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Prevalence and characteristics of depressive symptomatology in non-clinical adolescents

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Introduction. Depressive symptoms are fairly common in children and adolescents, these varying according to gender and age.

Objective. The objective of the present study was to examine the prevalence of depressive symptoms based on gender and age in a representative sample of Spanish adolescents.

Method. Severity of depressive symptomatology was assessed using the Reynolds Depression Adolescent Scale (RADS). The final sample was composed of 1,683 nonclinical adolescents, 818 males (48.6%), with a mean age of 15.9 years (SD = 1.2).

Results. Of the total sample, 2.5% obtained a higher score than the cut-off point of 77 on the RADS, which indicates clear severity in the depressive symptomatology. Statistically significant differences were found as a function of gender and age when the mean scores on the subscales and the RADS total score were compared. Females obtained higher scores than males on the Dysphoria and Somatic Complaints subscales, as well as in the RADS total score. The 17 to 19-year old adolescents group obtained higher scores on the Dysphoria subscale compared to the 14-16 year-old group.

Conclusions. Depressive symptoms are a fairly common phenomenon within this age group. These results are consistent with those found in previous literature and have clear implications with a view to understanding this psychological phenomenon in this age group as well as establishing prevention and early detection programs for participants at risk of developing affective disorders.

Key words:
Depression; Prevalence; Adolescents; RADS; Subclinical depressive symptoms.

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Prevalencia y características de la sintomatología depresiva en adolescentes no clínicos

Introducción. Los síntomas depresivos son un fenómeno bastante común en niños y adolescentes que parecen fluctuar en función del género y la edad.

Objetivo. El objetivo del presente trabajo fue examinar la prevalencia de los síntomas depresivos en función del género y la edad, en una muestra representativa de adolescentes de la población española.

Método. La gravedad de la sintomatología depresiva se evaluó mediante la Reynolds Depression Adolescent Scale (RADS) (Reynolds, 2002). La muestra final la conformaron 1.683 adolescentes no clínicos, 818 varones (48,6%), con una edad media de 15,9 años (DT = 1,2).

Resultados. El 2,5% de la muestra total superó el punto de corte de 77 puntos en la RADS, indicativo de una clara gravedad de la sintomatología depresiva. Se encontraron diferencias estadísticamente significativas en función del género y la edad cuando se compararon las puntuaciones medias de las subescalas y la puntuación total de la RADS. Las mujeres obtuvieron puntuaciones más altas que los varones en las subescalas Disforia y Quejas somáticas, así como en la puntuación total de la RADS. Los adolescentes de entre 17-19 años obtuvieron una mayor puntuación en la subescala Disforia en comparación con el grupo de 14-16 años.

Conclusiones. Los síntomas depresivos son un fenómeno bastante común dentro de este grupo de edad. Estos resultados son consistentes con los encontrados en la literatura previa y tienen claras implicaciones de cara a la comprensión de este fenómeno psicológico en este sector de la población, así como en lo relativo al establecimiento de programas de prevención y detección temprana de participantes de riesgo de desarrollar trastornos del estado de ánimo.

Palabras clave:
Depresión; Prevalencia; Adolescentes; RADS; Síntomas depresivos subclínicos.

INTRODUCTION

It has currently been calculated that depressive disorders head the list of mental disorders worldwide, these making makes up, together with anxiety disorders, approximately 25% of the medical visits. In this way, it has been calculated that approximately 121,000,000 persons suffer this disorder.[1-3] In spite of the existence of an improved public health system and a multimillionaire industry around antidepressants, the rates of depression continue to be alarmingly high.

The highest rates of depression in the adult age are associated with depression in childhood and adolescence. Thus, efforts are currently aimed at detecting and treating children and adolescents with depressive symptoms early.[4, 5] In recent years, the incidence of depression in young ages has been increasing and suicide rates or attempts have also been increasing. As occurs in adult depression, child and adolescent depression is also one of the major health problems in our current society. Epidemiological studies show levels of about 0.4-2.5% in children and between 0.4 and 8.3% in adolescence,[5-8] although percentages of 4 -14% can be found in prevalence studies carried out in Spain.[9-14]

As occurs in the expression of depressive symptoms in the adult population, gender and age seem to play an important role in the phenotypic expression of this group of signs and symptoms at early ages.[12, 15-17] In regards to gender, the rate of depressive boys and girls is approximately the same until 12 years of age after which the ratio becomes 2:1, with a greater incidence and girls.[5, 16, 18] In regards to the role of age, it is estimated that the prevalence of major depression is approximately 0.5% for the preschool age, this reaching 2% of the population in the school age and up to 5% in the adolescent age.[8, 9]

This prevalence rates refer to the formal diagnosis of the disorders of the depressive mood state in our communities only seems to reflect the iceberg point, it being possible that these prevalence rates are underdiagnosed. As an example, depressive symptoms and signs which, without reaching a clinical level, have a clear impact on the functioning of the persons, can be found. The name of subclinical depressive symptoms is used to define this condition. Previous works have found that 20 to 50% of adolescents report these subclinical levels of depression.[19, 20] Presence of these subclinical symptoms in children and adolescents has been associated with a greater risk for the subsequent development of different problems, such as depressive disorders, suicidal behaviors, functional detrioration[21-23] or school performance problems (e.g. lack of motivation for learning, deficient social relationship at school or reading and writing problems).[24] In this sense, subclinical depressive symptoms can be considered to be one of the most relevant risk factors in the life of young people in different settings, including the academic and social sphere. There is no doubt that identifying the participants who are at risk of having the clinical expression of the disorder is therefore very important, with the final purpose of being able to use early intervention strategies[5, 25-27] in order to lessen, relieve or delay the possible impact of the psychological disorder.

Up to now in Spain, there have been few empirical studies that attempt to analyze and understand the expression of the subclinical depressive symptoms in the general adolescent population. Within this research context, the main purpose of this study has been to study the presence of depressive symptoms in a representative sample of adolescents in the general Spanish population. It also has studied the role played by gender and age in the phenotypal expression of this type of symptoms. Studying the prevalence rates allows us better understanding of depression in this sector of the population and makes it possible to improve the public health system on the level of detection, intervention, treatment and management of resources. In accordance with previous investigations, we were guided by the hypothesis that a reduced percentage of adolescents will report a severe depressive level, although the percentage that will report depressive symptoms on the subclinical level will be high. Furthermore, it is hypothesized that the depressive symptoms will vary based on gender and age of the adolescents.

METHOD

Participants

Randomized, stratified cluster sampling was made in the classroom of an approximate population of 3700 students selected from Asturias. The students came from different public and private school centers within Obligatory Secondary Education (OSE) and Professional Training Cycles and from different social-economical levels. The strata were created based on geographic zone (West, East, Cuenca

Mining Area and Central) and school stage (obligatory and post-obligatory), in which the likelihood of extraction from the school center was based on the number of students. The final sample was made up of 1,659 students, 801 men (48.3%) and 858 (51.7%) women, belonging to 25 school sites and 95 classrooms. Mean age was 15.9 years (SD = 1.2), age ranging from 14 to 19 years. Distribution by age was: 14 years (*n* = 209), 15 years (*n* = 439), 16 years (*n* = 480), 17 years (*n* = 351), 18 years (*n* = 156) and 19 years (*n* = 29). Based on the Spanish education system and to establish possible comparisons, two age groups were created: 14-16 years (*n* = 1,123) and 17-19 years (*n* = 536).

Procedure

The questionnaires were administered collectively in groups of 10 to 35 students during school hours and in a classroom prepared for it. The study was presented to the participants as research on the different characteristics of the personality, assuring them of the confidentiality of their answers and the voluntary character of their participation. Parent consent was also requested for those participants under 18 years of age. Administration of the questionnaires was always performed under the supervision of a collaborator. This study is included within a larger investigation on early detection and intervention of psychological disorders.

Instruments

Reynolds Adolescent Depression Scale (RADS).[28, 29] The RADS is a self-report used for the evaluation of severity of depressive symptoms in adolescents whose ages range from 12 to 20 years. This self-report was developed as a screening test in the identification of depressive symptoms in adolescents within the education and clinical setting and for research and evaluation of the results of the treatments. It is made up of a total of 30 statements with Likert-like answers with 4 options (1 = "almost never;" 4 = "*almost always*"). The scores range from 30 to 120, with cut-off to judge severity of the depressive symptoms at 77 points or more.[28] Recently, Reynolds[29] proposed four scales for this self-report: Anhedonia, Somatic complaints, Negative self-evaluation and Dysphoria. The RADS has been widely used in different thematics, presenting adequate psychometric properties, referring to internal consistence,[4] test-retest reliability and validity evidences.[29-33] In this study, the validated Spanish version was used in the sample of 1384 non-clinical and 217 clinical adolescents.[12] Internal consistency and test -retest reliability of the Spanish adaptation ranged from 0.82 to 0.90 (non-clinical sample) and 0.84 to 0.91 (clinical sample). Furthermore, the factorial structure of 4 factors was replicated in an independent sample of Spanish adolescents [34] and different evidences of validity were obtained.[12, 35]

The Oviedo Infrequency Scale (INF-OV).[36] This is a self-report made up of 12 items using the 5-point Likert-like format (1= "*totally disagree;*" 5= "*totally agree*") developed following the guidelines for the construction of tests.[37, 38] Its objective is to detect those participants who respond randomly, pseudorandomly or dishonestly on self-reports. In this way, 69 students who had more than 3 items with incorrect scores were eliminated from the sample.

RESULTS

Descriptive statistics

The mean total score of the RADS for the complete sample was 50.62 (*SD* = 10.02). The range of scores varied from 33 to 102 points, and 2.5% (*n* = 42) of the total sample were above the cut-off of 77 points, indicative of severity of depressive symptoms. In the case of men, the total score ranged from 33 to 100 and in women from 33 to 102. A total of 2.6% (*n* = 21) of the men and 2.4% (*n* = 21) of the women scored above the cut-off established by Reynolds[28] for severe depressive symptoms. Based on age, the score of the 14 -16 year old group ranged from 33 to 102 and that of the 17-19 year-old group from 33 to 99. A total of 2.7% (*n* = 30) of the adolescents between 14-16 years and 2.2% (*n* = 12) of the participants between 17-19 years scored above 77 points. Table 1 shows the mean scores and standard deviations for the items on the RADS, both for the total sample and based on gender and the two age groups (table 1).

Reynolds[28] established the cut-off of the RADS to determine severity of the symptoms based on the total score corresponding to the 90th centile (scores $\geq$ 77). However, in a second analysis of the present study and in convergence with previous works, [12] the cut-off corresponding to the 90th centile in this sample (in this case, score $\geq$ 63) has also been taken into account. It was found that the percentage of adolescents who have severity of depressive symptoms reaches 7.5% (*n* = 124). Furthermore, based on gender, 6.6 % (*n* = 53) of the boys and 8.3% (*n* = 71) of the girls exceeded this criterion. In the third place, based on age, 7.3% (*n* = 82) of the 14-16 years old group and 7.8% (*n* = 42) of the 17-19 year old group scored 63 or more on the total score of the RADS.

Prevalence of the depressive symptoms

Table 2 shows the number of participants for the total sample and men and women separately, and based on the age group that scored 3 or 4 ("*many times*" or "*almost always*") in the response options of the items making up the RADS. As can be observed, a significant percentage of the

Table 1 Descriptive statistics (mean and standard deviation) for the items on the Reynolds Adolescent Depression Scale

Items	Total (n = 1659) Mean (SD)	Men (n = 801) Mean (SD)	Women (n = 858) Mean (SD)	14-16 years (n = 1123) Mean (SD)	17-19 years (n = 536) Mean (SD)
1. I feel happy	1.69 (0.75)	1.70 (0.74)	1.67 (0.75)	1.68 (0.75)	1.73 (0.75)
2. I worry about my school performance	2.82 (0.91)	2.72 (0.91)	2.90 (0.90)	2.80 (0.92)	2.87 (0.90)
3. I feel lonely	1.47 (0.68)	1.43 (0.68)	1.52 (0.68)	1.46 (0.68)	1.51 (0.69)
4. I feel my parents don't like me	1.34 (0.70)	1.32 (0.71)	1.35 (0.69)	1.34 (0.70)	1.33 (0.70)
5. I feel important	3.03 (0.80)	2.90 (0.85)	3.14 (0.74)	3.02 (0.82)	3.04 (0.76)
6. I feel like hiding, separating myself from the others	1.44 (0.68)	1.41 (0.67)	1.47 (0.69)	1.43 (0.68)	1.46 (0.67)
7. I feel sad	1.73 (0.70)	1.60 (0.69)	1.85 (0.69)	1.72 (0.72)	1.76 (0.65)
8. I feel like crying	1.66 (0.71)	1.36 (0.59)	1.93 (0.69)	1.65 (0.71)	1.68 (0.69)
9. I feel that no one cares about me	1.47 (0.72)	1.44 (0.76)	1.49 (0.71)	1.46 (0.72)	1.45 (0.72)
10. I feel like playing with other children	1.48 (0.77)	1.49 (0.74)	1.47 (0.79)	1.46 (0.76)	1.53 (0.78)
11. I feel sick	1.38 (0.63)	1.32 (0.60)	1.43 (0.66)	1.36 (0.62)	1.43 (0.67)
12. I feel loved	1.70 (0.84)	1.77 (0.88)	1.63 (0.80)	1.70 (0.85)	1.70 (0.83)
13. I feel like running away from home	1.54 (0.87)	1.45 (0.83)	1.62 (0.89)	1.53 (0.88)	1.55 (0.86)
14. I feel like hurting myself	1.11 (0.45)	1.12 (0.50)	1.10 (0.39)	1.13 (0.47)	1.09 (0.39)
15. I feel that other children don't like me	1.30 (0.60)	1.27 (0.58)	1.32 (0.62)	1.31 (0.61)	1.29 (0.57)
16. I feel upset, irritated	1.54 (0.69)	1.46 (0.69)	1.63 (0.69)	1.52 (0.70)	1.61 (0.67)
17. I feel that life is unfair	2.20 (1.0)	2.21 (1.0)	2.18 (0.97)	2.20 (1.0)	2.20 (0.99)
18. I feel tired	1.99 (0.79)	1.93 (0.83)	2.06 (0.75)	1.98 (0.81)	2.03 (0.76)
19. I feel I am bad	1.31 (0.59)	1.35 (0.64)	1.27 (0.55)	1.31 (0.59)	1.31 (0.61)
20. I feel that I am useless	1.32 (0.64)	1.28 (0.62)	1.36 (0.65)	1.33 (0.65)	1.32 (0.63)
21. I feel sorry for myself	1.24 (0.58)	1.25 (0.58)	1.24 (0.57)	1.25 (0.59)	1.24 (0.56)
22. They are things that make me angry	2.60 (0.81)	1.61 (0.83)	2.97 (0.80)	2.61 (0.84)	2.56 (0.76)
23. I like to talk with my classmates	1.33 (0.65)	1.40 (0.69)	1.26 (0.61)	1.33(0.66)	1.34 (0.64)
24. I have trouble sleeping	1.62 (0.86)	1.57 (0.85)	1.67 (0.88)	1.61 (0.85)	1.65 (0.90)
25. I feel like having fun	1.24 (0.59)	1.28 (0.63)	1.20 (0.56)	1.23 (0.61)	1.25 (0.57)
26. I feel worried	2.03 (0.76)	1.93 (0.79)	2.12 (0.74)	1.98 (0.77)	2.14 (0.75)
27. I have stomach aches	1.56 (0.69)	1.44 (1.1)	1.68 (0.73)	1.55 (0.68)	1.60 (0.71)
28. I feel bored	2.08 (0.80)	2.12 (0.86)	2.05 (0.75)	2.09 (0.81)	2.08 (0.79)
29. I like to eat	1.81 (0.86)	1.73 (0.81)	1.89 (0.91)	1.84 (0.88)	1.76 (0.83)
30. I feel like everything I do is useless	1.53 (0.74)	1.50 (0.75)	1.56 (0.74)	1.51 (0.74)	1.57 (0.75)

Note: Items 1, 5, 10, 12, 23, 25 and 29 have been recoded in accordance with the RADS correction format. Once the items are recoded, higher scores indicate a higher level of severity in the depressive symptoms.

participants reported subclinical depressive symptoms such as somatic complaints, anhedonia (incapacity to experience pleasure), negative self-evaluations or dysphoria. As an example, 6.8% of the sample reported *feeling lonely* (item 3) many times or almost always and 11.3% stated they *felt sad* (item 7) based on this same criterion. In the same way, 10.1% of the sample scored 3 or 4 on item 8 (*feeling like crying*), and 14.3% in the item 24 "*I have trouble sleeping.*" It is

Table 2 Percentage of participants of the total scale, and of men and women who scored 3 or 4 on the items of the items de la Reynolds Adolescent Depression Scale

Items	Total (n = 1659) % (n)	Men (n = 801) % (n)	Women (n = 858) % (n)	14-16 years (n = 1123) % (n)	17-19 years (n = 536) % (n)
1. I feel happy	13.7 (227)	13.1 (105)	14.2 (148)	13.2 (148)	14.7 (79)
2. I worry about my school performance	63.1 (1046)	59.4 (476)	66.4 (570)	62.3 (700)	64.6 (346)
3. I feel lonely	6.8 (113)	6.7 (54)	6.9 (59)	6.9 (77)	6.7 (36)
4. I feel my parents don't like me	7.1 (117)	7.1 (57)	7.0 (60)	7.3 (82)	6.5 (35)
5. I feel important	79.6 (1320)	73.0 (585)	85.7 (735)	79.1 (888)	80.6 (432)
6. I feel like hiding, separating myself from the others	6.5 (108)	6.2 (50)	6.8 (58)	6.8 (76)	6.0 (32)
7. I feel sad	11.3 (187)	8.7 (70)	13.6 (117)	12.2 (137)	9.3 (50)
8. I feel like crying	10.1 (168)	4.0 (32)	15.9 (136)	10.2 (114)	10.1 (54)
9. I feel that no one cares about me	8.1 (134)	8.2 (66)	7.9 (68)	8.5 (95)	7.3 (39)
10. I feel like playing with other children	11.0 (182)	10.9 (87)	11.1 (95)	10.5 (118)	11.9 (64)
11. I feel sick	4.5 (75)	4.1 (33)	4.9 (42)	4.1 (46)	5.4 (29)
12. I feel loved	16.6 (276)	19.4 (155)	14.1 (121)	16.5 (185)	17.0 (91)
13. I feel like running away from home	13.6 (225)	11.5 (92)	15.5 (133)	13.6 (153)	13.4 (72)
14. I feel like hurting myself	2.6 (43)	3.4 (27)	1.9 (16)	3.1 (35)	1.5 (8)
15. I feel that other children don't like me	4.0 (67)	4.0 (32)	4.1 (35)	4.5 (50)	3.2 (17)
16. I feel upset, irritated	8.1 (135)	8.1 (65)	8.2 (70)	8.1 (91)	8.2 (44)
17. I feel that life is unfair	34.2 (567)	35.6 (286)	32.8 (281)	34.6 (388)	33.4 (179)
18. I feel tired	22.2 (369)	20.0 (160)	24.4 (209)	22.0 (247)	22.8 (122)
19. I feel I am bad	4.7 (78)	6.1 (49)	3.4 (29)	4.4 (49)	5.4 (29)
20. I feel that I am useless	5.2 (86)	5.2 (42)	5.1 (44)	5.5 (62)	4.5 (24)
21. I feel sorry for myself	4.2 (69)	4.5 (36)	3.8 (33)	4.5 (51)	3.4 (18)
22. They are things that make me angry	49.9 (828)	50.9 (408)	49.0 (420)	50.8 (570)	48.1 (258)
23. I like to talk with my classmates	6.7 (111)	7.5 (60)	5.9 (51)	6.9 (77)	6.3 (34)
24. I have trouble sleeping	14.3 (238)	12.9 (103)	15.7 (135)	13.9 (156)	15.3 (82)
25. I feel like having fun	4.8 (79)	5.6 (45)	4.0 (34)	4.8 (54)	4.7 (25)
26. I feel worried	21.5 (356)	19.4 (155)	23.4 (201)	19.2 (216)	26.1 (140)
27. I have stomach aches	7.8 (130)	5.2 (42)	10.3 (88)	7.5 (84)	8.6 (46)
28. I feel bored	24.1 (299)	26.8 (215)	21.4 (184)	24.9 (280)	22.2 (119)
29. I like to eat	22.3 (370)	18.0 (144)	26.3 (226)	23.9 (268)	19.0 (102)
30. I feel like everything I do is useless	8.9 (147)	9.2 (74)	8.5 (73)	8.9 (100)	8.8 (47)

Note: Items 1, 5, 10, 12, 23, 25 and 29 have been recoded in accordance with the RADS correction format. Once the items are recoded, higher scores indicate a higher level of severity in the depressive symptoms.

interesting to mention that at least 46 participants *felt like hurting themselves* many times or almost always. The items with the highest rate of affirmative responses in the total sample were item 5 (*I feel important*) (this item should be interpreted in the opposite sense, since this item is recoded based on the correction criteria) and item 2 (*I worry about my school performance*). The items receiving the lowest rate of affirmative responses were item 14 (*I feel like hurting*

myself) and item 15 *(I feel that other children don't like me*) (Table 2).

Expression of the depressive symptoms based on gender and age

In the following, the relationship between gender and age with severity of depressive symptoms is studied. To do so, a Multivariate Analysis of the Variance (MANOVA) was used, considering the fixed factors as gender and age and the subscales and total score of the RADS as dependent variables. The Wilks' Lambda value was used to observe if there were significant differences in all of the dependent variables considered as a whole. As an index of effect size, the partial ETA-squared (η^2 partial) was used. Table 3 shows the means and standard deviations in the subscales and total score of the RADS. Based on gender, statistically significant differences were found. Women obtained higher scores than men on the Dysphoria subscales (F = 71,30, $p < 0.001$, η^2 partial = 0.041) and Somatic complaints (F = 7,00, $p < 0.001$, η^2 partial = 0.004), and on the total score of the RADS (F = 18,58, $p < 0.001$, η^2 partial = 0.011). Based on age, statistically significant differences were found in the Dysphoria subscale (F = 4,60, $p < 0.003$, η^2 partial = 0.003), in which the 14-16 year old group scored lower than the 17-19 year old group. No statistically significant interaction was found between the gender and age factors (Table 3).

DISCUSSION AND CONCLUSIONS

Depression is one of the most common psychological problems in our society.[39] Empirical evidence indicates that depressive symptoms are a psychological phenomenon that may originate in childhood or adolescence, it being quite common within this population sector.[40-43] Along general lines, the prevalence rates and adolescence in international studies range from 3-8%.[8, 41] Furthermore, when using different self-reports for the evaluation of depressive symptoms, it is found that 20 to 50% of the adolescents report subclinical symptoms of depression.[19, 20]

Given these important figures, the main objective of this work has been to analyze the prevalence of depressive symptoms in a representative sample of the general Spanish adolescent population using the RADS scale, [28] and to study the role played by gender and age in the phenotypal expression of the symptoms. The results indicated that a high percentage of adolescents evaluated reported depressive symptoms on the subclinical level and that at least 2.5% of the participants exceeded the criterion established by the scale used (90th centile, score ≥77) for severity of depressive symptoms. Lacking a more profound psychological and medical evaluation, severe depressive symptoms presented by 2.5% of the sample may be understandable analogically to significant clinical depression in which severity of the symptoms establishes the difference between a normal and transitory state of sadness.[44] As has already been mentioned, the prevalence rates for child -young population depression provided by the epidemiological studies published in Spain are within the range of 4 -14%.[9-14] It is possible that the 2.5% found in this present study cannot be compared to these data because of the heterogeneity of the samples and self-reports used. However, when the cut-off was established based on the characteristics of our sample (90th centile was located at a score equal to or greater than 63) the proportion of adolescents with severe depressive symptoms found reached 7.5%, a percentage clearly within this range between 4-14%.

Comparison of the means of the subscales and the total score of the RADS also indicated, in agreement with previous literature, that the expression of depressive symptoms varies based on gender and age.[12, 15-17, 29, 31, 33] In this sense, women obtained higher scores on the Dysphoria and Somatic complaints subscales and on the total score and adolescence over 16 obtained a higher score on the Dysphoria subscale but not in the total score of the RADS. The results demonstrate the importance of the dimension of Dysphoria in this group of adolescents, both in its expression based on gender and age. An interesting feature found in this investigation is that the mean score of the RADS in our sample is slightly lower than that found in samples of other countries.[29-33] However, previous studies performed in Spanish adolescents[12] reveal a mean score similar to that found in this work, ranging from 45.5 to 51.3 points. In this sense, the total score in depressive symptoms measured using the RADS seems to vary according to the culture of the participants. Transcultural differences have also been found when the prevalence of depressive symptoms has been measured with other measurement instruments based on the country.[45, 46]

Because the rates of cases of depression continue to grow (in Spain, it is estimated that there are more than 2 million patients with depression) and that age of appearance of the depression is decreasing, the presence of subclinical depressive symptoms in adolescents may be understood as an important predictive factor of risk of depression in the adult age. That is why some efforts are currently being aimed at the examination of the relevant factors in the appearance of depressive symptoms in adolescents. Standing out among these are familial precipitants (e.g. families with conflict, presence of depressive disorder in the parents), poor school and social adaptation, as well as the physical and psychological changes associated to the definition of the identity per se characteristic of this stage.[47-49] The study of the depressive symptoms in adolescents has also caused interest in the academic settings because of its impact in the classrooms. Therefore, many depressive symptoms such as lack of concentration, loss of interest, lack of initiative,

Table 3 Means and standard deviations for the subscales and total score of the Reynolds Depression Adolescent Scale (RADS) based on gender and age

RADS	Gender		Age	
	Men (n = 801) M (SD)	Women (n = 858) M (SD)	14-16 years (n = 1123) M (SD)	17-19 years (n = 536) M (SD)
Dysphoria	13.24 (0.13)	14.75 (0.12)	13.80 (0.10)	14.18 (0.15)
Anhedonia	12.30 (0.11)	12.31 (0.10)	12.26 (0.17)	12.34 (0.13)
Negative self-evaluation	10.76 (0.13)	11.08 (0.12)	10.91 (0.10)	10.93 (0.15)
Somatic complaints	13.25 (0.12)	13.68 (0.11)	13.95 (0.09)	15.53 (0.13)
Total score	49.55 (0.38)	51.82 (0.36)	50.38 (0.30)	50.99 (0.43)

psychomotor delay, low self-esteem, or social withdrawal may have an important negative effect on school performance. This is often translated into obtaining of lower average grades compared to students without depression. [24, 50, 51] The presence of subclinical depressive symptoms and adolescence as an indicator of future risk of depression as well as the enormous negative impact of these symptoms on school and social performance indicate the importance of the evaluation of subclinical depressive symptoms in adolescence, and more specifically, in the academic setting. This would give relevance to this study.

Nonetheless, the results found should be interpreted based on the following limitations. In the first place, there is the problem inherent to the application of any type of self-report, with the possible difficulties in the interpretation and understanding of some of the items by the participants and the possibility of high rates of false positives. Thus, it would have been interesting to have used external informers, such as parents or professors, via hetero-reports. In the second place, the cross-sectional nature of this research should not be overlooked, as it is not possible to establish cause-effect inferences. In the third place, and just as important, these symptoms should always be understood and analyzed within a bio-social model in which the interaction and combination of a wide diversity of variables is considered. In this sense, in order to develop a major depressive disorder, the combination of multiple factors (genetics, environmental, etc.) as well as the necessary presence of other psychopathological symptoms and signs (social withdrawal, significant alteration of the academic and social life, etc.) must be present.

Future lines of investigation should continue to examine, in longitudinal studies, the role of these subclinical depressive symptoms in the prediction of mood state disorders as well as their relationship with other risk markers.[52, 53] Similarly, development, within the health systems of detection and early intervention programs for persons at risk of developing the mood state disorders, with the consequent improvement in the management of public health resources, is of great importance. Finally, in-depth evaluation and understanding of the depressive symptoms within the school centers per se have the final purpose of lessening the possible impact that may be caused by this psychological disorder on the personal, familial, and social level once it occurs.

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