adolescent aspects about environment and lifestyle (cultural and sports activities), relationships, and emotional support from parents and friends was in form of a Likert-type scale. Answers were given on a seven point scale (from 1 – “no” to 7 – “yes”; 1 – “never” to 7 – “almost every day”; or 1 – “a great deal better” to 7 – “a great deal worse”). Self-rated mental health, sense of self-esteem, and success in performing school tasks were measured with binomial scale (yes or no) (web-extra material). Cronbach alpha coefficient, reflecting the inner consistency of the questionnaire (18), was 0.79, which indicates the satisfactory inner consistency of the questionnaire.

Statistical analysis

Differences between the examinees' gender, various aspects of quality of life and lifestyle, relationship with parents and friends, financial situation in the family, and mental health symptoms and signs were assessed by means of χ^2 test. In order to identify the relationship between quality-life environ-

mental factors, familial structure, and adolescent's self-reported satisfaction with the financial situation, non-parametric correlation analysis (Spearman coefficient) was applied. In order to test the inter-relations between independent variables ("emotional support from the mother;" "satisfaction with their relations with friends") and dependent variables (depression/no depression, excellent/bad marks in school, felt sad/no sad (sadness), loss of appetite/no loss of appetite, lack of concentration/no lack of concentration, under a lot of pressure regarding the things that have to be done/not under a lot of pressure regarding the things that have to be done, unable to perform tasks, multivariate analysis of variance (ANOVA; logistic regression model) was used. The independent variables utilized the factors reflecting the quality-life environmental factors. Logistic regression analyses were used to identify relevant predictors/protectors of mental health symptoms and signs on the basis of predictors calculated odd ratios (OR) and confidence intervals (CI). All statistical analyses were performed with Statistical Package for Social Sciences, version 7.5 (SPSS Inc., Chicago, IL, USA) and $P < 0.05$ was regarded as significant.

Results

Characteristics of quality of life

The average age \pm standard deviation of the examinees was 16.3 ± 0.19 years. Most of them (40%) lived with both parents, 15% lived with a stepfather and mother, and 7% lived with a stepmother and father. Thirty five students (10%) lost their fathers and 6 (2%) lost their mothers during the war or due to illness. Seventeen percent of fathers ($n = 62$) and 48% of mothers ($n = 171$) were unemployed. In 40 households (11%), more than one poverty in-

Table 2. Quality of family life indicators among adolescents satisfied or dissatisfied with their financial situation

Quality of family life	No. (%) of adolescents		P*
	dissatisfied with their financial situation (n = 82)	satisfied with their financial situation (n = 274)	
Educational level of the father:			
completed primary school	15 (18.3)	142 (51.8)	0.001
completed secondary school	55 (67.1)	125 (45.6)	0.001
completed college or university	7 (8.5)	7 (2.6)	0.001
no answer	5 (6.1)	0 (0.0)	0.001
Educational level of the mother:			
completed primary school	33 (40.3)	188 (68.0)	0.001
completed secondary school	44 (53.6)	91 (33.2)	0.040
completed college or university	1 (1.2)	0 (0.0)	0.330
no answer	4 (4.9)	0 (0.0)	0.001
Parents employment situation:			
father employed	33 (40.3)	219 (79.9)	0.001
father unemployed	34 (41.4)	28 (10.3)	0.001
other income (pensions or benefits)	8 (9.8)	8 (2.9)	0.001
no answer	7 (8.5)	19 (6.9)	0.097
mother employed	19 (23.2)	140 (51.1)	0.001
mother unemployed	55 (67.1)	116 (42.3)	0.015
other income (pensions or benefits)	7 (8.5)	15 (5.5)	0.186
no answer	1 (1.2)	3 (1.1)	0.920
Place of residence:			
same as before the war	60 (73.1)	55 (20.1)	0.001
refugee/immigrant	16 (19.5)	118 (43.1)	0.001
changed residence because of other reasons/immigration	6 (7.4)	101 (36.8)	0.001
Adolescent lives with:			
both parents	33 (41.3)	109 (39.6)	0.113
mothers and stepfathers	2 (2.4)	53 (19.3)	0.001
fathers and stepmothers	16 (19.5)	8 (2.9)	0.001
mothers only	5 (6.1)	30 (10.9)	0.033
fathers only	10 (12.2)	20 (7.3)	0.050
grandparent(s)	16 (19.5)	44 (16.1)	0.074
other relative(s)	0	3 (1.1)	0.040
non relative(s)	0	7 (2.6)	0.001
Financial situation in the family compared with other families in the canton:			
a great deal better	2 (2.4)	87 (31.7)	0.001
much better	5 (6.1)	92 (33.6)	0.001
better	40 (48.8)	48 (17.5)	0.001
about the same	8 (9.7)	34 (12.4)	
worse	14 (17.1)	3 (1.1)	0.001
much worse	10 (12.2)	7 (2.6)	0.001
a great deal worse	3 (3.7)	3 (1.1)	0.001

* χ^2 -test.

indicator was present. Parents of adolescents who were dissatisfied with their financial situation were more often local, non refugee's habitants, fairly high-educated, unemployed and extremely poor than parents of adolescents who were satisfied with their financial situation (Table 2). The majority of adolescents ($n = 222$, 62.4%) spent only € 0.5-5 per week,

Table 3. Self-reported relationships with parents and friends among adolescents who were satisfied and those who were not satisfied with their financial situation

Characteristics of relationships with parents and friends	No. (%) of adolescents		P*
	dissatisfied with their financial situation (n=82)	satisfied with their financial situation (n=274)	
Satisfaction with the relationship established with the mother:			
very satisfied	38 (46.3)	167 (60.9)	0.032
satisfied	23 (28.0)	48 (17.6)	0.040
neither satisfied nor dissatisfied	3 (3.7)	11 (4.0)	0.156
not so satisfied	10 (12.2)	11 (4.0)	0.001
not at all satisfied	8 (9.7)	7 (2.6)	0.001
no answer	0	30 (10.9)	0.001
Satisfaction with the relationship established with the father:			
very satisfied	35 (42.7)	159 (58.0)	0.130
satisfied	28 (34.1)	98 (35.8)	0.660
neither satisfied nor dissatisfied	5 (6.1)	2 (0.7)	0.001
not so satisfied	9 (11.0)	15 (5.5)	0.001
not satisfied at all	1 (1.2)	0	0.001
no answer	4 (4.9)	0	0.001
Satisfaction with the relationships with friends:			
very satisfied	33 (40.2)	129 (47.1)	0.870
satisfied	23 (28.0)	101 (36.9)	0.015
neither satisfied nor dissatisfied	18 (22.0)	32 (11.7)	0.001
not so satisfied	6 (7.4)	9 (3.3)	0.033
not satisfied at all	1 (1.2)	3 (1.1)	0.920
no answer	1 (1.2)	0	0.001
Money spent per week (€):			
>5	17 (20.6)	101 (36.9)	0.066
0.5 to 5	57 (69.7)	165 (60.2)	0.110
nothing	8 (9.7)	8 (2.9)	0.001
My parents set definite rules on what I can do at home:			
almost always	20 (24.4)	74 (27.0)	0.130
often	27 (32.9)	70 (25.5)	0.670
sometimes	19 (23.2)	71 (25.9)	0.920
seldom	9 (11.0)	37 (13.5)	0.970
almost never	7 (8.5)	22 (8.1)	0.877

* χ^2 -test.

and 16 (4.5%) could not afford any expenses whatsoever (Table 3).

The majority of respondents (87%) reported that they did not participate in any sports, 77% (n = 274) did not drive motorcycles, and 83% (n = 294) did not go out in the evenings. However, the survey revealed that adolescents who lived in poverty participated in sports and cultural activities in much higher percentage than the adolescents who were satisfied with their financial situation (Table 4). In 75 out of 356 (22%) adolescents, the parents seldom set definite rules on general behavior at home, and in 90 (25%) adolescents the parents seldom or almost never set

definite rules on general behavior outside the house (Table 3).

Seventeen percent of examinees were dissatisfied with themselves, 15% reported a lack of emotional support from their mothers, 7% were dissatisfied with the emotional support from friends, and 13% were dissatisfied with their health (Table 4). There was a significant correlation between the self-rated health and level of self-satisfaction ($r = 0.504$; $P = 0.001$), symptoms of sadness ($r = 0.189$; $P = 0.001$), symptoms of depression ($r = 0.331$; $P = 0.001$), and discontent with familial financial situation ($r = 0.369$; $P = 0.001$). Out of 356 adoles-

Table 4. Self-reported differences in the perceived environment regarding life styles and thinking about own self among adolescents who were satisfied and those who were not satisfied with their financial situation

Perceived environment	No. (%) of adolescents		P*
	dissatisfied with their financial situation (n=82)	satisfied with their financial situation (n=274)	
How often do you actively participate in sports or exercise?			
never	19 (23.2)	134 (48.9)	0.001
a few times a year	16 (19.5)	97 (35.4)	0.040
once or twice a month	19 (23.2)	15 (5.5)	0.001
at least once a week	5 (6.1)	6 (2.2)	0.001
almost every day	23 (28.0)	22 (8.0)	0.001
How often do you read books in order to relax?			
never	41 (50.0)	269 (98.2)	0.001
a few times a year	41 (50.0)	5 (1.8)	0.001
How often do you go out in the evening (disco, café, party)?			
never	27 (32.9)	154 (56.2)	0.001
a few times a year	28 (34.1)	85 (31.0)	0.880
once or twice a month	13 (15.9)	7 (2.6)	0.001
at least once a week	10 (12.2)	19 (6.9)	0.050
almost every day	4 (4.9)	9 (3.3)	0.060
Do you ride a moped or a motorcycle?			
never	25 (30.5)	98 (35.7)	0.133
a few times a year	26 (31.7)	125 (45.6)	0.093
once or twice a month	12 (14.6)	5 (1.8)	0.001
at least once a week	16 (19.5)	45 (16.4)	0.110
almost every day	3 (3.7)	1 (1.1)	0.001
I am satisfied with my health:			
yes	55 (67.1)	256 (93.4)	0.033
no	27 (32.9)	18 (6.6)	0.001
How do you feel now?			
very happy	8 (9.8)	81 (29.6)	0.001
happy	14 (17.1)	83 (30.3)	0.014
satisfied with myself	25 (30.5)	64 (23.4)	0.078
enjoying life	11 (13.3)	31 (11.3)	0.760
unhappy	14 (17.1)	3 (1.1)	0.001
dissatisfied with myself	5 (6.1)	11 (4.0)	0.050
I hate myself	5 (6.1)	1 (0.3)	0.002

* χ^2 -test.

Table 5. Correlation between scores on the socioeconomic state subscales and the satisfaction with the family financial situation, obtained among 356 adolescents

Adolescent's socioeconomic state subscales	Adolescents' socioeconomic state subscales (Spearman correlation coefficient, ρ) [*]						
	1	2	3	4	5	6	7
1 employment status of the father	-0.08						
2 employment status of the mother	-0.07	0.09					
3 socioeconomic status of the family	0.15*	0.02	-0.02				
4 lives with the stepfather	0.05	0.05	0.00	0.26*			
5 lives with the stepmother	0.07	-0.02	0.02	0.27*	0.36*		
6 lives only with the mother	0.18*	-0.06	-0.06	0.04	0.05	0.03	
7 satisfaction with the financial situation	0.03	0.28*	0.27*	0.28*	-0.05	0.06	0.05

* $P < 0.001$ significant correlations between ranks on the socioeconomic state subscales and adolescent's perception of a satisfactory financial situation.

cents, 82 (23%) were usually dissatisfied with their financial situation. Self-esteem related to discontent with the overall financial situation positively correlated with the employment status of the father ($r = 0.28$; $P = 0.001$), mother ($r = 0.27$; $P = 0.001$), and family socioeconomic state ($r = 0.28$; $P = 0.001$). There was a significant correlation between the family socioeconomic state and the residential status of the examinees (locals, refugees, or immigrants) ($r = 0.15$; $P = 0.001$), as well as with living with stepparents (Table 5).

Mental health and related symptoms

The average score obtained in the assessment of the health status in the study sample as a whole was 1.67 ± 0.93 , ranked on a 1-4 scale. Out of 356 adolescents, 97 (27%) reported symptoms of depression and 118 (33%) reported sadness. Except for the symptoms of distraction ($P = 0.125$), mental health symptoms were most frequent among adolescents who were dissatisfied with their financial situation – they were two times more prone to attempt suicide. Out of 82 adolescents who were dissatisfied with their financial situation, 20 (25%) reported poor school marks and failure in school, 18 (22%) consumed tranquilizers or sedatives, 25 (31%) skipped classes, and 47 (57%) needed to use substantial effort in order to complete the required tasks (Table 6).

Logistic regression analysis showed that symptoms of depression were significantly associated with poor “emotional support pro-

Table 6. Prevalence of the symptoms and signs related to the well-being and mental health of 356 adolescents who were either satisfied or not satisfied with their financial situation

Symptoms and signs related to the mental health and well-being	No. (%) of adolescents		P^*
	satisfied with their financial situation (n=274)	dissatisfied with their financial situation (n=82)	
Bad marks and failure in school	31(11.3)	20 (24.4)	0.001
Taking tranquilizers or sedatives	29(10.6)	18 (21.9)	0.001
Often missing school	57 (20.8)	25 (30.5)	0.001
Investing great effort when performing things	78 (28.5)	47 (57.3)	0.001
Attempting suicide	11(4.0)	7 (8.5)	0.001
Loss of satisfaction with their health	26 (9.5)	19 (23.1)	0.001
Loss of satisfaction with their selves	41(14.9)	20 (24.4)	0.040
Loss of appetite	58 (21.2)	30 (36.6)	0.001
Inability to perform tasks	34 (12.4)	19 (23.2)	0.001
Lack of concentration	57 (20.8)	20 (24.4)	0.940
Sadness	73 (26.6)	45 (54.9)	0.001
Depression	57 (20.8)	40 (48.7)	0.001

* χ^2 -test.

vided by the mother” in the following conditions: “decreased educational level of the father” (OR, 1.738; 95% CI, 1.499-1.978), “the degree to which parents know where the adolescent hangs out” (OR, 2.339; 95% CI, 2.004-2.673), “refugee or immigrant status” (OR, 1.772; 95% CI, 2.001-2.638), and “parental setting of rules at home” (OR, 2.320; 95% CI, 1.31-2.282). The problem of bad marks in school was quite often associated with domicile or immigrant status (67.7% were refugees and immigrants; OR, 2.606; 95% CI, 2.032-3.180), employment status of the father (OR, 1.424; 95% CI 1.110-1.561), and educational level of mother (OR, 0.924, 95% CI, 0.183- 1.666) (Table 7). The symptom of sadness was often negatively associ-

Table 7. The most frequent factors affecting the quality of life (independent variables) associated with mental health symptoms as dependent variables (depression, inability to perform tasks, bad marks in school); observed among 303 of 350 adolescents who receive emotional support from their mothers

Independent variables	Factor (odds ratio, 95% confidence interval)*		
	depression	inability to perform tasks	bad marks in school
Educational level of the father	1.738 (1.499-1.978) [†]	1.717 (1.540-2.020) [†]	0.174 (-0.491-0.842)
Educational level of the mother	1.111 (0.542-1.690)	1.434 (1.219-1.615) [†]	0.924 (0.183-1.666) [‡]
Family economic situation	2.633 (-2.245-3.021) [†]	2.679 (2.323-2.988) [†]	0.283 (-0.452-1.022)
Gender of the adolescent	1.586 (1.418-1.754) [†]	0.375 (-1.050-0.306)	2.242 (1.894-2.591) [†]
Living with the stepmother	0.418 (0.298-0.537) [†]	0.439 (0.320-0.998) [†]	0.613 (-1.362-0.124)
Living with the stepfather	0.354 (-0.422-1.142)	1.227 (1.078-1.396) [†]	0.422 (-0.895-1.723)
Residence (domicile, immigrant)	1.772 (2.001-2.638) [†]	1.524 (1.308-1.696) [†]	2.606 (2.032-3.180) [†]
Employment status of the father	0.665 (-0.182-1.506)	0.139 (-1.364-1.080)	1.424 (1.110-1.561) [†]
Employment status of the mother	0.481 (-1.664-0.710)	1.495 (1.232-1.684) [†]	0.453 (-0.630-1.542)
Parents know where the adolescent hangs out	2.339 (2.004-2.673) [†]	0.584 (-2.302-3.566)	2.364 (0.809-3.918) [†]
Parents set rules at home	2.320 (1.312-2.282) [†]	0.237 (-0.677-1.189)	2.394 (0.609-4.179) [†]

*Linear regression analysis.

[†] $P < 0.001$.[‡] $P < 0.05$.

ated with the educational level (OR, 1.938; 95% CI, 1.680-2.196) or the employment status of the father and (OR, 1.165; 95% CI, 0.996-1.333). On the other hand, excellent marks in school were often negatively associated with hobbies like playing an instrument or singing (OR, 1.245; 95% CI, 1.083-1.407), reading with the purpose of relaxation (OR, 1.123; 95% CI, 0.985-1.261), or the habit of going out in the evening (OR, 2.120; 95% CI, 1.647-2.593).

In selected cases of adolescents who were receiving emotional support from their friends, we applied the multivariate logistic regression analysis and discovered that adolescents' satisfaction with their financial situation positively correlated with absence of various disease symptoms ($P = 0.001$) (Table 8).

Table 8. Health symptoms associated with satisfaction with the family financial situation (independent variable) among 319 of 356 adolescents satisfied with the relationships they had with their friends

Dependent variables	Odds ratio (95% confidence interval)*
No depression	1.507 (1.158-1.855) [†]
No loss of appetite	0.818 (0.561-1.235) [†]
No lack of concentration	1.187 (0.837-1.536) [†]
No feeling of sadness	1.046 (0.686-1.405) [†]
Not under high level of pressure to finish set tasks	1.012 (0.600-1.424) [†]
Not unable to perform tasks	1.242 (0.903-1.581)

*Linear regression analysis.

[†] $P < 0.05$.

Discussion

Our study showed that almost a half of the adolescents from the Tuzla Canton in Bosnia and Herzegovina live in poverty. Over two-thirds of adolescents spent the maximum of € 0.5-5 per week. Twenty three percent of examinees were usually dissatisfied with the financial situation in their family. Six percent of families lived on low income or pensions. This finding is in agreement with the previous assessment of poverty in Bosnia and Herzegovina (10,11).

The population health, particularly that in childhood and youth, is profoundly affected by the environment (1,6,19-21). Several studies have dealt with the relationships between specific aspects of poverty, deprivation, and adolescents' health (3,5,19-21). Our students, who lived in poverty or were dissatisfied with their financial situation, reported a lower quality of life than those living on a satisfactory income. Nevertheless, we found the first ones to be much more involved in sports and cultural activities. The mechanism underlying such a finding is not well understood (2,22). Seventeen percent of students reported a low level of self-esteem, which was positively correlated with the unemployment of parents and poor socio-economic situation of

the family. Similar results have also been reported by other authors (6,19-23). The most pronounced factors in this regard are economic hardships, family discord, disruption, and dysfunction, parental mental health problems, and difficulties in coping with day-to-day demands of the family life (1,5,6,19-23). Psychological, emotional, and developmental well-being are also closely associated with the socioeconomic status (1-5).

The rate of depression rate encountered among the studied adolescents was 27%. Results of some studies indicated that depressed adolescents reported significantly less parental attachment (21,22). Students with a history of suicidal attempts expressed the least secure attachment and the lowest degree of individualization in their current relationship with their parents (9). Poor relationship with the mother and the lack of her emotional support, as well as poor relationship with friends, were the predictors of depressive symptoms and poor self-rated health in the logistic regression model. A more recent study reported that 20% of adolescent suffered from depression (21-23). The results of our study indicated that depression during adolescence was strongly associated with poverty and life with stepparents, ie, life in an insecure environment. Gender was associated with the prevalence of depression too, so that the girls were at more risk. The risk of having a negative self-perception resulting from depressive experiences, observed in our adolescents, was mainly based on the unemployment of parents and a poor familial socioeconomic state. Other authors found that such feelings were usually associated with the sense of being abandoned (5,7,9,20,23). A possible explanation of our results could be that relationships with friends are of the high importance for the perception of adolescent's financial situation. Adolescents who were dissatisfied with their financial situation had the impression of being abandoned by others.

Some authors in our country suggest that adolescents develop strong attachments to their parents, which become even stronger in adverse situations (24). Bad marks, failure in school, and depression, found in our study, were strongly associated with the level of parental control ("my parents set definite rules of what I can do at home" and "my parents set definite rules on what I can do outside") and parental education. Entertainment activities (reading, going out, and riding a motorcycle or a moped) were rarely present (10%-17%). These values and perspectives are culturally based and, as such, resistant to changes (24,25).

Almost a half of the adolescents reported discontent with their health. The relationship between poverty and adolescent health is extensive, strong, and pervasive. In this respect, undoubtedly important contribution comes from a social support provided by the mother. Emotional support provided by the mother can have an important influence on the quality of life of adolescents who live in poverty. The satisfaction with the relationship with the mother (friendship, giving advice, and having someone to talk to) results in better adolescent health (5,26-31). This effect is the strongest in families living in poverty (32-34).

There are several limitations to our study. First, the collected data were self-reported, and depended on the reliability of adolescents' self-perception. On other hand, the impact of poverty on health may be similar to that from traumatic post-war factors or acculturation in most households in the Tuzla Canton (25,29). This study was also limited by the age of the respondents, which were all aged 16, so that our results may not be relevant to the whole adolescent population. The study did not include adolescents who were not part of regular schooling system. Therefore, the important goal of our future investigations will be to focused on the differences between healthy ado-

lescents and adolescents with acute or chronic health conditions who both live in poverty.

In conclusion, poverty in adolescents is associated with undesirable psychological and social consequences, including poor psychological well-being. Depressive symptoms, self-perceived health status, and contextual variables are important correlates of poverty. Perceived quality of life should be a barometer of opportunities and a useful social indicator in the surveillance studies on adolescents. Reasons why poor adolescents have worse health are the same as the reasons why families remain in poverty conditions. These reasons may be unemployment, post-war poverty in Bosnia and Herzegovina, educational level, and cultural determinative aspects of lifestyle.

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