

Social adversity and psychiatric disorders: a comparative study between students in public and private secondary schools

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Original article

SUMMARY

Psychiatric disorders in adolescence are linked to social adversity, family dysfunction and abuse. In Mexico City, up to 68% of adolescents have experienced at least one chronic adversity. Mental health problems such as depression and attention deficit hyperactivity disorder are frequent and cause academic problems. The social and economic differences between students in public and private junior high are well known. However, it has not been established what the differences between social adversity and psychiatric disorders are among these populations. The aim of this investigation was to determine and compare these features, in a clinical two-step procedure, in junior high students from southern Mexico City.

Method

Agreement for convenience was carried out with seven junior high schools from southern Mexico City, four public and three private. With prior parental consent and adolescent assent, a clinical screening that evaluated internalized and externalized symptoms was applied to 1 474 students. Positive screening for probable psychopathology was found in 419 students. Of these, 319 accepted a clinical interview and 177 were interviewed.

Results

Of the 117 adolescents interviewed, 83.8% were cases. There were more public school students than private school students: 64 (91%) vs. 34 (71%) ($\chi^2=7.85$, $P=0.005$), respectively. The average age was 13.39 years ($SD=0.98$). Family dysfunction was found in 57 (48.71%) of the 117 adolescents. Overall performance was assessed by the GAF, and the mean score of all students was 65.48 ($SD=11.68$). Major depressive disorder and attention deficit hyperactivity disorder were the most frequent diagnoses, with 48.7% and 59.8%, respectively. Psychological and physical abuse, family dysfunction, and major depressive disorder occurred in significantly more students from public schools.

Conclusions

Social adversity and depression were present and more associated in

students from public than private junior high schools. This represents a challenge for educational and mental health services for early recognition and prompt treatment, as there is a link between social welfare and mental health.

Key words: Psychiatric disorders, social adversity, junior high schools.

RESUMEN

Los trastornos psiquiátricos en la adolescencia se vinculan con algunas adversidades sociales como la disfunción familiar y el abuso. En la Ciudad de México, hasta el 68% de los adolescentes ha sufrido al menos una adversidad crónica y los problemas de salud mental, como la depresión y el trastorno por déficit de atención con hiperactividad, son frecuentes y ocasionan problemas académicos. Las diferencias sociales y económicas de los alumnos de secundarias públicas y privadas son bien conocidas, sin embargo no se ha establecido cuáles son las diferencias entre la adversidad social y los trastornos psiquiátricos entre estas poblaciones. El objetivo de esta investigación fue diagnosticar, en un procedimiento clínico de dos pasos, y comparar estas características en los adolescentes de secundarias del sur de la Ciudad de México.

Método

Se realizó un acuerdo por conveniencia con siete secundarias del sur de la Ciudad de México, cuatro públicas y tres privadas. Previo consentimiento de los padres y asentimiento de los adolescentes, se aplicó un tamizaje clínico que evaluó sintomatología internalizada y externalizada en 1 474 alumnos. El tamizaje positivo a probable psicopatología se encontró en 419 alumnos, de los cuales 319 aceptaron la entrevista clínica y se presentaron a la misma 177.

Resultados

De los 117 adolescentes entrevistados, 83.8% fueron casos, más frecuentes en los alumnos de escuelas públicas que en las privadas: 64 (91%) vs. 34 (71%), ($\chi^2=7.85$; $P=0.005$). La edad promedio fue

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Received first version: July 14, 2014. Second version: September 24, 2014. Accepted: Septiembre 25, 2014.

de 13.39 años (DE=0.98). La disfunción familiar se encontró en 57 (48.71%) de los 117 adolescentes. El funcionamiento general fue evaluado mediante el GAF, la puntuación media de todos los alumnos fue de 65.48 (DE=11.68). El trastorno depresivo mayor y el trastorno por déficit de atención con hiperactividad fueron los diagnósticos más frecuentes: 48.7% y 59.8%, respectivamente. El abuso psicológico y físico, la disfunción familiar y el trastorno depresivo mayor se presentaron significativamente más en los alumnos de las escuelas públicas.

Conclusiones

La adversidad social y la depresión se presentan y se asocian más frecuentemente en alumnos de secundarias públicas que en las privadas. Esto representa un reto para los servicios educativos y de salud mental para el reconocimiento temprano y la atención oportuna, ya que existe una vinculación entre el bienestar social y la salud mental.

Palabras clave: Adversidad social, trastornos psiquiátricos y escuelas secundarias.

INTRODUCTION

Many mental health disorders are linked to stressful situations or living conditions, known as social adversities. When these occur early in life, they can increase the risk of depression in adolescence;¹ some frequent social adversities in adolescent populations are family dysfunction and abuse in different manifestations (sexual, physical, emotional, and neglect). These conditions have been linked to poverty or economic adversity.²

Family dysfunction is related to losses due to death or abandonment, discord in relationships, financial difficulties, parental psychiatric illness, and problems in upbringing. Adolescents who had severe problems with family dysfunction throughout childhood have eight times' greater risk of presenting behavioral problems, and 4.8 times' greater risk of developing depressive problems.³ Rutter described six factors for family adversity (low economic income, overcrowding, maternal depression, parents' antisocial behavior, parental conflict, and removal of the minor from the home). These have been extensively studied and linked to psychiatric disorders.⁴

Poverty, violence, and abuse are most frequently linked to mental health problems in children and adolescents, both in developed⁵ and developing countries.

A study based on school records in Brazil found that poverty and violence in children and adolescents from the favelas were significantly more associated with mental health problems compared to those who lived in established urban areas.⁶ In Mexico City, 68% of adolescents have suffered at least one chronic adversity in childhood, and up to 7% have suffered four or more. The most frequent adversities are lack of financial resources and violence; males suffer greater negligence and females suffer more sexual abuse.⁷ The mental health survey on adolescents in Mexico City approached a broad open urban population and reported that the most frequent problems in women were anxiety/depressive disorders. In men, it was behavioral-impulsive disorders.⁸

The appearance of adverse life experiences such as abuse, financial difficulties, single-parent families, and parental psychopathology is linked to psychiatric disorders in adolescents, especially depression.⁹

There are different investigations in junior high student populations which demonstrate the presence of depressive, anxiety, and behavioral symptoms that affect academic achievement and subject them to greater risk of presenting other mental health problems, including alcohol and drug consumption.¹⁰

The assessment of depressive symptoms in junior high students in Mexico City demonstrated that 8.2% had had a depressive episode, 13.5% in females and 3.8% in males.¹¹ Depressive symptoms have been significantly associated with low academic achievement and inadequate family dynamics in junior high students in Mexico City and Mexico State.^{12,13} A significant relationship between symptoms of depression and stress levels of life events in the social sphere have been reported in high school students in Mexico City,¹⁴ and an association between depressive distress and a history of sexual abuse has also been described in junior high students in Mexico City.¹⁵

The economic and social differences between public and private junior high schools are widely known, both in Mexico and other Latin American countries.¹⁶ In Argentina, depressive symptomatology was compared between public and private junior high students, finding that public school students reported greater depressive symptomatology.¹⁷

One of the most important limitations in assessments of junior and high school students is the use of self-applicable instruments, which really only report the set of symptoms and not certain diagnoses, which are only obtainable by means of clinical interviews.

Exactly what the differences are between public and private junior high students in Mexico for social adversity factors and psychiatric disorders has not yet been reported. The aim of this investigation was therefore to diagnose, in a two-step clinical procedure, and compare these characteristics in junior high adolescents in southern Mexico City.

MATERIAL AND METHODS

Procedure

The project fit with the ethical norms of human research in the Helsinki Declaration of 1975. It was approved by the

Research Ethics Committee of the National Institute of Psychiatry Ramón de la Fuente Muñiz (INPRFM). Informed consent was obtained from parents, and a participant agreement was obtained from the directors of four public and three private junior high schools in Tlalpan, Mexico City. A seminar was held with teachers from each school, with the aim of explaining the interest, aims, procedure, and scope of the investigation. With the assent of each student, a voluntary clinical screening test (CS) was applied to all the students present during the scheduled days in regular classes. These were applied by members of the research team who answered any doubts regarding how to complete the CS.

All students and parents whose CS was positive were contacted via telephone up to three times, offering an assessment appointment for the Clinical Interview (CI). The CI was applied in the Adolescent Clinic (AC) of the INPRFM by a psychiatrist certified by the Mexican Council of Psychiatry, with more than five years' clinical experience, and trained in the application of the CI. They were also blind to the results of the CS. All students with an active diagnosis received free treatment in the AC of the INPRFM for one year.

Subjects

From a total of 1,991 students, some 1 474 male and female adolescents participated from the first and second grade of public (N=752) and private (N=722) schools who responded to the CS. The CS was positive for 419 adolescents; 231 from public schools and 188 from private schools. Assent and informed consent were obtained from the adolescents and their parents, respectively, in order to carry out the Clinical Interview (CI) on 319 students; 184 from public schools and 135 from private schools.

Instruments

A. Clinical screening (CS)

The CS was an instrument designed especially to identify problems with mental health and alcohol/substance consumption in adolescents. It is made up of five subscales:

1. Assessment of alcohol and drug consumption (*Problem Oriented Screening Instrument for Teenagers*, POSIT).¹⁸⁻²⁰
2. Assessment of anxiety symptoms (*Screen for Child Anxiety Related Emotional Disorders*, SCARED).²¹⁻²³
3. Assessment of depressive symptoms (*Depression Self Rating Scale*, DSRS).^{24,25}
4. The list of symptoms of attention deficit hyperactivity disorder (ADHD) (DSM-IV).^{26,27}
5. The 'evaluación dimensional de psicopatología para adolescentes' [in English: dimensional assessment of psychopathology for adolescents] (EDPA).²⁸

The CS was considered positive for each subject when at least one of the subscales was greater than 1.5 standard deviation for the value of the same group.

1. POSIT

This was developed by the National Institute on Drug Abuse (NIDA) in the United States in 1991. With the aim of validating the instrument transnationally and transculturally, NIDA promoted its localization into Spanish, and it was later adapted for the Mexican population. It is a self-applicable instrument which originally contained the following areas: a) use and abuse of substances, b) physical health, c) mental health, d) family relationships, e) relations with friends, f) level of education, g) vocational interest, h) social habits, i) entertainment and recreation, j) criminal or aggressive behavior. The reliability study of the instrument in English reported a Cronbach's alpha of .70; the intra-class coefficients of correlation reported ranges of $r=0.72$ through 0.88; the temporal reliability reported ranges of $K=0.42$ through 0.73.¹⁸ The Mexican sample was made up of 310 cases in 22 treatment centers. Of the 139 original questions, the Mexican version was made up of 81, and obtained a Cronbach's alpha of 0.9057.²⁰

2. SCARED

The SCARED is an instrument that was originally developed in English. It has two versions; one for children and one for parents. The construct validity analysis of the North American version reported five factors: somatic/panic, generalized anxiety, separation anxiety, social phobia, and school phobia; Cronbach's alpha was reported from 0.74 through 0.93. The intraclass coefficients of correlation were reported ranging from 0.70 through 0.90.²¹ The Mexican version was translated, adapted, and studied in an adolescent population attending schools. The instruments were provided to the adolescents and their parents; 179 were duly completed by both the adolescents and their parents. The construct analysis of this version brought up the same five factors as the North American version, for both the parents and the adolescents. The general internal consistency of the 41 questions in the adolescent version gave an alpha value of 0.90.²³

3. Birleson Scale

This instrument has been used internationally to assess depressive symptomatology in children and adolescents.²⁴ The scale has been translated and its clinimetric properties studied in an adolescent population in Mexico City; the Cronbach's alpha was 0.85 for the clinical population and 0.77 for the open population. A cutoff point of 14 obtained the greatest stability between sensitivity and specificity, at 87 and 74, respectively.²⁵

4. ADHD Scale

This instrument is a list of the symptoms of ADHD set out in the DSM-IV. It consists of 18 questions where the construct analysis brought up two factors: inattention and hyperactivity/impulsivity.²⁶ The psychometric properties of this instrument have been validated in 14 countries, including

some Spanish-speaking ones. Internal consistency was reported with a Cronbach's alpha of 0.795 and the temporal reliability of the instrument obtained a correlation of $r=0.84$ with a range of 0.82 through 0.87.²⁷

5. EDPA Scale

The EDPA is an instrument which includes dimensional assessment of psychopathology in adolescents. It was designed by the Adolescent Clinic at the INPRFM and it has two versions, one for parents and another for adolescents. The CS included the adolescent version, made up of 66 Likert-type questions. The validity study in a clinical population of adolescents demonstrated a global internal consistency, with a Cronbach's alpha of 0.92. However, there was a difference between the alpha values for internalized and externalized symptomatology, at 0.89 and 0.85, respectively. The temporal reliability of the instrument in both the parent and the adolescent version was $r=0.87$.²⁸

B. Clinical Interview (CI)

The CI used was the Semi-Structured Interview for Adolescents [ESA in Spanish], which is an interview that allows the primary diagnostic criteria in the DSM-IV to be established, as well as questioning characteristics of life and social adversity related to family, home, school, and work in a structured manner. Family dysfunction was coded as "present" when at least two of the following elements existed: single-parent family, parental psychopathology, and financial difficulty. This interview covers the primary internalized and externalized conditions. It allows a diagnosis to be established in the current moment, throughout a lifetime, or even the identification of symptoms as traits in the patient. The Kappa (K) coefficients of correlation in the inter-rater reliability study of the actual diagnosis were: major depressive disorder (MDD) 0.92; dysthymic disorder (DD) 0.81; separation anxiety disorder (SAD) 0.74; attention deficit hyperactivity disorder (ADHD) 0.75; behavioral disorder (BD) 0.97; and oppositional defiant disorder (ODD) 0.92. The Kappa (K) coefficients of correlation in the test-retest temporal reliability study were: MDD 0.59, DD 0.40, SAD 0.58, ADHD 0.78, BD 0.85, ODD 0.51. The inter-rater K coefficients of correlation for the primary diagnostic categories obtained a range of 0.74 through 0.97 with a median of 0.85. These results are very similar to those reported by other researchers with different semi-structured interviews such as the Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) which reports a range of 0.65 through 0.96 with a median of 0.87; the Interview Schedule for Children (ISC) reports a range of 0.64 through 1, with a median of 0.85.²⁹ The ESA integrates the assessment of global functioning through the (*General Assessment Function*, GAF). The GAF is a numerical scale (0-100) used to assess the level of social, occupational, and psychological function;³⁰ lower scores indicate greater dysfunction, and severe dysfunction is considered when scores are ≤ 30 .³¹

Statistical analysis

Central tendency methods were used for the description of demographic variables, the percentages were contrasted through X2 tests, correlations were established through Pearson's r coefficients, and the value of significance was established with $P<0.05$. The CS was subjected to a diagnostic test against the results of the CI and the following values were obtained: sensitivity=0.83; specificity=0.80; positive predictive value=0.96, and negative predictive value=0.45

RESULTS

Of the 319 aforementioned students, 117 attended the CI; 70 (59.8%) belonged to public schools, and 47 (40.2%) belonged to private schools. Some 98 (83.8%) were cases with at least one diagnosis, and there was a greater percentage of cases identified by the CI among students at public schools than among those at private schools 64 (91%) vs. 34 (71%), ($\chi^2=7.85$; $P=0.005$) respectively. Only two cases (1.7%) did not accept treatment after the CI had been carried out. Of the total 117 students, 50 (42.7%) were female and 67 (57.3%) were male. There was a trend for a greater number of women in public schools than in private schools 35 (50%) vs. 15 (30%), ($\chi^2=3.75$; $P=0.053$), respectively. The average age was 13.39 years (SD=0.98).

Social adversity

Family dysfunction was found in 57 (48.71%) of the 117 adolescents. General functioning was assessed through the GAF and the mean score of all the students was 65.48 (SD=11.68).

Psychiatric disorders

The most frequent internalized diagnosis was MDD, which was present in 57 (48.7%) of the total assessed sample. Suicidal ideas and behavior was present in five (4.3%) subjects. The most frequent anxious diagnosis was specific phobia: 20 (17.1%). The most frequent externalized diagnosis was ODD: 34 (29.1%); alcohol and/or substance consumption was only found in three (2.6%) of the adolescents. ADHD was present in 70 (59.8%).

Comparison of social adversities and psychiatric disorders

When comparing all the diagnoses, only MDD was significantly more present in students at public schools; in terms of social adversities, psychological and physical abuse, as well as family dysfunction were significantly more present in public school students. Further details can be seen in Table 1. Only ODD presented a tendency to be more frequent in pub-

Table 1. Comparison of diagnosis and social adversity between public vs. private junior high students

	Junior high schools				χ^2	P
	public (N=70)		private (N=47)			
	N	%	N	%		
MDD	41	58.6	16	34.0	6.77	0.008
PPA	6	8.6	0	0.0	4.24	0.040
FD	41	58.6	16	34.0	6.77	0.008

MDD = Major depressive disorder; PPA = Psychological and physical abuse; FD = Family dysfunction.

lic school students: 34.3% vs. 21.3%, ($\chi^2=2.3$, $P=0.09$). On performing a comparative analysis by gender, it was found that specific phobias were more present in women: 26% vs. 10.4% ($\chi^2=4.8$; $p=0.02$); whereas ADHD was more present in men: 70.1% vs. 46% ($\chi^2=6.94$, $P=0.008$). The correlation between family dysfunction and MDD obtained $r=0.418$, $p<0.0001$. The average GAF score for the public school students was significantly lower than that reported for private school students: 63.2 vs. 68.8; ($t=2.64$; $gl=115$, $P=0.009$).

DISCUSSION

The results of this research demonstrate that family dysfunction and psychiatric disorders are present in both public and private junior high school students. Half of the adolescents interviewed in both school groups reported family dysfunction and MDD; however, MDD, family dysfunction, and physical and psychological abuse were more frequent in students from public schools, and family dysfunction correlated significantly with MDD.

Of the 1474 students at seven schools who responded to the CS, 419 were positive. Of these, only 117 completed the CI, and 98 (83.8%) were positive with at least one diagnosis in the CI. It is notable that only 117 (27.92%) of the 419 probable cases ultimately attended the CI. Some epidemiological studies have shown that only 25% of parents of subjects with symptoms of behavioral or affective disorders considered that their children needed medical care, and of those, only 13% attended mental health services.³² Seeking specialized care has been associated with a greater intensity of the disorder and with a higher level of parental education.^{33,34} Despite the parents of private school children probably having a higher level of education, we did not find greater interest in them to seek treatment.

One Australian prospective study for 14 years in junior high school students determined that up to 29% of men and 54% of women had a psychiatric disorder during their adolescence, and of these, 60% continued into their young adult life. Adolescents from single-parent families (separated or divorced parents) had 1.6 times' greater risk of continuing with psychiatric conditions than those from two-parent

families.³⁵ In spite of the difference of our transversal observation with this longitudinal one, the high prevalence of psychiatric disorders among apparently healthy subjects attending school is notable; the social adversity of a one-parent family confers greater risk in the continuity of disorders.

It is relevant that we have found a greater number of cases of students with psychiatric disorders in public schools, which are attended by adolescents with greater levels of economic adversity and family dysfunction. This interaction of inter-generational risk transfer for the appearance of psychiatric disorders has been described previously² and it represents a challenge for the participation of (primarily public) schools in the early recognition of social adversity and symptoms of psychiatric disorders in their students.⁹ The global functioning of these adolescents was not good, and the average GAF value of all the students was 65.48. The range between 61-70 indicates: "Some mild symptoms: depressed mood or mild insomnia, difficulties in social, work, or school activities, truancy or stealing from home, although functioning is quite good in general and the subject has significant interpersonal relationships".³⁰ This level of general function leaves behind the possibilities of an optimum integral performance of adolescents, which should be placed above 80. The difference in the functioning values among school students was significantly lower for public schools, however, six out of 100 points in the global assessment make this difference stochastic.

The primary diagnoses found were MDD, ADHD, and ODD: 50%, 60%, and 30%, respectively. Anxiety problems were more frequent in women, and ADHD was more present in men. These findings coincide with the reports established in the adolescent psychopathology survey of Mexico City. This survey was made up of a stratified probabilistic sample of 3 005 subjects, representative of two million adolescents living in the city. There was a participation of 2 847 adolescents and at least one of their parents. The most frequent diagnoses for women were affective-anxiety and for men they were impulse control and disruptive behavior.⁷ It has been reported how MDD and ADHD explain the majority of the variance of psychiatric disorders associated with junior high students abandoning school in the urban zone of Mexico City.³⁶ Early recognition of these conditions, associated social adversity, and timely intervention could all reduce school abandonment and improve the quality of life of adolescents and their families. However, it is necessary to work on access to mental health services, given that these are limited to 30% of the general population in Latin America.³⁷ Problems of economic adversity, single-parent families, parents' psychopathology, and psychological/physical abuse as environmental elements interfere with the adolescent and their biology³⁸ and manifest themselves in greater psychopathology in public junior high students.

One of the strengths of this investigation is related to its two-step assessment (CS and CI) and to the certainty of the

diagnosis established. One weakness was that the schools were selected by convenience, as only schools which were accepted by the directive participated.

CONCLUSIONS

Mental health problems do exist in regular public and private junior high students. In the first group, we identified greater rates of MDD, psychological and physical abuse, and family dysfunction. Elevated social adversity correlated significantly with depression, which indicates the necessity for linking mental health problems with social wellbeing, and coordination efforts by the schools between the students, their parents, and teachers.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the financial support of funds from SEP/CONACYT (SEP-2003-C01-8).

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Declaration of conflict of interests: None