



Research Paper

Evaluation of quality of life in teenagers with anxiety symptoms

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ABSTRACT:

Background: Adolescence is a period responsible for psychological and physiological changes that may influence the quality of life and the onset or worsening of anxiety.

Objective: evaluate the quality of life of adolescents with screening positive for anxiety symptoms.

Method: Cross-sectional, observational, and epidemiological study, carried out from 2021/December to 2023/September, with adolescents aged from 11 to 17 years, of both gender, regularly enrolled in two public schools in a city at Western Paraná, Brazil. The Multidimensional Anxiety Scale for Children (MASC) and the Assessment of Quality of Life (AUQEI) questionnaires were used. Concerning MASC questionnaire, the cut-off point was ≥ 56 points, situation in which the participant should be evaluated by a mental health professional. About AUQEI scale, adolescents with score ≤ 48 were considered to have low quality of life.

Results: 277 adolescents who filled the MASC and AUQEI questionnaires were analyzed. Of the participants, 25 (9%) were excluded due to incomplete completion. Age ranged from 11 to 17 years (mean: 14 years), with 126 (50%) male and 126 (50%) female. Using the MASC questionnaire, 89 adolescents (35.3%) scored positive for anxiety symptoms, and of these, 52 (58.4%) scored low on the AUQEI scale. About adolescents who scored positive on the MASC, 72 (73.4%) were female.

Conclusions: There was association between female and anxiety symptoms ($p < 0.001$). This study shows that prevention, early diagnosis, and monitoring of anxiety symptoms in adolescents will have a positive impact on the quality of life of this population.

Keywords: adolescent, quality of life, anxiety, questionnaire, epidemiology.

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I. INTRODUCTION

Adolescence is the period between the ages of 10 and 19 during which secondary sexual characteristics emerge and psychological, sexual, and social maturation and group identification develop¹. Because this is a transitional period, various emotional, psychological, behavioral, and biological changes are expected^{2,3}.

A meta-analysis estimated the global prevalence of mental disorders in children and adolescents to be 13.4%^{4,5}. Among these disorders, anxiety disorders represent a significant proportion, commonly manifesting as generalized anxiety disorder (GAD), panic disorder, specific phobias, and social anxiety disorder.

Anxiety symptoms in adolescents account for 10% to 20% of the most common mental health disorders, and often affect peer and family relationships and quality of life^{6,7}. The lack of diagnosis and treatment of these anxiety disorders leads to high rates of mental health problems in adulthood⁸.

There are screening questionnaires to assess anxiety and quality of life in adolescents, such as the Miers Child Anxiety Scale (MCAS), the Social Anxiety Scale for Adolescents (SAS-A), the Multidimensional Anxiety Scale for Children (MASC), Quality of Life Profile Adolescent Version (QOLPAV), Multidimensional Students' Life Satisfaction Scale (MSLSS), Quality of Life Scale for Children and Adolescents (KIDSCREEN), Youth Quality of Life Instrument (YQOLI), and the Assessment of Quality of Life (AUQEI). These instruments aid in the diagnosis, monitoring and treatment of anxiety disorders.

This study aimed to apply two screening questionnaires, one for anxiety symptoms and the other to assess quality of life in adolescents.

II. METHOD

This was a cross-sectional, observational epidemiological study conducted in two public schools in the municipality of Cascavel, PR, Brazil, from December/2021 to September/2023. After signing the free and informed consent form by the parents or guardians and the adolescent written free informed assent by the adolescents, the MASC and AUQEI questionnaires were administered to adolescents of both genders who were regularly enrolled in the participating schools. Exclusion criteria were incomplete completion of the questionnaire and/or subjects who showed no interest in participating of the research.

The MASC is a self-report instrument commonly used to measure anxiety symptoms in children and adolescents, originally developed by March, Parker, Sullivan, Stallings and Conners (1997), adapted and validated for the Brazilian-Portuguese language by Nunes (2004) and later by Vianna (2009)⁹. In this research, the questionnaire was chosen because it is an instrument already used in adolescent medicine outpatient clinics. The questionnaire consists of 39 items arranged on a Likert-like scale that varies from 0 to 3 (0=never, 1=rarely, 2=sometimes and 3=frequently). Scores range from 0 to 117, and the higher scores on the scale indicate higher levels of anxiety. For this study, a cutoff ≥ 56 was used, values suggested by the literature, a score at which the participant must be referred to a mental health professional.

The AUQEI scale, developed by Manificat, Dazord, Cochat and Nicolas (1997) and validated in Brazil by Assumpção, Kuczynski, Sprovieri and Aranha (2000)¹⁰, is made up of 26 questions that assess the subjective perception of well-being in different areas of the adolescent's life (autonomy, leisure, roles and family). The answers are chosen from "very unhappy, unhappy, happy and very happy" and are easy to use. For this study, cut-off point of 48 points was used, a score already used in other studies, below which the quality of life of the adolescents studied would be impaired.

Means and standard-deviations were used to describe the results for adolescents. Frequencies and percentages were used to summarize qualitative variables. Analysis of Variance model with two sources of variation was used to assess the association between age and anxiety and age and quality of life (QoL). Chi-squared test was used to compare the association between gender and QoL and gender and anxiety. For the association between anxiety and QoL, stratified analysis was performed using participant gender as the stratum. Homogeneity between the Odds Ratios of the strata was tested using the Chi-squared test for homogeneity. A p-value < 0.05 indicated statistical significance.

This study was approved by the Research Ethics Committee of the State University of Western Paraná under protocol number 5.132.138/2021.

III. RESULTS

A total of 277 questionnaires were used in this study, of which 25 (9%) were excluded due to incomplete completion. In the total, 252 questionnaires were analyzed, of which 126 (50%) were female and 126 (50%) were male. The age ranged from 11 to 17 years (mean: 14 years). 89 (35.3%) of the adolescents scored positive on the MASC, and of these, 52 (58.4%) had a low quality of life according to the AUQEI questionnaire.

Table 1 shows the association between QoL and anxiety, where most adolescents with anxiety were associated with low QoL. However, this association was not statistically significant (p 0.653).

Table 1. Association between quality of life and anxiety.

Quality of life	Anxiety		Total	p value
	No	Yes		
High	96	37	133	0.653
Low	67	52	119	
Total	163	89	252	

Table 2 shows the relationship between anxiety, quality of life and gender. Statistical significance ($p < 0.001$) was obtained in the relationship between female gender and anxiety symptoms. However, when quality of life and gender were correlated, there was no relationship.

Table 2: Association between anxiety, quality of life and gender.

Anxiety	Gender				p value
	Female		Male		
	n	%	n	%	
No	66	47.8	107	80.5	<0.001*
Yes	72	52.2	26	19.5	
Total	138	100	133	100	

Quality of life	Gender				pvalue
	Female		Male		
	n	%	n	%	
High	60	47.2	75	59.1	0.059
Low	67	52.8	52	40.9	
Total	127	100	127	100	

*p significant < 0.05

Table 3 presents the frequencies and percentages between anxiety, gender and quality of life, as well as the Odds Ratio. There was no statistical significance between gender, anxiety symptoms and quality of life, although most adolescents of both sexes with anxiety symptoms had a low quality of life and an Odds Ratio > 1.

Table 3: Frequencies (n) and percentages (%) between anxiety, gender and quality of life, furthermore the Odds Ratio

Quality of life	Gender								p value
	Female				Male				
	Anxiety		Anxiety		Anxiety		Anxiety		
	No	Yes	No	Yes	No	Yes	No	Yes	
	n	%	n	%	n	%	n	%	
High	32	53.3	27	40.9	64	62.1	10	43.5	0.664
Low	28	46.7	39	59.1	39	37.9	13	56.5	
Total	60	100	66	100	103	100	23	100	
OddsRatio (IC 95%):			1.65				2.13		

IV. DISCUSSION

It is estimated that mental disorders account for 16% of comorbidities in people aged 10-19 years (WHO), half of which begin by age 14 years, but most of which go undiagnosed or untreated¹¹. As a result, adolescents' quality of life, which determines their subjective well-being, is negatively affected^{9,12}.

Biologically, women are more likely to develop anxiety disorders than men, mainly due to the hormonal fluctuations typical of their gender. Psychologically, women also tend to adopt coping styles that increase feelings of worry, and socially, they tend to face greater pressures related to aesthetic standards, family caregiving demands, and inequality. The literature shows association between being female and having anxiety symptoms, which supports this study¹³⁻¹⁷. However, some studies have shown no difference in the incidence of anxiety symptoms between the sexes^{18,19}.

When quality of life, gender and anxiety were correlated in this study, no relationship was found, but the literature has shown that women are more prone to anxiety, which is associated with lower quality of life^{20,21}. Despite efforts to achieve gender equality, it is still possible to observe the effects of inequalities, particularly in self-care. Men tend to have stronger attitudes that attest to their masculinity, and women are encouraged from an early age to engage in self-care routines, which has a direct impact on their quality of life^{22,23,24}. However, in this study there was no association between quality of life and gender.

Despite being an outpatient problem, anxiety symptoms can culminate in emergency department visits. A Canadian study showed an increase in emergency department visits from 6% to 12.9% over a 7-year period²⁵, reinforcing the importance of the MASC questionnaire, which, if scored positive, should already refer the adolescent to a mental health professional, thus preventing emergency department visits.

V. CONCLUSION

This study concluded that female adolescents were more likely to have anxiety symptoms than male adolescents. Although most anxious adolescents had a low quality of life, this relationship was not found in this study. Due to the increasing incidence of anxiety symptoms, screening techniques for diagnosis and early intervention, as well as specialized follow-up, are needed.

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REFERENCES

- [1]. World Health Organization. What about boys? A literature review on the health and development of adolescent boys. *In: WHO. Sexuality, reproductive health and Fatherhood*. Genève: WHO, 2000, pp. 29-40.
- [2]. Blakemore S-J, Mills KL. I Adolescence a Sensitive Period for Sociocultural Processing? *Annual Review of Psychology*. 2014;65(1):187-207.
- [3]. Batista, MA, Oliveira, SMS. Frequent anxiety symptoms of adolescents. *Revista de Psicologia da Vetor Editora*. 2005;6(2):43-50.
- [4]. Polanczyk, GV., Salum, GA., Sugaya, LS., Caye, A., Rohde, LA. Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*. 2015;56(3):345-365.
- [5]. Kieling, C., Buchweitz, C., Caye, A., Silvani, J., Ameis, SH., Brunoni, AR., et al. Worldwide Prevalence and Disability From Mental Disorders Across Childhood and Adolescence. Evidence From the Global Burden of Disease Study. *JAMA psychiatry*. 2004;81(4):347-356.
- [6]. Campos, RAV. Impacto da ansiedade na qualidade de vida e no sucesso escolar de adolescentes. 2015. 57 f. Dissertação (Mestrado em Medicina). Universidade da Beira Interior. Covilhã, 2015.
- [7]. Kessler, RC., Berglund, P., Demler, O., Jin, R., Merikangas, KR., Walters, EE. Life time prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):593-602.
- [8]. Graça, RKJ. O impacto da ansiedade na qualidade de vida de adolescentes. 2022. 53 f. Dissertação (Master's Degree in Psychology, specialization in Educational, Developmental and Counseling Psychology). University of Coimbra, Coimbra, 2022.
- [9]. Vianna, R. Avaliação dos níveis de ansiedade de uma amostra de escolares no Rio de Janeiro através da Escala Multidimensional de Ansiedade para Crianças (MASC-VB). 2009.139 f. Dissertação (Master's in Psychology). Pontifical Catholic University of Rio de Janeiro. Rio de Janeiro, 2009.
- [10]. Assumpção Jr, FB, Kuczynski, E., Sprovieri, MH., Aranha, EMG. Quality of life evaluation scale (AUQEI): validity and reliability of a quality of life scale for children from 4 to 12 years-old. *Arq Neuro psiquiatr* 2000;58(1):119-127.
- [11]. Flôr, SPC., Flôr, SMC., Torres, FJR., Silva, MCA., Aguiar, LC., Fialho, MLS., et al. Anxiety and their disorder in adolescents: a literature review. *Research, Society and Development*. 2022;11(15):e437111537344.
- [12]. Grolli, V., Wagner, MF., Dalbosco, SNP. Depressive and Anxiety Symptoms in High School Adolescents. *Rev. Psicol. IMED*. 2017;9(1):87-103.
- [13]. Jatobá, JDVN., Bastos, O. Depressão e ansiedade em adolescentes de escolas públicas e privadas. *J Bras Psiquiatr*. 2007;56(3):171-179.
- [14]. Castro, YM., Peres, TG., Dutra, RP. Prevalência de ansiedade e fatores associados em adolescentes: uma Revisão Integrativa da Literatura. *Saúde Pública: Princípios e Práticas*. 2022;10(2):123-145.
- [15]. Kinrys, G., Wygant, LE. Anxiety disorders in women: does gender matter to treatment? *Rev. Bras. Psiquiatr*. 2005;27(Supl II):43-50.
- [16]. Borges, JA., Nakamura, PM., Andaki, ACR. High prevalence of anxiety and depressive symptoms in adolescents in the COVID-19 pandemic. *Rev. Bras. Ativ. Fis. Saúde*. 2022;27:e02587.
- [17]. Santos, RR., Junior, NMG., Martins, AM., Modena, CM. Gênero e práticas de saúde: singularidades do autocuidado entre adolescentes. *Rev. Psicol. Saúde*. 2017;9(1):37-57.
- [18]. Alencar, NES., Silva, GRF., Gouveia, MTO., Silva, ARV. R. Fatores associados à qualidade de vida relacionada à saúde de adolescentes. *Acta Paul. Enferm*. 2022;35:eAPE0189345.
- [19]. Benincasa, M., Custódio, EM. Avaliação da qualidade de vida em adolescentes do Município de São Paulo. *Bol. Psicol, São Paulo*. 2011;61(134):31-42.
- [20]. Santos, MVL. A relação da ansiedade e da depressão na qualidade de vida dos adolescentes. 2022. 104f. Dissertação (Master's Degree in Clinical Psychology). Institute of Psychology and Educational Sciences. Lusfada University. Lisbon, 2022.
- [21]. Freire, T., Ferreira, G. Health-related quality of life of adolescents: Relations with positive and negative psychological dimensions. *International Journal of Adolescence and Youth*. 2018;23(1), 11-24.
- [22]. Crockett MA, Martínez V. Depresión, ansiedad generalizada y riesgo de consumo problemático de sustancias en estudiantes secundarios. *Andes Pediatr*. 2023;94(2):161-169.
- [23]. Salvador MC., Matos, AP, Oliveira, S., March, JS., Arnanson, EO, Carey, SC, et al. A Escala Multidimensional de Ansiedade para Crianças (MASC): Propriedades psicométricas e análise fatorial confirmatória numa amostra de adolescentes portugueses. *Revista Iberoamericana de Diagnóstico y Evaluación*. 2017; 45(3):33-46.
- [24]. Essau, CA., Lewinsohn, PM., Lim, JX., Ho, MR., Rohde, P. Incidence recurrence and comorbidity of anxiety disorders in four major developmental stages. *Journal of Affective Disorders*. 2018; 1(228):248-53.
- [25]. Wiens, K., Bhattarai, A., Pedram, A., Dores, J., Williams, A. Bulloch, S. Patten. A growing need for youth mental health services in Canada: examining trends in youth mental health from 2011 to 2018. *Epidemiology and Psychiatric Sciences*. 2020;29:e115. doi.org/10.1017/S2045796020000281.