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Depression prevalence in adolescents

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Introduction. This study aimed to know the prevalence of depressive manifestations in adolescents and the socio-demographic variables associated with them.

Method. Design: observational, descriptive, cross-sectional study. Location: three urban teaching centers. Participants: 389 students of obligatory secondary education from 12 to 16 years who answered the questionnaire freely and anonymously. Measurements: Questionnaire of Depression for Children (CDS), self-applicable, validated in their Spanish adaptation for their individual and collective administration. Family APGAR questionnaire. Variables regarding sociodemographic, academic yield and presence of chronic illnesses circumstances.

Results. 10 children were excluded because they answered in an incomplete way. In the 379 study subjects, 39 had a score on the CDS in the depressive range (decatype ≥ 8): 10.29 % (95 % CI: 7.2 %-13.3 %). In the bivariate analysis, we only found differences for the presentation of depressive symptoms in connection with the existence of family dysfunction diagnosed by the APGAR test: 24.4 % versus 6.1 % ($p < 0.0001$). In the logistic regression analysis, the model that best predicts the presence of one diagnosis of depression includes the family dysfunction variable, with an OR = 4.27 (95 % CI: 1.98-9.21) for mild dysfunction and OR = 14.44 (95 % CI: 4.61-45.17) for serious dysfunction, and sibling number with OR = 0.56 (95 % CI: 0.33-0.93).

Conclusions. Prevalence of depressive manifestations among adolescents is high, being more frequent in members of dysfunctional families, while a greater number of siblings would have a protective effect.

Key words:
Depression. Prevalence. Adolescents.

Actas Esp Psiquiatr 2005;33(5):298-302

Prevalencia de depresión en adolescentes

Introducción. El objetivo del estudio es conocer la prevalencia de manifestaciones depresivas en adolescentes, así como las variables sociodemográficas asociadas con las mismas.

Método. Diseño: estudio observacional descriptivo transversal. Emplazamiento: tres centros de enseñanza urbanos. Participantes: 389 alumnos de enseñanza secundaria obligatoria entre los 12 y 16 años que contestaron de forma libre y anónima el cuestionario. Mediciones: Cuestionario de Depresión para Niños (CDS), autocumplimentable, validado en su adaptación española para su aplicación individual y colectiva. Cuestionario APGAR familiar. Variables relativas a circunstancias sociodemográficas, rendimiento académico y presencia de enfermedades crónicas.

Resultados. Se excluyeron 10 sujetos que contestaron de forma incompleta. En los 379 sujetos a estudio, 39 presentaron puntuaciones del CDS en rango depresivo (decatipo ≥ 8): 10,29 % (IC 95 %: 7,2-13,3 %). En el análisis bivalente sólo encontramos diferencias para la presentación de manifestaciones depresivas en relación con la existencia de disfunción familiar diagnosticada por el test de APGAR: 24,4 % frente a un 6,1 % ($p < 0,0001$). En el análisis de regresión logística el modelo que mejor predice la presencia de un diagnóstico de depresión incluye las variables disfunción familiar, con un OR de 4,27 (IC 95 %: 1,98-9,21) para disfunción leve y OR de 14,44 (IC 95 %: 4,61-45,17) para disfunción grave, y número de hermanos con OR de 0,56 (IC 95 %: 0,33-0,93).

Conclusiones. La prevalencia de manifestaciones depresivas entre adolescentes es elevada, siendo más frecuente en miembros de familias disfuncionantes, mientras que un mayor número de hermanos tendría un efecto protector.

Palabras clave:
Depresión. Prevalencia. Adolescentes.

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INTRODUCTION

Depression is a mood state disorder which, according to the WHO, affects 3 %-5 % of the world population, this

being equivalent to about 120-200 million persons. In turn, depressive patients represent about 20 % of the patients in the general medical consultation and more than half of the patients seen in the psychiatry clinic¹. In a study performed in three rural locations of Castilla-La Mancha, a prevalence of depressive disorders among primary health care users of 17.6 % and an estimated prevalence in the general population of 6.59 % was found².

There are many studies on prevalence, diagnosis and treatment of depressive disorders in the adult population, however those performed in the child and adolescent population are few, due to the diagnostic difficulty in this stage of life. This is because the symptoms are non-specific and due to the process of change in the adolescence. The few studies published have manifested that the prevalence of child depression exceeds 2 %, this being 5 %-8 % among adolescents^{3,4}.

Depression may be a very important problem for the adolescent's health and social integration, causing low scholastic performance, inadequate social behaviors and family repercussions.

Our objective is to know the prevalence of depressive manifestations in school children from Albacete whose ages range from 12-16 years and the socio-demographic variables associated with them.

METHODS

This is an observational, descriptive, cross-sectional study.

Students from obligatory secondary school (OSC) from three education centers of the municipality of Albacete were invited to participate in the study. These centers were the private schools subsidized by public authorities Dominicas, Aristos and Nuestra Señora de Montserrat.

The sample was collected in May and June 2002. All school children between 12 and 16 years from the participating centers were included. Once the content of the questionnaire and the study objective were explained, they agreed to fill out the form anonymously and freely.

All those who voluntarily refused to participate in the study and those having any mental deficiency or difficulty to fill out the questionnaire by themselves were excluded from the study. Furthermore, those questionnaires that were not totally answered and those that had more than one answer in the same block of questions were discarded.

Calculation of the sample size was performed for an estimated prevalence of 6 % with accuracy of 2.5 % and 95 % confidence level, so that the size would be 347 study subjects, to which we would add 10 % due to possible lack of response and collection and filling-out errors.

The presence of depressive manifestations was determined with the CDS questionnaire⁵ (questionnaire of depression for children), self-applicable, which includes a psychometric scale with 66 items, 48 of depressive type (as «I feel lonely many times») and 18 of positive type (such as «I feel happy most of the time»), mixed to reduce a halo tendency in the responses, and to measure «incapacity to experience pleasure or fun» as a component of depression. This makes it possible to obtain two dimensions or general and independent scales, a depressive total, with several subscales, that assess affective response, social problems, self-esteem, concern about death/health, guilty feelings and several depressive feelings and a positive total, with other subscales that assess mood-happiness and several positive feelings. A diagnosis of depression is established with CDS scores corresponding to a decatype of 8 or more.

The Spanish adaptation of the CDS questionnaire is validated for individual and collective application among 8-16 year old subjects. Since the original Australian version, different validation studies have been performed in countries such as the USA, France, Italy and Japan. Its validation in Spain began in 1983. In the original samples, good reliability and internal consistency were observed, obtaining a Cronbach alpha coefficient of 0.96, and concordance of 0,74, test-retest that have been confirmed in later studies and in the Spanish adaptation. The test itself has response sheets and correction template.

The family APGAR questionnaire has five questions, each one with a score between 0-2, that assess the relationship

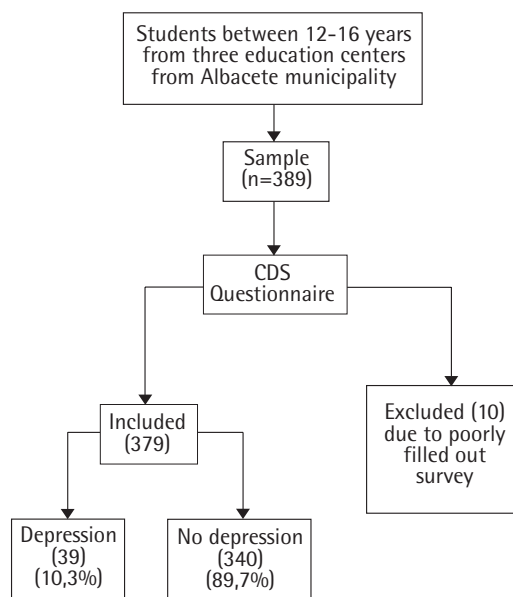


Figure 1 | Observational, descriptive, cross-sectional study on 379 students between 12-16 years from three obligatory secondary education centers of Albacete to determine the prevalence of depressive manifestations.

of co-existence between parents and children in the family setting. Moderate family dysfunction is considered to be the score between 4-6 and serious dysfunction the score of ≤ 3 .

Together with these two scales, different sociocultural and demographic variables that could influence the presence of depressive manifestations were recorded: age, gender, family composition (the siblings of the family nucleus and their place among them were counted. In addition, the persons with whom they lived were counted, there being four options to answer if they live with both parents, with only one of the two, or with some other relative). Other options were relationship between father and mother (it is directly asked if the parents are separated), job of the parents (by which the social class was estimated according to the classification proposed by Domingo and Marcos⁶), scholastic performance (repetition of courses and number of subjects failed at the end of the previous course), presence or not of chronic disease and school course.

Permission was requested to the inspector of the Provincial Branch area of the Education Office to conduct the study in the mentioned centers. Once agreement was reached with the center management on the day and time that the questionnaires would be administered, these were given to the students. The groups were formed, respecting organization by classes. The objective of the study and correct way of filling it out were carefully explained, previously mentioning its voluntary and anonymous character. Each one of the questionnaire questions was read out loud by one of the team members while it was being read by the students and leaving a sufficient time interval between questions to facilitate their understanding and for all of them to be able to answer at the same time. After, once the questionnaire was filled out, using the correction template, it was collected and investigators other than those who collected them did the numeric evaluation.

The statistical analysis was performed with the SPSS program, version 10, for Windows and EPIINFO 6. Prevalence was determined, with a 95% confidence interval, calculated with the CSAMPLE of EPIINFO module. The chi-squared test was used to compare the categoric variables and the Mann-Whitney U test for the comparison of continuous variables, as they do not have a normal distribution. The statistical study was completed with a logistic regression analysis, where the dependent variable was the presence or not of depressive manifestations.

RESULTS

A total of 379 (97.4 %) in the sample of 389 students were included and 10 were excluded (2.6 %) due to lack of answers or double answers on the questionnaire. No student refused to participate.

The total number of subjects who scored positive on the test was 39, 32 (8.4 %) of whom had mild depression and 7

(1.8 %) had scores in the serious depressive range. As a whole, the prevalence of depressive manifestations among the 379 study subjects was 10.29 %, with a 95 % confidence interval of 7.2 %-13.3 %.

The data of the different demographic variables and family relationship are shown in tables 1 and 2. No differences were found in the bivariate analysis for the presentation of depressive symptoms in relationship with course, age, gender, if the subject lives with his/her parents, with only one of them or with other relatives, if the parents are separated or work, socioeconomic level of the family, number of failures in the past year and suffering chronic diseases. Subjects with family dysfunction diagnosed by the APGAR test had greater prevalence of depressive manifestations with 24.4% versus those who did not have them with 6.1% ($p < 0.0001$).

In the logistic regression analysis, the model that best predicts the presence of depressive manifestations includes family dysfunction variables, with an OR of 4.27 (95% CI: 1.98-9.21) for mild dysfunction and OR of 14.44 (95% CI: 4.61-45.17) for serious dysfunction, and number of siblings with OR of 0.56 (95% CI: 0.33-0.93). This indicates that when there are more siblings, there is less likelihood of presenting depressive symptoms.

DISCUSSION

In our study, we have found a high prevalence of depressive manifestations in school age: 10.29 %, substantially

Table 1	Distribution by demographic variables and course in adolescents based on presence or not of depressive manifestations	
	Depression	No depression
Gender		
Boys	16	173
Girls	23	167
Age		
12 years	6	26
13 years	10	93
14 years	11	93
15 years	6	77
16 years	6	51
Course		
1 st	10	87
2 nd	16	108
3 rd	6	76
4 th	7	69

Table 2		
Family situation, school performance and suffering chronic diseases in adolescents based on the presence or not of depressive manifestations		
	Depression	No depression
No. of siblings		
One	4	23
Two	27	208
Three or more	8	109
Lives with...		
Father and mother	35	308
Others	4	32
Parents separated		
Yes	2	23
No	37	317
Socioeconomic level		
Class I	1	19
Class II	5	50
Class III	12	104
Class IVa	13	119
Class IVb	6	27
Class V	2	8
Class VI	0	13
Family dysfunction*		
No	18	275
Mild	14	55
Serious	7	10
Failures		
Yes	15	124
No	24	216
Chronic disease		
Yes	7	36
No	32	304
*Chi ² : 24.05; p < 0.0001.		

greater than that reported in some previous reviews such as the studies of Son and Kirchner³ and Kessler et al.⁴, in which different epidemiological studies were collected. They obtained about 2 % in children before puberty and between 5 %-8 % of depressive disorder prevalence in adolescents, determined from interviews with a specialist and different measurement scales.

In the screening of depressive disorders in children, different scales have been used, such as the extension of the Beck scale for adults and its transformation into a questionnaire for children⁷ and the Children's Depression Inventory

(CDI), used in adolescents from 10-11 years and even in 15-70 month old children for which the parents answered the test. This latter scale, even though it is a test that assesses the non-specific psychopathological symptoms more than being a scale measuring pure depression, has been shown to have good sensitivity and specificity, and to be a valid test for screening depressive risk in the child population, however it has not been validated in Spain^{8,9}. There are other questionnaires and scales such as the Center for Epidemiologic Studies-Depression Scale (CES-D), Multidimensional Anxiety Scale for Children (MASC)¹⁰ and The Hospital Anxiety and Depression Scale (HADS)¹¹ that try to serve as screening for depressive and anxiety disorders in adolescents. They have been shown to be useful in the clinical practice, although they also have not been validated in our country. The only test not elaborated from a scale for adults, specifically designed for children whose ages ranged from 8 to 16 years and validated in Spain, is the CDS questionnaire⁸. The content of the items is easy and does not present problems to understand it or due to lack of good reading capacity of the students, since each one of the items or questions was read out loud by the examiner while it was being read by the child. Perhaps this circumstance of ease of understanding allowed for the large participation of the students and we were pleasantly surprised by their collaboration and only had to discard ten questionnaires because they were poorly filled out and none due to refusal by the participants.

CONCLUSION

In our study, a high prevalence of depressive manifestations was observed among adolescents. One important datum observed is that this prevalence is greater in children of dysfunctional families and in children who had fewer siblings, no references on these circumstances by other authors being found.

The great relevance that it may have for the development of the child population would make it important to define the methods necessary to perform screening on this population and to be able to act early on the depressive disorders at such early ages in future studies.

ACKNOWLEDGEMENTS

To Juan Soler, inspector of the Provincial branch of the Education Office of Albacete, who provided the study centers. To the different directors, professors and students of the schools Dominicas, Aristos and Nuestra Señora Montserrat who participated in the study with great interest and who offered their collaboration unselfishly.

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