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## QUALITY OF LIFE OF STUDENTS IN PRIMARY VOCATIONAL AND GENERAL EDUCATION SCHOOLS IN BAKU

### CALIDAD DE VIDA DE LOS ESTUDIANTES EN LAS ESCUELAS DE EDUCACIÓN PRIMARIA PROFESIONAL Y GENERAL EN BAKU

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#### ABSTRACT

Social education, which is a social process that has a significant influence on the lives of students, affects both their health and quality of life (QoL). Data from numerous authors indicate the characteristics of QoL among students of various institutions and the regional specificity of the health status of children and adolescents. Considering this, the objective of this investigation is to evaluate the quality of life of adolescents in Azerbaijan studying in different types of educational institutions, depending on their socioeconomic status and lifestyle. With this in mind, in this research was conducted a non-randomized study to examine the quality of life and medical-social characteristics of adolescents aged 16-18 years who were studying in 10-11 grades of state general education schools and the first year of primary vocational education institutions located in different districts of Baku. Using the SF-36 questionnaire, all students were evaluated for health-related quality of life according to a unified program. The study demonstrates the continuing relevance of developing and implementing prevention programs to reduce health risks among adolescents, associated with the high prevalence of negative lifestyle stereotypes (smoking, alcohol consumption). The findings provide an opportunity to identify priority social and educational risk factors for adolescents requiring special approaches to reduce them.

#### Keywords:

Adolescents, quality of life, SF-36 questionnaire, lifestyle, social risk factors, educational risk factors.

#### RESUMEN

La educación social, que es un proceso social que tiene una influencia significativa en la vida de los estudiantes, afecta tanto su salud como su calidad de vida (CV). Datos de numerosos autores indican las características de la CV entre estudiantes de diversas instituciones y la especificidad regional del estado de salud de niños y adolescentes. Considerando esto, el objetivo de esta investigación es evaluar la calidad de vida de los adolescentes en Azerbaiyán que estudian en diferentes tipos de instituciones educativas, dependiendo de su nivel socioeconómico y estilo de vida. Teniendo esto en cuenta, en esta investigación se realizó un estudio no aleatorizado para examinar la calidad de vida y las características médico-sociales de adolescentes de 16 a 18 años que cursaban los grados 10-11 de escuelas públicas de educación general y el primer año de instituciones de educación vocacional primaria ubicadas en diferentes distritos de Bakú. Mediante el cuestionario SF-36, se evaluó la calidad de vida relacionada con la salud de todos los estudiantes de acuerdo con un programa unificado. El estudio demuestra la relevancia continua de desarrollar e implementar programas de prevención para reducir los riesgos para la salud entre los adolescentes, asociados con la alta prevalencia de estereotipos de estilo de vida negativos (tabaquismo, consumo de alcohol). Los hallazgos brindan la oportunidad de identificar los factores de riesgo sociales y educativos prioritarios para los adolescentes que requieren enfoques especiales para reducirlos.

#### Palabras clave:

Adolescentes, calidad de vida, cuestionario SF-36, estilo de vida, factores de riesgo social, factores de riesgo educativos.

## INTRODUCTION

Compared to childhood, adolescents are considered to be healthier. At the same time, WHO experts note the teenage years as a critical time for physical, mental, and behavioral development, during which the foundation is laid for the rest of a person's life (Patton et al., 2016; World Health Organization, 2017). They call for great attention to be paid to this age group, as it is "the first time that many chronic illnesses show themselves and unhealthy habits are acquired, which will affect a person's well-being in the decades to come" (World Health Organization, 2020). Research materials from the past decade indicate that there is still a negative trend in the decline of adolescent health, with annual increases in morbidity rates by 2-4% (Balayeva, 2019, 2022; Balayeva & Aliyeva, 2018; Evstifeeva & Lebed'kova, 2011; Ibragimova & Shubochkina, 2013).

Social education, which is a social process that has a significant influence on the lives of students, affects both their health and quality of life (Al-Shidhani et al., 2015; Arslan et al., 2009; Nur et al., 2017; Pekmezovic et al., 2011). The assessment of the quality of life (QoL) is a concept that determines a person's well-being and has become a complementary part of modern healthcare. Quality of life can be understood as optimal levels of mental, physical, role, and social functioning, including healthy relationships and perceptions of health, fitness, life satisfaction, and well-being. Research on QoL among adolescents is particularly important because early identification of possible changes can promote the prevention of health disorders and their timely correction (Tikhomirova & Eliseeva, 2014; Zulkarnaev et al., 2015). Data from numerous authors indicate the peculiarities of QoL among students of various institutions and the regional specificity of the health status of children and adolescents. Studies show that QoL among students in educational institutions is one of the important issues. As a result, students develop a lack of preparedness for learning and restrictions on professional fitness (Paro et al., 2010; Schmidt, 2012).

The main risk factors for health disorders are first and foremost the sanitary and epidemiological situation in educational institutions, inadequate nutrition, non-compliance with hygiene norms for study and rest, sleep, and outdoor activities (Salam et al., 2012). From the perspective of health risks, among the factors that characterize students' lifestyles, three are identified as the most important for adolescents: harmful habits, lack of sleep, and low physical activity (Kisic-Tepavcevic et al., 2013; Pekmezovic et al., 2011). In particular, the entire period of study in high school is very stressful for teenagers, which has a significant impact on their health and well-being. Students with

high levels of health and well-being can integrate well into educational institutions, achieve high academic success, and actively participate in educational and extracurricular activities

(Wille et al., 2010; Zeller & Modi, 2006).

Established the importance of the research topic, the objective of this investigation is to evaluate the quality of life of adolescents studying in different types of educational institutions, depending on their socioeconomic status (gender, educational institution, marital status, family composition, living conditions, employment status) and lifestyle (nutrition, harmful habits, physical activity, sleep patterns, health status).

## MATERIALS AND METHODS

The study was conducted from 2015 to 2019 as part of the scientific program of the Department of Child and Adolescent Health and Occupational Health at Azerbaijan Medical University. State secondary schools and institutions of primary vocational education located in various districts of Baku were selected for the study. Data were collected at the end of the academic year from adolescents aged 16-18 who were studying in the 10th-11th grades (final years) of secondary schools and the first year of primary vocational education. Initially, 600 students were selected, of whom 569 agreed to participate in the study. Participation was voluntary and anonymous, and all students who agreed to participate were given informed consent forms. The questionnaires were completed during classes with the participation of teachers and researchers. 268 students from secondary schools (Group I) and 301 students from primary vocational education institutions (Group II) completed the questionnaire.

All participants completed a questionnaire that included demographic information, as well as information on education, social status, place of residence, family composition, health complaints, chronic illnesses, and habits (smoking, alcohol abuse, physical activity, diet, sleep, etc.).

To assess participation in moderate physical activity, students were asked how often they engage in sports besides physical education classes. HRQoL (health-related quality of life) associated with their health was evaluated using the Azerbaijani version of the SF-36 questionnaire. The SF-36 is a general HRQoL tool where 36 questionnaire items are grouped into eight scales: physical functioning (PF), role functioning physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role functioning emotional (RE), and mental health (MH) (Ware et al., 1993). Based on these eight scales, two summary

scores are formed: The Physical Composite Score (PCS) and the Mental Composite Score (MCS). Responses on the scales were processed using the Ware guidelines (Ware et al., 1993). Scores on each scale ranged from 0 to 100, with higher values indicating better functioning and well-being. Statistical analysis of the obtained results was performed using Microsoft Excel software, which was developed by us following the requests of this study.

**RESULTS AND DISCUSSION**

The initial analysis included descriptive summary statistics to assess the socio-demographic characteristics of the participants. Pearson correlation coefficient (r) was used to investigate the relationship between SF-36 indicators and lifestyle. Data were collected from 569 adolescent students, including 304 (~53.4%) boys and 265 (~46.61%) girls. The data for the groups were presented as follows: students from general education schools - 268 people (Group I), students from specialized schools - 301 students (Group II). Of these, in Group I, there were 127 women (~47.4%) and 141 men (~52.6%), while in Group II, there were 138 women (~45.8%) and 163 men (~54.2%). The main demographic characteristics of the participants are presented in Figure 1.

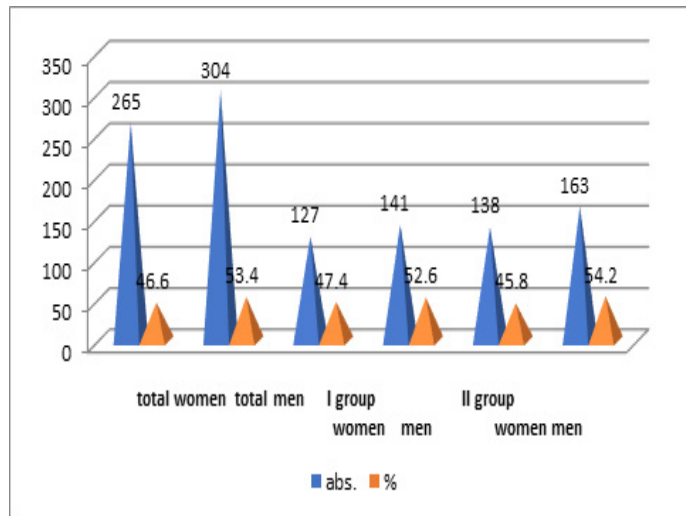


Figure 1. Population of the studied students from different groups.

Source: Owner elaboration

The majority of students in group, 301 (~52.8%), were from institutions of vocational education, while 268 (~47.2%) were high school students. The majority of study participants (466 people, ~81.9%) were born in the city. In terms of place of residence during their high school education, 261 (~45.9%) students reported living with their parents in their own house, 199 (~34.9%) students reported living

alone in rented apartments, and 109 (~19.2%) students reported living in dormitories.

When studying students from Group I (n=268), it was found that 58 students (~21.6%) had Group I health, 174 students (~65.0%) had Group II health, and 36 students (~13.4%) had Group III health. When studying students from Group II (n=301), it was found that 54 students (17.9%) had Group I health, 216 students (~71.8%) had Group II health, and 31 students (~10.3%) had Group III health (Figure 2).

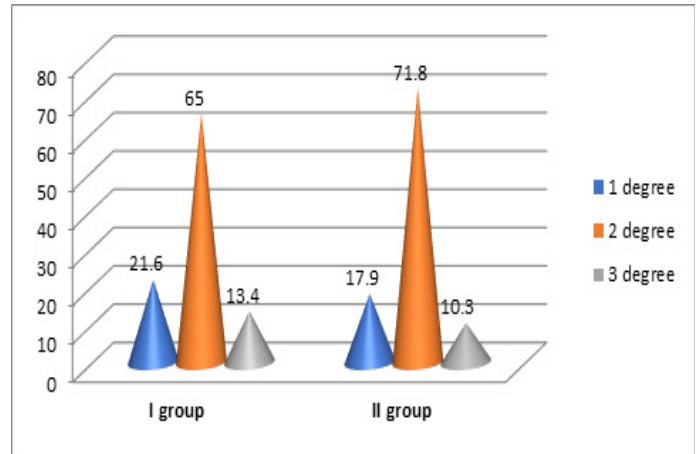


Figure 2. Distribution of all students by health groups (%)

Source: Owner elaboration

Analyzing the socio-demographic indicators, health status, lifestyle, and harmful habits, it was found that the majority of students live in complete families (81.95%). 13.3% of adolescents have chronic illnesses. 5.3% of respondents stated that they smoke, and 3.9% use drugs. 22.5% of students reported consuming alcohol. Less than half of the children (36.4%) ate hot meals only once a day, and only a third of those surveyed (34.6%) slept less than 6 hours per day. 24.9% of teenagers worked, and only 38.8% engaged in sports. 21.3% of surveyed teenagers do not like the chosen specialty (Table 1).

Table 1. Social-demographic indicators of students.

Socio-demographic characteristics of participants		Count	Percentage (%)
Complete family	Yes	466	81,95
	No	103	18,05

Having a chronic illness	Yes	75	13,31
	No	494	86,39
Loving profession	Yes	448	78,7
	No	121	21,3
Smoking cigarettes	Yes	30	5,33
	No	539	94,67
Drug use	Yes	22	3,85
	No	547	96,15
Consuming alcohol	Yes	141	22,49
	No	428	75,15
Hot meal	once a day	207	36,39
	2 or more times a day	362	63,31
Sleep time	6 hours or less	197	34,62
	7 hours or more	372	65,38
Does sports	Yes	221	38,76
	No	348	61,24
Works	Yes	142	24,85
	No	427	75,15

Source: Owner elaboration

The mean values of 8 indicators of the SF-36 questionnaire for all participants are presented in Table 2.

Table 2. Mean scores of 8 scales of the SF-36 questionnaire for all surveyed adolescents.

Scales SF-36	Total (569 people)	
	Mean	± SD*
PF – physical functioning	81.050	22.271
RP - role functioning physical	66.790	29.666
BP - bodily pain	73.811	25.419
GH - general health	69.343	21.559
VT - vitality	61.686	21.809
SF - social functioning	63.129	24.665
RE - role functioning emotional	65.881	33.380
MH - mental health	60.911	19.706
PCS - Physical Composite score	49.943	7.670
MCS - Mental Composite score	42.104	10.756

Source: Owner elaboration

As can be seen from Table 2, the highest quality of life scores was in the areas of physical functioning (81.1) and bodily pain (73.8). The mean values of the quality of life indicators differed significantly from the 100% level of “ideal” health. The values of the summary scales, the physical health component (49.9) and the mental health component (42.1), were below average. To compare the “girls” and “boys” groups, the Student’s t-test for independent samples was used. The data are presented in Table 3.

Table 3. Empirical values of the Student’s t-test for independent samples.

Scales of SF-36	Female Mean ± SD*	Male Mean ± SD*	Empirical value of the criterion	Level of significance P value
PF – physical functioning	79.861±21.35	81.531±23.28	-0.535	0.593
RP - role functioning physical	63.657±28.057	65.816±29.249	-0.539	0.59
BP - bodily pain	69.231±25.76	77.276±23.029	-2.366	0.019*
GH - general health	71.556±21.704	71±23.339	0.176	0.86
VT - vitality	64.583±20.013	67.143±22.082	-0.869	0.386
SF - social functioning	71.528±23.854	68.622±23.829	0.874	0.383
RE - role functioning emotional	61.731±31.85	64.293±34.603	-0.551	0.582
MH - mental health	62.111±18.948	65.755±20.574	-1.318	0.189
PCS - the Physical Composite score	49.128±7.788	50.174±7.458	-0.985	0.326
MCS - the Mental Composite score	43.397±10.498	44.398±11.903	-0.637	0.525

\* - p<0,05 \*\* - p<0,01 \*\*\* - p<0,001

Source: Owner elaboration

According to Table 3, except for the “social functioning” indicator, the values of all components of the quality of life were lower for girls. The difference in the “bodily pain” indicator was statistically significant (69.2 and 77.3, respectively; p<0.05).

To compare the I and II groups, the Student’s t-test for independent samples was used. The data are presented in Table 4.

Table 4. Empirical values of the Student’s t-test for independent samples for students of both groups.

Scales of SF-36	I group Mean ± SD*	II group Mean ± SD*	Empirical value of the criterion	Level of significance P value
PF – physical functioning	81.667±22.38	80.655±22.25	0.406	0.685
RP - role functioning physical	70.076±31.11	64.684±28.58	1.604	0.11
BP - bodily pain	74.985±26.45	73.058±24.77	0.670	0.504
GH - general health	66.303±19.8	71.291±22.44	-2.143	0.033*
VT - vitality	55.265±21.56	65.801±21.01	-4.427	0***
SF - social functioning	52.178±21.87	70.146±23.828	-7.114	0***
RE - role functioning emotional	70.455±33.378	62.95±33.131	2.022	0.044*
MH - mental health	56.333±18.775	63.845±19.774	-3.514	0.001***
PCS - the Physical Composite score	50.44±7.732	49.626±7.632	0.949	0.343
MCS - the Mental Composite score	39.342±9.471	43.873±11.172	-3.996	0***

\* - p<0,05 \*\* - p<0,01 \*\*\* - p<0,001

Source: Owner elaboration

A comparative analysis of the average scores on the SF-36 questionnaire showed that the highest scores in both groups were obtained for physical functioning (81.7 and

80.7 points, respectively) and body pain (75 and 73.1 points, respectively), reflecting a normal level of physical health in the students. Statistically significant differences ( $p < 0.001$ ) between the two groups were found in the areas of vitality, social functioning, and mental health, which were significantly lower in the first group (table 4), possibly due to the high academic workload and uncertainty about the future (admission to university) for 11th-grade students. Additionally, they had a lower score on the mental health composite scale, with values of 39.3 and 43.8 ( $p < 0.001$ ), respectively.

It was of interest to study the level of students' QoL depending on their socio-demographic characteristics since these indicators affect QoL. To analyze the relationship between socio-demographic indicators and various HRQOL indicators, a correlation analysis was conducted using the Spearman correlation coefficient. The data are presented in Table 5.

Table 5. Average values of the SC scales of students depending on the state of their socio-demographic indicators.

Socio-demographic characteristics of participants		PF	RP	BP	GH	VT	SF	RE	MH	PCS	MCS
Complete family	Yes	80,4	66,5	72,8	70,3	61,9	64,5*	66,2	62,3*	49,6	42,7*
	No	84	68	78,3	64,9	60,7	56,8	64,5	54,8	51,5	39,5
Having a chronic illness	Yes	66,6 ***	50,0 ***	61,4 ***	50,4 ***	49,1 ***	55,3	62,2	41,4 ***	44,0 ***	33,8 ***
	No	83,3	69,3	75,6	72,2	63,6	64,2	66,3	63,9	50,8	43,3
Specialty like it	Yes	82,3	67,9	75,9 **	72,7 ***	64,7 ***	65,4 **	68,0*	63,8 ***	50,5	43,8 ***
	No	76,4	62,8	66,3	56,9	50,6	54,7	57,9	50,2	47,8	36
Smoking cigarettes	Yes	76,1	59,7	61,3	63,8	61,4	63,2	74,1	54,9	46,2*	41,8
	No	81,3	67,2	74,5	69,7	61,7	63,1	65,4	61,3	50,2	42,1
Consuming alcohol	Yes	81,5	65,6	74,6	70,4	63,4*	66,2 ***	65,2	62,8 ***	50	43,2 ***
	No	81,9	71,7	74,3	67,2	57,6	51,2	66,2	56,5	50,9	39
Hot meal	once a day	78	61,4*	75,2	71	62,3	59,5	59,1 **	59,8	49,8	40,4
	>2 times a day	82,8	69,7	73	68,3	61,4	65,3	69,6	61,4	50	43,1
Sleep time	<6 hours	82,6	63,5	74,3	65,8*	57,1*	60,7	60,1	54,8 ***	50,6	39,2 ***
	>7 hours	80,2	68,6	73,5	71,2	64,1	64,4	68,9	64,2	49,6	43,7
Doing sport	Yes	81,8	66,8	74,9	73,3 **	67,9 ***	64	63,4	64,5 ***	50,5	43,5
	No	80,6	66,8	73,1	66,9	57,8	62,6	67,5	58,7	49,6	41,2
Works	Yes	75,6*	62,8	74,3	66,4	61,7	65,3	61,5	58,3	48,8	40,7
	No	82,9	68,1	73,7	70,3	61,7	62,4	67,3	61,8	50,3	42,6

\* -  $p < 0,05$  \*\* -  $p < 0,01$  \*\*\* -  $p < 0,001$

Source: Owner elaboration

Table 5 presents the average scale scores. As can be seen from the table, the highest correlation between HRQOL indicators was observed with the presence of chronic diseases among the respondents. Students with chronic illnesses had significantly lower scores on the PF (66.6 and 83.3, respectively), RP (50.0 and 69.3, respectively), BP (61.4 and 75.6, respectively), GH (50.4 and 72.2, respectively), VT (49.1 and 63.6, respectively), MH (41.4 and 63.9, respectively), as well as the summary scales PCS (44.0 and 50.8, respectively) and MCS (33.8 and 43.3, respectively) ( $p < 0.001$ ). The exceptions were the indicators of "social functioning" and "emotional role functioning." As a result of the study, the relationship between HRQOL and health status was established - students in the I health group had higher HRQOL scores than children in the III health group. By determining the average levels of the summary scores PCS and MCS



for each health group, it is necessary to identify students with a low level of HRQOL - they require further examination and consultation with a psychologist. The fact that even healthy students rate their functioning in educational institutions low is alarming. This once again confirms the relevance of the study and requires further investigation.

As known, harmful habits and lifestyles directly affecting the individual's health status can worsen HRQoL. From this perspective, it was interesting to investigate how HRQoL indicators differ between adolescents who consume alcoholic beverages, drugs, and cigarettes, and those who do not have harmful habits. Alcohol consumption had a negative effect on "social functioning," "mental health," and the summary measure of "mental component of health" ( $p < 0.001$ ), as well as on the VT indicator ( $p < 0.05$ ); smokers had a low score on the PCS summary scale ( $p < 0.05$ ). Due to the small number of students who used drugs, their indicators were not analyzed.

Healthy lifestyle indicators such as sufficient sleep (7-8 hours for older adolescents), normal nutrition, especially the presence of hot food in the daily diet, and sufficient physical activity have significant importance for normal development and health preservation. Adolescents who reported sleeping 6 hours or less had statistically significantly lower scores for "mental health" (correspondingly 54.8 and 65.2;  $p < 0.001$ ) and the summary measure of "mental component of health" (correspondingly 39.2 and 43.7;  $p < 0.001$ ). Physical activity is one of the most important factors for natural health improvement. Among students who engaged in sports other than physical education classes, the values of the "overall health status" (correspondingly 73.3 and 66.9;  $p < 0.01$ ), "life activity" (correspondingly 67.9 and 57.8;  $p < 0.001$ ), and "mental health" (correspondingly 64.5 and 58.7;  $p < 0.001$ ) scales were higher than those who did not doing sports.

For high QoL, the choice of profession is of great importance. As is known, people who pursue their favorite professions are more active, cheerful, and have a good mood, which increases their QoL. Thus, statistically significant lower values of indicators such as "overall health" (72.7 and 56.9, respectively;  $p < 0.001$ ), "life activity" (64.7 and 50.6, respectively;  $p < 0.001$ ), "mental health" (63.8 and 50.2, respectively;  $p < 0.001$ ), "physical pain" (75.9 and 66.3, respectively;  $p < 0.01$ ), "social functioning" (65.4 and 54.7, respectively;  $p < 0.01$ ), as well as the composite indicator "mental component of health" (43.8 and 36.0, respectively;  $p < 0.001$ ) were observed among students who did not like their chosen future profession, which may be associated with a subconscious reluctance to study and work in this profession in the future.

## CONCLUSION

Quality of life is a complex character of students' physical, mental, and social functioning, based on their subjective perception of reality. The results of the research allowed the development of standardized indicators for the quality of life of adolescents in Baku City. The medical and social status of adolescents studying in different educational institutions was assessed to obtain the average values of quality of life indicators, which can be used as normative values when comparing results obtained in selective groups. In this regard, comparative analysis of the average SF-36 scores showed that the highest figures in both groups were obtained in physical functioning and bodily pain, reflecting a normal level of physical health in students. Except for the "social functioning" indicator, QoL indicators were lower in girls than in boys, and there were statistically significant differences in the "body pain" indicator. Statistically significant differences between the two groups were found in indicators of life activity, social functioning, and mental health, which were significantly lower in Group I. Students with chronic illnesses had significantly lower scores on the PF, RP, BP, GH, VT, and MH, as well as the summary, scales PCS and MCS. Adolescents who reported sleeping 6 hours or less had statistically significantly lower scores for "mental health" and the summary measure of "mental component of health". Statistically significant lower values of indicators such as "overall health", "life activity", "mental health", "physical pain", "social activity", as well as the composite indicator "mental component of health" were observed among students who did not like their chosen future profession, which may be associated with a subconscious reluctance to study and work in this profession in the future.

The relevance of developing and implementing preventive programs to reduce health risks associated with the high prevalence of negative lifestyle stereotypes (smoking, and alcohol consumption) has been demonstrated. The obtained data expand the possibilities for identifying priority social and educational risk factors requiring special approaches to reduce them. This concerns the improvement of the system of professional orientation in schools and the implementation of social support programs for students in the system of vocational education.

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