RESEARCH ARTICLE

Screening of Psychoemotional and Social Disorders in Adolescents

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Abstract: Objective: To apply Pediatric Symptoms Checklist on elementary and secondary students in public schools in Cascavel City-State of Paraná, in order to screen for psychoemotional and social disorders. **Methods:** Application of questionnaire on students aged 14 to 20 years old, who were between the 9th grade of elementary school and the 1st to 4th grade of secondary school, and were regularly enrolled in four public schools in Cascavel City-State of Paraná, from June 2018 to May 2019. The following variables were analyzed: gender, age, grade level, and the relationship of the three with the score on Pediatric Symptoms Checklist scale (cut off ≥ 28). Results Three hundred (300) questionnaires were distributed, of which only 210 were filled out. Of these 210, three were invalidated due to no or incomplete data, non-signing of the Parental Written Informed Consent form or Adolescent Written Informed Assent Form, or because they were not part of the research group age. Hence, 207 questionnaires were eventually analyzed, of which 81 (39.1%) respondents were male and 126 (60.9%) were female. Of these analyzed questionnaires, 42 (20.2%) presented adolescent positive score on the Pediatric Symptoms Checklist, 15 of which were male (18.5% of all males) and 27 of which were female (21.4% of all females). There was a correlation between being enrolled in the 9th grade of elementary school or the 1st grade of secondary school and presenting a positive score on the Pediatric Symptoms Checklist, this correlation did not occur between gender and age. **Conclusion** Being in the 9th grade of elementary school or 1st grade of secondary school was a risk factor for psychoemotional disorders. The use of a screening scale should serve as the source of screening for mental disorders in adolescence.

Keywords: *Adolescent, Questionnaire, Epidemiology, Mental disorders.*

Introduction

Mental health is defined as a state of welfare whereby an individual realizes their own abilities, that they can cope with the normal stresses of life, can work productively, and are able to make meaningful contributions to their community [1]. Mental health disorders are extremely variable but are generally characterized by a combination of changes in thinking, emotions, behavior, and relationships with other [1]; in children and adolescents they are often due to several factors: genetic; cerebral diseases such as epilepsy; domestic factors such as violence, adoption, bereavement, chronic adversity, and acute stressful events; problems in development; shelter; as well as cultural and

social aspects that impact significantly the child's development. The associations between behavioral problems and family environment variables have been consistently verified. The quantity or quality of negative life events from the family has been identified as particularly harmful to child development, being a predisposing factor to behavioral problems[2, 3].

In childhood and adolescence, the overall prevalence of mental disorders is around 15%, which tends to increase proportionally with age, and its average in pre-school is 10%, and among teenagers 16.5% [2]. In Brazil, studies have reported prevalence rates ranging from 7 to 13% [2]. Currently, estimates suggest that one in four to five children and adolescents in the world has some mental disorder [3].

There are currently several tools for the assessment of symptoms of mental disorders in childhood and adolescence. Some of the most used tools for both screening and for monitoring of children and adolescents are part of the Achenbach System of Empirically Based Assessment (ASEBA), including Child Behavior Checklist (CBCL), Youth Self Report (YSR), Teacher Report Form and Pediatric Symptoms Checklist (PSC), among others [4, 5].

The PSC is a screening questionnaire developed for use by health professionals to identify children and adolescents with psychoemotional and social problems, so that appropriate interventions can be initiated as early as possible; it is an easy screening tool to use, widely validated and reliable, and one of the most used for this purpose [6,7]. The aim of this study was to conduct a screening for psychoemotional disorders in adolescents in primary and secondary levels of public schools in the city of Cascavel-PR.

Methods

This was an epidemiological study of transverse and observational description. The survey was conducted on students aged between 14 and 20 years, who are between the 9th grade of elementary school and 1st to 4th year of high school. Each of the students was enrolled in one of four public elementary and secondary schools in the city of Cascavel-PR, from June 2018 to May 2019.

Before distributing the questionnaire, the Pediatric Symptoms Checklist, the Parental Written Informed Consent (PWIC), and the Adolescent Written Informed Assent (AWIA) were distributed in two copies, signed by the legal representative of the participant and the participant respectively. Participants 18 years and above signed the PWIC form themselves. The following variables were analyzed: gender, age, grade, and score on the PSC. For screening of psychoemotional and social disorders, the PSC questionnaire was applied, which consisted of 35 items on the frequency of internalizing symptoms (psychosomatic symptoms, anxiety, and depression), externalizing symptoms (hyperactivity, aggressive and impulsive behavior), and attention.

Scores were awarded based on the frequency with which the situation in question occurred; zero was awarded for "never", a point for "sometimes", and two points for "frequently". The cutoff point established for this study was greater than or equal to 28 points, in which case the result was considered positive, i.e. evaluating statement would have to be referred for evaluation by a mental health professional. Although the PSC is normally used for adolescents younger than 16 years, for this study it was considered for students aged up to 20 years, since the purpose of the study was the screening of adolescents and young high school students.

Statistical analysis of the adolescents were stratified according to age: early adolescents (10 to 13 years), middle adolescents (14 to 16 years), and late adolescents (17 to 20 years) [8]. For a description of quantitative variables, we considered the average statistics, median, minimum and maximum values, and standard deviation. Qualitative variables and percentage frequencies were also considered.

For evaluation of the association of the PSC score with age Student's t-test for independent samples was considered, and for association between qualitative variables, the Chi-square test was considered. IBM SPSS Statistics® software (version 20) was used for statistical analysis. P values smaller than 0.05 were considered statistically significant. This work was approved by the Research Ethics Committee of the State University of

West Paraná, Cascavel, PR, with opinion number: 2625850/2018.

Results

Of the 300 questionnaires distributed, 210 were completed. Of these 210, three were excluded: one due to lack of data, another for not signing the PWIC and/or AWIA, and the last because the respondent did not fall within the age range of the study group. Hence, 207 questionnaires were eventually analyzed. Of these, 81 (39.1%) respondents were male and 126 (60.9%) were female. Of the 207 adolescents, 42 (20.2%) had a score greater than or equal to 28 on the PSC, 15 of which were male (18.5% of all males) and 27 of which were female (21.4% of all females) (Table 1). The average age of those who had scores higher than the cutoff of 28 on the PSC was 15.6 years, while those with scores lower than 28 had an average age of 15.8 years. No early adolescent (10-13 years) showed greater PSC score than the cutoff of 28, whereas 35 (83.3% of the highest attainable score) middle adolescents and seven late adolescents (16.6% of all late adolescents) scored on the PSC (Table 1).

It was observed that 22 adolescents in the 9th grade of elementary school and 1st year of high school (30.6% of all 9th grade and 1st year adolescents) were positive on the PSC, and 20 (14.8%) of 135 adolescents in 2nd and 3rd years of high school also scored higher than 28 on the PSC. There was a correlation between being in the 9th grade of elementary school or 1st year of high school and having a positive score on the PSC (Table 1).

Table 1: Relation between sex, age, school grade and score at the PSC

PSC	Sex				p value
	Male		**Female**		
	n	%	n	%	
<28	66	81.5%	99	78.6%	0.611
≥ 28	15	18.5%	27	21.4%	
Total	81	100.0%	126	100.0%	
Adolescence	Sex				
	Male		Female		
	n	%	n	%	
Early: 10 to 13 years	3	2.38%	3	3.70%	
Middle: 14 to 16 years	99	78.57%	55	67.90%	0.229
Late: 17 to 20 years	24	19.05%	23	28.40%	
Total	126	100.00%	81	100.00%	
Adolescence	PSC score				
	< 28		≥ 28		0.229
	n	%	n	%	
Early: 10 to 13 years	6	3.64%	0	0.00	
Middle: 14 to 16 years	119	72.12%	35	83.33%	
Late 17 to 20 years	40	24.24%	7	16.67%	
Total	165	100.00%	42	100.00%	
PSC	Grade				
	9th grade elementary or 1st year high school		2nd or 3rd year of high school		
	n	%	n	%	
<28	50	69.4%	115	85.2%	0.007*
≥ 28	22	30.6%	20	14.8%	
Total	72	100.0%	135	100%	

* p values smaller than 0.05 were considered statistically significant

Discussion

Adolescence is a period characterized by the need for self-discovery, the need to build a personal identity as adulthood approaches, accentuated group trend, the need to intellectualize and fantasize, religious crises, sexual evolution manifesting, vindicatory social attitude, successive contradictions in the manifestations of conduct, progressive separation from parents, constant mood swings, and mood and temporal displacement [9].

To the health professional, it is often difficult to distinguish what is normal development from what is a symptom of mental disorders [7, 8]. Teenagers are susceptible to various indicators of behavioral problems that suggest mental disorders. These behaviors should be evaluated seriously by healthcare professionals, as they not only significantly interfere with the daily life of adolescents, affecting their academic and work performance, but also impede their

healthy development and prevent compliance with the stage of developmental tasks, impairing entry into adult life [2, 3, 10]. In this research, the girls showed a higher percentage of mental disorders, which corroborates other studies showing prevalence of higher mental disorders in female adolescents.

The main symptoms presented by the girls were problems of internalizing behavior, such as depression and anxiety, while boys showed higher rates of externalizing behavioral disorders and conduct, these results can to vary according with degree of income and level of development of the host countries [2, 3 ,4, 11, 12]. In this reasearch, there was a larger percentage of mental disorders in middle adolescence, unlike in other studies where younger adolescents were shown to experience more mental disorders. Although these disorders are usually initiated during childhood, puberty is when the pre-existing problems associated with adolescent behaviors become more visible and better appreciated [5, 13, 14].

Some studies showed that from the age of thirteen, there is an increased demand for mental health services in adolescents, which corroborates the findings of this study that there was a correlation between the tendency for psychoemotional disorders and students at the end of elementary school and in early high school, which justifies that increasing psychological consultations.

In late adolescence tends to regress the prevalence of psychoemotional disorders [3, 7, 10, 15]. Mental disorders have emerged as major challenges faced in health services. Often, before the diagnosis of a psychiatric disorder, it is possible to find evidence of psychological distress in adolescents. Thus, early identification of mental disorders, as well as major risk factors, can help in the proposition of preventive measures and more specific control [16, 17, 18, 19].

Conclusion

In this study, adolescents enrolled in the 9th grade of elementary school and 1st year of high school years, we have established what constitutes risk factors of psychoemotional disorders. The use of questionnaires as a screening method for mental disorders is important for early diagnosis, and should be used in the pediatric clinic and primary care, where clinical and frequent outpatient follow-up of these patients for early intervention is required. This will help reduce the risk of comorbidities and improve prognosis.

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