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Relationship between quality of life and subjective happiness of school adolescents

Relação entre qualidade de vida e felicidade subjetiva de adolescentes escolares

Relación entre calidad de vida y felicidad subjetiva de adolescentes escolares

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ABSTRACT

Objective: To assess the quality of life of school adolescents associated with socioeconomic and demographic profiles and the relationship with subjective happiness. **Methods:** A cross-sectional and quantitative study, developed from December 2018 to January 2019, with 339 adolescents aged 14 to 18 years enrolled at the Federal Institute of Education, Science, and Technology of the Sertão Pernambucano, in Petrolina, Pernambuco. Data related to socioeconomic and demographic profiles (gender, age, income, housing, mother's education, elementary school II, student aid, physical activity, course) were evaluated, so the quality of life was verified using the Kidscreen-27 questionnaire (health and physical activity; psychological well-being; autonomy and relationship with parents; friends and social support; school environment) and subjective happiness using the Subjective Happiness Scale. They estimated crude odds ratios and adjusted by simple and multiple logistic regression models, considering the significance level of 5%. **Results:** This sample consists of 186 (54.9%) male adolescents and 153 (45.1%) female adolescents, with a mean age of 16.4 years (SD 1.1 year). Male adolescents are 4.10 times (95% CI: 2.31 - 7.26), more likely to have a better quality of life in health. Adolescents in the Electrical Engineering course are 2.27 times (95% CI: 1.02-5.02), more likely to have a better quality of life in health than those in Chemistry (p <0.05). Adolescents with a higher subjective happiness score are 7.10 times (95% CI: 4.18-12.08), more likely to have a better overall quality of life in all domains. **Conclusion:** Factors such as male gender, physical activity, higher income, younger age, and better subjective happiness positively influenced the quality of life of evaluated adolescents.

Descriptors: Quality of Life; Adolescent Health; Young Adult; Health Education.

RESUMO

***Objetivo**: Avaliar a qualidade de vida de adolescentes escolares associada aos perfis socioeconômico e demográfico e a relação com felicidade subjetiva. **Métodos:** Estudo transversal e quantitativo, desenvolvido de dezembro de 2018 a janeiro de 2019, com 339 adolescentes de 14 a 18 anos matriculados no Instituto Federal de Educação, Ciência e Tecnologia do Sertão Pernambucano, em Petrolina, Pernambuco. Avaliaram-se dados relativos aos perfis socioeconômico e demográfico (sexo, idade, renda, moradia, escolaridade da mãe, escola fundamental II, auxílio estudantil, atividade física, curso), assim como verificou-se a qualidade de vida pelo questionário Kidscreen-27 (saúde e atividade física; bem-estar psicológico; autonomia e relação com os pais; amigos e apoio social; ambiente escolar) e a felicidade subjetiva pela Escala de Felicidade Subjetiva. Estimaram odds ratios brutos e ajustados por modelos de regressão logística simples e múltipla, considerando o nível de significância de 5%. **Resultados:** Amostra composta por 186 (54,9%) adolescentes do sexo masculino e 153 (45,1%) do sexo feminino, com idade média de 16,4 anos (dp 1,1 ano). Os adolescentes do sexo masculino têm 4,10 vezes (IC95%: 2,31-7,26) mais chances de ter melhor qualidade de vida em saúde. Adolescentes do curso de Eletrotécnica têm 2,27 vezes (IC95%: 1,02-5,02) mais chances de ter melhor qualidade de vida em saúde que os de Química (p<0,05). Adolescentes com maior escore de felicidade subjetiva têm 7,10 vezes (IC95%: 4,18-12,08) mais chances de ter melhor qualidade de vida total em todos os domínios. **Conclusão:** Fatores como sexo masculino, prática de atividade física, maior renda, menor idade e melhor felicidade subjetiva influenciaram positivamente na qualidade de vida dos adolescentes avaliados.*

***Descritores:** Qualidade de Vida; Saúde do Adolescente; Adulto Jovem; Educação em Saúde.*

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RESUMEN

***Objetivo**: Evaluar la calidad de vida de adolescentes escolares asociada con los perfiles socioeconómicos y demográficos y su relación con la felicidad subjetiva. **Métodos:** Estudio transversal y cuantitativo desarrollado entre diciembre de 2018 y enero de 2019 con 339 adolescentes entre 14 y 18 años registrados en el Instituto Federal de Educación, Ciencia y Tecnología de la Zona Rural Pernambucana de Petrolina, Pernambuco. Se ha evaluado los datos del perfil socioeconómico y demográfico (sexo, edad, renta, vivienda, escolaridad de la madre, educación infantil II, ayuda de estudiante, actividad física, curso) así como se verificó la calidad de vida por el cuestionario Kidscreen-27 (salud y actividad física; bienestar psicológico; autonomía y relación con los padres; amigos y apoyo social; entorno escolar) y la felicidad subjetiva por la Escala de Felicidad Subjetiva. Se ha estimado odds ratios brutos y ajustados por modelos de regresión logística simple y múltiple considerando el nivel de significación del 5%. **Resultados:** La muestra ha sido de 186 (54,9%) adolescentes del sexo masculino y 153 (45,1%) del sexo femenino con la edad media de 16,4 años (±1,1 año). Los adolescentes del sexo masculino tienen 4,10 veces (IC95%: 2,31-7,26) más oportunidades de tener mejor calidad de vida en salud. Adolescentes del curso de Electrotécnica tienen 2,27 veces (IC95%: 1,02-5,02) más oportunidades de tener mejor calidad de vida en salud que los de Química (p<0,05). Adolescentes con más puntuación de felicidad subjetiva tienen 7,10 veces (IC95%: 4,18-12,08) más oportunidades de tener mejor calidad de vida total en todos los dominios. **Conclusión:** Los factores como el sexo masculino, la práctica de actividad física, la mayor renta, la menor edad y la mejor felicidad subjetiva han influenciado de manera positiva en la calidad de vida de los adolescentes evaluados.*

***Descriptores:** Calidad de Vida; Salud del Adolescente; Adulto Joven; Educación en Salud.*

INTRODUCTION

Quality of life (Qol) is an individual, subjective, multidimensional construct that can be influenced by health status, socioeconomic level, lifestyle, social interaction, and family support[1]. The concern with assessing Qol in adolescent populations stands out due to its impact on the development of adult life[2], directly related to physical, psychological aspects, depressive symptoms, anxiety, stress, level of concern, and perception of your happiness[3].

According to the Statute of the Child and Adolescent (ECA), adolescence comprises the period from twelve to eighteen years of age, between childhood and adulthood, marked by a complex process of biopsychosocial growth and development[4]. An estimate of 2018 indicates that the population in the 0-18 age group was 68.8 million, which corresponded to 33% of the total Brazilian population[5].

Adolescents are exposed to several health risk factors within their social contexts, such as tobacco use, alcohol consumption, inadequate diet, and physical inactivity, which can alter Qol[6].

To protect and ensure the rights of adolescents and children, programs have been instituted, such as the Adolescent Health Program[7], and ECA[4], which brought a comprehensive protection approach to children and adolescents who, regardless race, color or social class, are recognized as subjects of rights. To guide actions integrated with other health policies, the Ministry of Health (MS) proposed the National Guidelines for Comprehensive Health Care for Adolescents and Youth in Health Promotion, Protection, and Recovery, so that a comprehensive look at the needs of this population can be given[8].

As a set of strategies and ways of producing health, at the individual and collective levels, health promotion aims to meet social health needs and ensure the improvement of the population›s Qol. Health is the greatest resource for social, economic, and personal development, as well as an important dimension of Qol. It is understood not as an objective in itself, but as a fundamental resource for everyday life[9]. Promoting health for adolescents requires strong intersectoral links that interconnect with the health sector and with the participation and cooperation from other sectors and the community itself since the expanded health needs of this population permeate the actions of the health sector[6].

Adolescence, regardless of socioeconomic status, age group, and sex, is a stage of high exposure to risk factors. Thus, initiatives must be directed so that there is an efficient educational, preventive, and assistance action, guaranteeing health promotion[10]. Health promotion with adolescents must be associated with constructive, liberating, dialogic, and promoting their autonomy in self-care education. New paradigms have emerged in the health area so that the hegemonic model centered on the disease gives rise to a logic that prioritizes people's Qol[11].

In recent years, there has been an increase in the number of publications on Qol among adolescents in Brazil and other countries. Among the countries that carried out the most studies, Germany, Spain, the Netherlands and Portugal stand out. In South America, Chile and Brazil stand out[12].

Like Qol, happiness, defined as satisfaction, state of mind, positive affect, and well-being[13], is based on a multidimensional construct. It is also affected by external factors, such as income, work, community and governance, values and religion, and personal factors, such as mental and physical health, family experience, education, age, and sex[14].

Understanding how adolescents in the Northeast region of Brazil, within their social, economic, and cultural context, perceive their Qol and what factors may be related to a positive or negative view of their life can contribute to the planning of interventional actions that they consider as a priority health education. Thus, the present study aimed to assess the quality of life of school adolescents associated with socioeconomic and demographic profiles and the relationship with subjective happiness.

METHODS

This is an epidemiological, observational, descriptive and cross-sectional study conducted with adolescents from the Federal Institute of Education, Science, and Technology of Sertão Pernambucano (IF Sertão - PE), located in the city of Petrolina, Pernambuco.

IF Sertão - PE is a higher, basic and professional, pluricurricular and multicampus education institution. Promotes social inclusion and reduces vulnerabilities, being an island of excellence in public education in Brazil. Technical courses are accessed through an annual selection process. In the integrated medium mode, the following courses are offered: Buildings, Electrotechnics, Informatics and Chemistry[15].

This study was developed from December 2018 to January 2019. To participate in the research, all 493 adolescents enrolled in the IF Sertão - PE in 2018 in the integrated high school courses - Informatics (65 students), Buildings (103 students), Electrotechnics (71 students) and Chemistry (100 students) were invited.

For the inclusion of adolescents in the study, all of them aged 14 to 18 years were considered to have agreed to participate and signed the Free and Informed Consent Form and the Term of Assent. Exclusion criteria were adolescents who did not complete the questionnaire or were not present on the day of data collection in the study.

Data were collected from printed questionnaires, applied during the regular class period, and in the presence of only the responsible researcher to clarify doubts about filling in, ensuring data quality. The adolescents answered the questionnaires in a unique, direct, and objective way.

As independent variables, the sociodemographic profile was considered: course (Informatics, Buildings, Electrotechnics, and Chemistry); gender (female and male); age (14 to 18 years); income based on the number of minimum wages (MW), in the amount of 954.00 *reais* (class A - above 20 MW, class B - from 10 to 20 MW, class C - from 4 to 10 MW, class D - from 2 to 4 MW and E class - up to 2 MW); type of housing (owned, rented, inherited, ceded or financed); mother's schooling (illiterate, incomplete elementary school, complete elementary school, incomplete high school, complete high school or higher education); receiving or not receiving financial aid from student policy; the number of aid received; practice physical activity; type of school where you attended elementary school (public, private, private and public); subjective happiness.

Regarding the subjective happiness assessment, the Subjective Happiness Scale (SHS) was used, which globally evaluates subjective happiness ranging from 1 to 7 points. In the present study, the global score of the scale was used, considering that higher scores correspond to greater subjective happiness[16].

For the collection of data related to QOL, the Kidscreen-27 self-administered questionnaire was used, created specifically for children and adolescents, with 27 items and multiple-choice distributed in five Qol domains: health and physical activity (perception of physical condition), psychological well-being (perception of affective and cognitive condition), autonomy and relationship with parents (perception about the relationship with parents), friends and social support (perception about the relationship between peers) and school environment (perception about the school and school capacity). Total Qol ranges from 0 to 100, is classified as values between 45 and 55 - normal Qol, values below 45 - negative / bad Qol and values above 55 - positive/good Qol[17].

Descriptive statistics were used from the distribution of simple and relative frequencies to perform data analysis. Then, the associations between each outcome variable and the independent variables were analyzed. Crude odds ratios (OR) were also estimated with the respective 95% confidence intervals, for this, simple logistic regression analysis was used. Variables with $p < 0.20$ were studied in the crude analyzes in multiple logistic regression models, maintaining in the final models those with $p \leq 0.05$.

The OR adjusted with the respective 95% confidence intervals were estimated by the multiple regression models. The crude OR represents the degree of association for each variable individually, without considering the others.

The adjusted OR represents the degree of association for the variables that remained in the final model, adjusted among them. For the analysis, the variables age, income, subjective happiness score and Kidscreen-27 score by the median were dichotomized to ensure the balance of the categories.

The research was conducted according to the precepts determined by Resolution No. 466/12, for study with human beings, of the National Health Council of the Ministry of Health and, when submitted to the appreciation, the study project received approval by the Committee of Ethics and Research at Faculdade São Leopoldo Mandic, Campinas (São Paulo), under Opinion No. 3,024,931.

RESULTS

Of the 493 adolescents, 339 (68.8%) answered the questionnaires, corresponding to a sample loss of 154 (31.2%). 186 (54.9%) male adolescents and 153 (45.10) female adolescents were observed; the average age of 16.4 years; 172 (50.7%) from class E; 237 (69.9%) living in their own home; 277 (81.7%) of mothers with higher education than elementary school and 151 (52.2%) adolescents receive financial assistance.

Regarding the total Qol of adolescents, the mean value of 65.5 was observed. Regarding the assessed domains, the highest average was found for the domain related to friends and social support (69.5). In the case of subjective happiness, an average of 4.68 was found, as shown in Table I.

Table I - Descriptive analysis of health-related quality of life (Kidscreen-27) of adolescents from the Federal Institute of Education, Science and Technology of Sertão Pernambucano (IF SertãoPE). Petrolina, Pernambuco, Brasil, 2019.

Variables	mean	Standard deviation	Median	Minimum	Maximum
Health and physical activity	59.9	16	60	24	100
Psychological well-being	66.7	15	68.6	25.7	97.1
Autonomy and relationship with parents	64.9	14.7	65.7	25.7	100
Friends and social support	69.5	15.4	70	25	100
School environment	67.5	13	70	20	100
*** Total quality of life**	65.5	11.3	65.8	37.3	96.1
**** Subjective happiness**	4.68	1.23	4.75	1	7

* value ranging from 0 to 100; ** value ranging from 0 to 7

The tables II and III show the results between the scores of the Kidscreen-27 instrument domains and the demographic and socioeconomic variables, and subjective happiness.

According to the results presented concerning the health and physical activity domain, it was observed that adolescents who are male, who practice physical activity and who have a higher subjective happiness score have 6.37 (95% CI: 3.49- 11.63), 9.97 (95% CI: 4.62-21.50) and 3.00 (95% CI: 1.68-5.34) times more likely, respectively, to have better Qol in the health and physical activity ($p<0.05$).

Male adolescents and those with a higher subjective happiness score are 4.65 (95% CI: 2.59-8.33) and 15.74 (95% CI: 8.85-27.99) times more likely, respectively, to have higher Qol in the psychological well-being domain ($p <0.05$), as shown in Table II.

It can also be observed that students in the Building and Electrotechnical courses have 2.24 (95% CI: 1.22-4.10) and 3.27 (95% CI: 1.58-6.78) times more chances, respectively, to have higher Qol in the domain of autonomy and relationship with parents than Chemistry students ($p<0.05$). Male adolescents, aged up to 16 years and with a higher subjective happiness score have 2.33 (95% CI: 1.40-3.89), 1.71 (95% CI: 1.07-2.72) and 2.03 (95% CI: 1.27-3.25) times more likely, respectively, to have better Qol in this domain ($p <0.05$), as shown in Table III.

Regarding the results observed in the friends and social support domain, students in the Electrotechnical course are 2.23 (95% CI: 1.15-4.31) times more likely to have a better Qol than students in the Chemistry course. Students in economic class D and with a higher subjective happiness score have 1.62 (95% CI: 1.02-2.56) and 3.63 (95% CI: 2.29-5.77) times more chances, respectively, to have better Qol in this domain ($p<0,05$). Male students with a higher subjective happiness score have 2.03 (95% CI: 1.26-3.26) and 2.92 (95% CI: 1.83-4.65) times more likely, respectively, to have a better Qol in the school environment domain, as shown in Table III.

Table II - Analyzes (crude and adjusted) of the associations between scores in the domains Health and physical activity and Psychological well-being assessed by Kidscreen-27 and the demographic, socioeconomic and happiness variables of adolescents in the IF SertãoPE. Petrolina, Pernambuco, Brasil, 2019.

Variables	Category	Domain			
		Health and physical activity		Psychological well-being	
		OR crude (IC95%)	OR adjusted (IC95%)	OR crude (IC95%)	OR adjusted (IC95%)
Course	Buildings	1.53 (0.86-2.73)	-	1.66 (0.93-2.95)	-
	Electrotechnical	**3.04 (1.61-5.73)	-	**3.63 (1.91-6.88)	-
	Computing	**2.44 (1.28-4.65)	-	*1.91 (1.00-3.64)	-
	Chemistry	Ref	-	Ref	-
Sex	Female	Ref	Ref	Ref	Ref
	Male	**7.12 (4.32-11.71)	**6.37(3.49-11.63)	**3.78 (2.38-6.00)	**4.65 (2.59-8.33)
Age	≤ Median (16 anos)	1.33 (0.87-2.06)	-	1.30 (0.85-2.00)	-
	> Median	Ref	-	Ref	-
Income	≤ Median (Classe D)	1.10 (0.72-1.70)	-	0.98 (0.64-1.51)	-
	> Median (Classe E)	Ref	-	Ref	-
Home	owned	1.43 (0.88-2.31)	-	1.60 (0.98-2.58)	-
	No owned	Ref	-	Ref	-
Mother's schooling	Up to complete elementary	Ref	-	Ref	-
	More years of study	1.06 (0.60-1.90)	-	0.75 (0.42-1.34)	-
Financial aid for student policy in the IF	Yes	0.9841 (0.64-1.52)	-	1.35 (0.87-2.08)	-
	No	Ref	-	Ref	-
How much financial aid from student policy in the IF	1	1.05 (0.65-1.69)	-	0.72 (0.45-1.16)	-
	2 or more	0.87 (0.44-1.75)	-	0.75 (0.37-1.50)	-
	Does not receive	Ref	-	Ref	-
School type	Public	Ref	-	Ref	-
	Private without scholarship	1.30 (0.77-2.20)	-	1.50 (0.36-1.95)	-
	Private with scholarship	0.94 (0.41-2.15)	-	0.84 (0.36-1.95)	-
	Private and public	0.98 (0.54-1.77)	-	1.17 (0.65-2.13)	-
Physical activity	Sporadically	*2.40 (1.10-5.23)	1.32 (0.56-3.11)	1.71 (0.91-3.21)	-
	No	Ref	Ref	Ref	-
	Yes	**14.08 (6.98-28.39)	**9.97 (4,62-21.50)	**2.33 (1.34-4.07)	-
Subjective happiness scale	≤ Median (4,75)	Ref	Ref	Ref	Ref
	> Median	**2.88 (1.84-4.49)	**3.00 (1.68-5.34)	**13.89 (8.22-23.48)	**15.74 (8.85-27.99)

* p≤0.05; ** p≤0.01; OR: Odds ratio; CI: Confidence interval; Ref: Reference category for each independent variable; IF Sertão PE: Federal Institute of Education, Science and Technology of Sertão Pernambucano

Table III - Analyzes (gross and adjusted) of the associations between the scores of the domains Autonomy and relationship with parents, Friends and social support and School environment assessed by Kidscreen-27 and the demographic, socioeconomic and happiness variables of adolescents in the IF SertãoPE. Petrolina, Pernambuco, Brasil, 2019.

		Domains					
		Autonomy and relationship with parents		Friends and social support		School environment	
Variable	**Category**	**OR crude (IC95%)**	**OR adjusted (IC95%)**	**OR crude (IC95%)**	**OR adjusted o (IC95%)**	**OR crude (IC95%)**	**OR adjusted (IC95%)**
Course	Buildings	¨2.40 (1.34-4,29)	¨2.24 (1.22-4.10)	1.27 (0.72-2.23)	1.19 (0.65-2.16)	1.36 (0.76-2.45)	-
	Electrotechnical	¨5.45 (2.81-10.58)	¨3.27 (1.58-6.78)	¨2.47 (1.32-4.60)	*2.23 (1.15-4.31)	1.71 (0.90-3.22)	-
	Computing	¨2,68 (1.40-5.15)	2.02 (0.99-4.10)	1.29 (0.68-2.44)	1.27 (0.65-2.48)	1.37 (0.70-2.64)	-
	Chemistry	Ref	Ref	Ref	Ref	Ref	-
Sex	Female	Ref	Ref	Ref	-	Ref	Ref
	Male	¨3.19 (2.04-4.99)	¨2.33 (1.40-3.89)	1.28 (0.83-1.98)	-	¨2.23 (1.40-3.54)	¨2.03 (1.26-3.26)
Age	≤ Median (16 years)	˙1.64 (1.06-2,51)	˙1.71 (1.07-2.72)	1.02 (0.67-1.57)	-	1.32 (0.84-2.06)	-
	> Median	Ref	Ref	Ref	-	Ref	-
Income	≤ Median (Class D)	1.51 (0.98-2,32)	-	1.51 (0.98-2.32)	˙1.62 (1.02-2.56)	0.81 (0.52-1.26)	-
	> Median (Class E)	Ref	-	Ref	Ref	Ref	-
Home	owned	1.29 (0.81-2,07)	-	1.41 (0.88-2.28)	-	1.34 (0.82-2.21)	-
	No owned	Ref	-	Ref	-	Ref	-
Mother's schooling	Up to complete elementary	Ref	-	Ref	-	Ref	-
	More years of study	1.08 (0.61-1.92)	-	0.92 (0.52-1.64)	-	0.70 (0.39-1.27)	-
Financial aid for student policy in the IF	Yes	1.07 (0.70-1,64)	-	0.80 (0.52-1.24)	-	0.75 (0.48-1.18)	-
	No	Ref	-	Ref	-	Ref	-
How much financial aid from student policy in the IF	1	0.98 (0.61-1,57)	-	0.81 (0.50-1.30)	-	1.50 (0.93-2.44)	-
	2 or ore	0.86 (0.44-1,71)	-	0.75 (0.37-1.50)	-	0.86 (0.41-1.81)	-
	Does not reveive	Ref	-	Ref	-	Ref	-
School type	Public	Ref	-	Ref	-	Ref	-
	Private without scholarship	1.65 (0.98-2,80)	-	1.00 (0.59-1.69)	-	1.13 (0.66-1.93)	-
	Private with scholarship	1.80 (0.79-4,12)	-	0.68 (0.29-1.57)	-	0.45 (0.17-1.18)	-
	Private and public	0.83 (0.45-4,50)		0.77 (0.42-1.40)	-	0.58 (0.30-1.10)	-
Physical activity	Sporadically	1.46 (0.79-2,69)	-	1.03 (0.55-1.91)	-	1.41 (0.74-2.69)	-
	No	Ref	-	Ref	-	Ref	-
	Yes	1.59 (0.93-2,72)	-	1,51 (0.88-2.58)	-	1.65 (0.94-2.92)	-
Subjective happiness scale	≤ Median (4,75)	Ref	Ref	Ref	Ref	Ref	Ref
	> Median	**2.27 (1.46-3.52)	**2.03 (1.27-3.25)	**3.67 (2.33-5.77)	**3.63 (2.29-5.77)	**3.10 (1.96-4.92)	**2.92 (1.83-4.65)

* p≤0.05; ** p≤0.01; OR: Odds ratio; CI: Confidence interval; Ref: Reference category for each independent variable; IF Sertão PE: Federal Institute of Education, Science and Technology of Sertão Pernambucano

The tables IV and V show, respectively, the result of the crude and adjusted analysis of the associations between the Kidscreen-27 score and the demographic, socioeconomic and happiness variables. According to Table IV, the variables course, sex, physical activity and happiness were associated with the dependent variable in the crude analysis, however, after adjusting the variables, that is, if the variables were combined together, it was observed that male students with a higher subjective happiness score have 4.10 (IC95%: 2.31 - 7.26) and 7.10 (95% CI: 4.18 - 12.08) times more likely, respectively, to have better Qol in health (p <0.05). In addition, Electrotechnical students are 2.27 (95% CI: 1.02-5.02) times more likely to have a better Qol than students in the Chemistry course (p <0.05), as shown in Table V.

Table IV - Crude analysis of the associations between the total score of quality of life in health assessed by Kidscreen-27 and the demographic, socioeconomic and happiness variables of adolescents in the IF SertãoPE. Petrolina, Pernambuco, Brasil, 2019.

			Kidscreen-27 Quiz- Total		OR crude (IC95%)	p-value
			≤Median (65.8)	> Median*		
Variable	**Category**	**n (%)**	**n (%)**	**n (%)**		
Course	Buildings	103 (30.4%)	54 (52.4%)	49 (47.6%)	1.76 (1.00-3.01)	0.0501
	Electrotechnical	71 (20.9%)	21 (29.6%)	50 (70.4%)	4.62 (2.40-8.91)	<0.0001
	Computing	65 (19.2%)	30 (46.2%)	35 (53.8%)	2.26 (1.20-4.29)	0.0122
	Chemistry	100 (29.5%)	66 (66.0%)	34 (34.0%)	Ref	
Sex	Female	153 (45.1%)	108 (70.6%)	45 (29.4%)	Ref	
	Male	186 (54.9%)	63 (33.9%)	123 (66.1%)	4.69 (2.95-7.44)	<0.0001
Age	≤ Median (16 years)	174 (51.3%)	85 (48.9%)	89 (51.1%)	1.14 (0.74-1.74)	0.5473
	> Median	165 (48.7%)	86 (52.1%)	79 (47.9%)	Ref	
Income	≤ Median (Class D)	167 (49.3%)	78 (46.7%)	89 (53.3%)	1.34 (0.88-2.06)	0.1756
	> Median (Class E)	172 (50.7%)	93 (54.1%)	79 (45.9%)	Ref	
Home	owned	237 (69.9%)	114 (48.1%)	123 (51.9%)	1.40 (0.88-2.25)	0.1579
	No owned	99 (29.2%)	56 (56.6%)	43 (43.4%)	Ref	
	Did not anwer	3 (0.9%)	1 (33.3%)	2 (66.7%)	-	
Mother's schooling	up to complete elementary	56 (16.5%)	26 (46.4%)	30 (53.6%)	Ref	
	Others	277 (81.7%)	141 (50.9%)	136 (49.1%)	0.84 (0.47-1.49)	0.5414
	Did not anwer	6 (1.8%)	4 (66.7%)	2 (33.3%)	-	
Financial aid for student policy in the IF	Yes	187 (55.2%)	91 (48.7%)	96 (51.3%)	1.19 (0.77-1.83)	0.4301
	No	151 (44.5%)	80 (53.0%)	71 (47.0%)	Ref	
	Did not answer	1 (0.3%)	0 (0.0%)	1 (100.0%)	-	
How much financial aid from student policy in the IF	1	110 (32.4%)	55 (50.0%)	55 (50.0%)	0.948 (0.59-1.52)	0.8239
	2 or more	40 (11.8%)	25 (62.5%)	15 (37.5%)	0.57 (0.28-1.15)	0.1148
	Does no receive	187 (55.2%)	91 (48.7%)	96 (51.3%)	Ref	
	Did not answer	2 (0.6%)	0 (0.0%)	2 (100.0%)	-	
School type	Public	168 (49.6%)	90 (53.6%)	78 (46.4%)	Ref	
	Private without scholarship	84 (24.8%)	35 (41.7%)	49 (58.3%)	1.62 (0.95-2.74)	0.0757
	Private with scholarship	27 (8.0%)	14 (51.9%)	13 (48.1%)	1.07 (0.48-2.42)	0.8680
	Private and public	60 (17.7%)	32 (53.3%)	28 (46.7%)	1.01 (0.56-1.82)	0.9747
Physical activity	Sporadically	82 (24.2%)	45 (54.9%)	37 (45.1%)	1.54 (0.82-2.86)	0.1764
	No	86 (25.4%)	56 (65.1%)	30 (34.9%)	Ref	
	Yes	151 (44.5%)	59 (39.1%)	92 (60.9%)	2.91 (1.68-5.05)	0.0001
	Did not answer	20 (5.9%)	11 (55.0%)	9 (45.0%)	-	
Subjective happiness scale	≤ Median (4.75)	193 (56.9%)	134 (69.4%)	59 (30.6%)	Ref	
	> Median	146 (43.1%)	37 (25.3%)	109 (74.7%)	6.69 (4.13-10.84)	<0.0001

* Reference category for the outcome variable; OR: Odds ratio; CI: Confidence interval; Ref: Reference category for each independent variable; IF Sertão PE: Federal Institute of Education. Science and Technology of Sertão Pernambucano

Table V - Adjusted analysis of the associations between the total score of quality of life in health assessed by Kidscreen-27 and the demographic. socioeconomic and happiness variables of adolescents in the IF SertãoPE. Petrolina. Pernambuco. Brasil. 2019.

			Kidscreen-27 Quiz - Total		OR adjusted (IC95%)	p-value
			≤ Median (65.8)	> Median*		
Variable	**Category**	**n (%)**	**n (%)**	**n (%)**		
Course	Buildings	103 (30.4%)	54 (52.4%)	49 (47.6%)	1.45 (0.74-2.83)	0.2742
	Electrotechnical	71 (20.9%)	21 (29.6%)	50 (70.4%)	2.27 (1.02-5.02)	0.0434
	Computing	65 (19.2%)	30 (46.2%)	35 (53.8%)	1.48 (0.68-3.25)	0.3197
	Chemistry	100 (29.5%)	66 (66.0%)	34 (34.0%)	Ref	
Sex	Female	153 (45.1%)	108 (70.6%)	45 (29.4%)	Ref	
	Male	186 (54.9%)	63 (33.9%)	123 (66.1%)	4.10 (2.31-7.26)	<0.0001
Subjective happiness scale	≤ Median (4.75)	193 (56.9%)	134 (69.4%)	59 (30.6%)	Ref	
	> Median	146 (43.1%)	37 (25.3%)	109 (74.7%)	7.10 (4.18-12.08)	<0.0001

* Reference category for the outcome variable; OR: Odds ratio; CI: Confidence interval; Ref: Reference category for each independent variable; IF Sertão PE: Federal Institute of Education. Science and Technology of Sertão Pernambucano

DISCUSSION

The perception of Qol and subjective happiness was shown to be satisfactory in the group of adolescents evaluated since both the total Qol scores and their domains were considered in a positive/good way[17]. It was observed that sex, type of course, and subjective happiness had the greatest interference in the Qol of the adolescents evaluated.

The literature points to studies in adolescents that showed similar results (18-20). Studies carried out in Chile and Colombia showed less perception of Qol[21,22], which shows that the dynamics involved in the social, economic, and cultural contexts of adolescents (family, school, peers, community., income) can influence the different facets of Qol[23].

In all observed domains, adolescents rated Qol as positive, and it is not possible to point to any domain that has contributed negatively to the general Qol. In the friends and social support domain, the highest score was obtained (69.5). Other studies in the literature have shown high scores in this domain[24,25], showing that the teenagers of the IF Sertão - PE also have good friendships, which are fundamental for social, emotional, and cognitive development in this stage of life[25].

The second domain with the highest score is related to the school environment (67.5), showing that adolescents perceive school as a favorable environment for their Qol. Thus, the school is a privileged place for the monitoring of risk and protection factors for adolescents, since, in addition to the role of forming values, habits, and lifestyle, it is the place that brings together the best conditions for implementing promotional actions of health[26].

Analyzing which factors could interfere in each of the domains, it was found that being male increased the chance of having a higher total Qol in 4 of the 5 domains evaluated, which corroborates with the evidence that the male sex has a more positive perception of life, as girls tend to be more demanding in terms of self-perception[27,28].

The practice of physical activity also increased the chance of having a better Qol related to the health and physical activity domain by 9.97 times, as it provides the individual with numerous benefits, such as improved well-being, self-esteem, self-confidence, and social interaction, which, for in turn, help to improve physical, mental, affective, social capacities, contributing to the prevention and treatment of diseases[29]. In contrast, a nationwide study concluded that more than half of Brazilian adolescents do not reach the minimum recommendation of 300 minutes/week of physical activity, this percentage being even higher among girls, exceeding 70%[30], which can help to understand the results verified in the male gender of the present study.

To promote healthy habits, aiming at the prevention of chronic diseases and the consequent improvement in the Qol of Brazilians, the Ministry of Health has implemented specific strategies aimed at adolescents, such as the Health Promoting Schools, the Health Academy Program (*Programa Academia da Saúde*), the National Health Survey School and the Health at School Program. These are initiatives aimed at encouraging the practice of physical activity, health education, and health care, to encourage healthy practices that positively interfere in the health promotion of this group[31].

Age also interfered with Qol, revealing that being up to 16 years old increases the chance of having a better Qol in the domain related to autonomy and relationship with parents by 1.71 times. After that, there is an increase in concerns, in the perception of responsibility for choosing a profession and in the need for financial independence of parents with the progressive increase in age. which can interfere with Qol and happiness[32].

In the present study, adolescents in economic class D are 1.62 times more likely to have a better Qol in the domain related to friends and social support than those in economic class E**.** Students with higher socioeconomic conditions have more positive social and personal health indicators, are more optimistic, have better self-esteem, and also greater satisfaction with social support, related to parents and friends[33]. Thus, social support is also considered as a protective factor for the health of children and adolescents[34].

In a study to assess the QOL of adolescents from schools in the city of São Paulo, with a sample of 2.434 students, it was observed that several aspects influenced Qol. The male, younger, with higher income (35.36), and the practice of physical activity had a positive impact on the Qol of this population.

It was possible to observe the interference of the course in the Qol of the adolescents investigated in the present research since the adolescents who are studying Electrotechnics are 3.27, 2.23, and 2.27 times more likely. Respectively, to have a better Qol in the autonomy and relationship with parents, in the domain friends and social support and better total Qol than those of Chemistry. Most teenagers belong to classes D and E, in which financial independence is something they crave. Thus, the offer of a course to Electrotechnical students increases the chance of early entry into the labor market, which needs trained people to respond actively to the demands demanded[37].

Subjective happiness proved to be an important variable to be considered in the current study, as the better perception of happiness increased the chance of having a higher Qol by 7.10 times. This observed result can be explained by the fact that most adolescents list happiness as something aimed at dealing with the demands of life more positively and adaptively, highlighting the school, family, and community as the main environments related to this happiness[38,39].

It was also observed a great interference of happiness in the domain related to psychological well-being, increasing the chance of having a higher Qol by 15.74 times. Psychological well-being is a multifunctional concept that requires the positive development of capacities that contribute to the full functioning of an individual's potential, involving his ability to think and good sense[40].

A limiting factor of the present study was considered the transversal nature of the perception assessment, showing the results in a momentary and punctual way. Another aspect refers to the possible selection bias, taking into account the fact that there is a sample of only one school, which may not reflect the reality of the region's adolescent population. However, in contrast, it helps to understand the reality of a group exposed to the differentiated and quality education offered by IF Sertão - PE. Social desirability can also be mentioned, since in this stage of life adolescents may have chosen answers considered more socially desired, however, the application of a questionnaire created specifically for the adolescent population, with methodological rigor, used in several countries and with high levels of validity and reliability reduces this phenomenon.

Adolescence, as it is a complex period of life, needs public policies that address the various aspects necessary for health promotion in this specific group, and the school, in its role as a host institution, listens. However, the recognition of changes and risk situations is extremely important in the constitution of a network of singular care so that it can effectively promote a better Qol in this population[34].

All the findings discussed above show the need to always glimpse the development of intersectoral actions, which should involve the school, the community, and the family, which are fundamental in the development of healthy environments to improve the well-being and Qol of this population[6].

CONCLUSION

Being male, and enrolled in the Electrotechnical course, and reporting subjective happiness positively influenced the quality of life. As the school is the most present social space in the lives of adolescents, it becomes a privileged place for the development of intersectoral actions related to life care and health promotion to minimize their vulnerabilities.

CONFLICTS OF INTEREST

The authors inform that there are no conflicts of interest as a result of this study.

CONTRIBUTIONS

Flávia Martão Flório and **Luciane Zanin de Souza** contributed to the preparation and design of the study; the acquisition, analysis and interpretation of data and the writing and / or revision of the manuscript. **Adália Maria Dias Palma Leal** contributed to the preparation and design of the study and the writing and / or revision of the manuscript.

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