



Original

## Anxiety and depression in educational settings: Prevalence, assessment, and impact on psychological adjustment



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### ABSTRACT

Symptoms of anxiety and depression constitute one of the main challenges for educational and social-health systems among young people. The main objective of this study was to study the symptoms of anxiety and depression in educational contexts. For this purpose, prevalence rates have been analyzed, a brief screening test to assess anxiety and depression has been validated and its relationship with psychological adjustment has been studied. A total of 2228 Spanish adolescents ( $M = 14.49$  years,  $SD = 1.76$ ; 52.9% female) participated in the study. The brief version developed to assess emotional problems was adjusted to a two-factor model (depression and anxiety). The reliability of the scores was  $\omega = .82$  and  $\omega = .87$ . Symptoms of anxiety and depression have been positively associated with negative affect and emotional and behavioural problems, and negatively related with positive affect and quality of life. Emotional regulation difficulties seen to be common in educational contexts and impact on different indicators of psychological adjustment during adolescence. Anxiety and depression can be assessed with reliable screening test. It is necessary to implement programs for the prevention of emotional problems in educational contexts.

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## Ansiedad y depresión en contextos educativos: prevalencia, evaluación e impacto en el ajuste psicológico

### RESUMEN

Los síntomas de *ansiedad* y *depresión* constituyen uno de los principales retos para los sistemas educativos y sociosanitarios entre los jóvenes. El objetivo principal de este estudio ha sido analizar los síntomas de *ansiedad* y *depresión* en contextos educativos. Para ello se han examinado las tasas de prevalencia, se ha validado un test de cribado breve para evaluar la *ansiedad* y la *depresión* y se ha estudiado su relación con el ajuste psicológico. Han participado un total de 2235 adolescentes españoles ( $M = 14.49$  años,  $DT = 1.76$ ; 52.9% mujeres). La versión breve desarrollada para valorar los problemas emocionales se ha ajustado a un modelo de dos factores (*ansiedad* y *depresión*) relacionados. La fiabilidad de las puntuaciones ha sido  $\omega = .82$  y  $\omega = .87$ . Los síntomas de ansiedad y depresión se han asociado positivamente con el *afecto negativo* y los *problemas emocionales* y *de conducta*, y negativamente con el *afecto positivo* y la *calidad de vida*. Las dificultades de regulación emocional parecen ser prevalentes en contextos educativos e impactan en diferentes indicadores de ajuste psicológico de los adolescentes. Los síntomas de *ansiedad* y la *depresión* se pueden evaluar con test de cribado breves. Se hace necesario implementar programas de prevención de problemas emocionales en contextos educativos.

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## Introduction

Adolescence is an essential developmental stage where personality, identity, friendships and executive functions are developed and consolidated, aspects associated with psychological well-being and mental health (Bernaras et al., 2017). Emotional problems, such as anxiety and depression, are a major barrier to family, education, health and social systems (Beck et al., 2021). Improving assessment procedures, through early detection and identification, using reliable tools from which informed decisions can be made, can help both to prevent emotional regulation problems and to promote and assess the effectiveness of psychological interventions.

Emotional regulation problems seem to be common among adolescents. The World Health Organisation (WHO) reports that 3.6% of adolescents aged 10–14 years and 4.6% of those aged 15–19 years report anxiety problems. In addition, 1.1% of adolescents aged 10–14 years and 2.8% of those aged 15–19 years report problems with depression (WHO, 2021). In studies carried out with Spanish adolescents by Canals-Sans et al. (2018) and Canals-Sans et al. (2019) it has been noted that 11.8% reported anxiety problems and 11.6% reported depression. Also, the peak age of onset for the development of any mental disorder begins during adolescence ( $M=14.5$  years) (Solmi et al., 2022). Fifty per cent of cases of mental disorders in adults start before the age of 18, while 35% start before the age of 14. Similarly, anxiety and depression can occur in combination, both clinically and subclinically, with overlap being the rule rather than the exception (Sánchez Hernández et al., 2023). Eighty per cent of children who receive a diagnosis of major depressive disorder also have an anxiety disorder (Canals-Sans et al., 2019). Given the overlap of anxiety and depression symptoms, the existence of a general dimension of emotional dysregulation or an internalising dimension has been proposed (Eaton et al., 2023; Piqueras et al., 2021).

Screening for emotional regulation problems, such as anxiety and depression in educational settings has the potential to improve the early and reliable identification of these phenomena at both sub-threshold and clinical levels. Even more so when considering their internalising nature, the scarce search for professional help by the children who suffer from them, the lack of standardised assessment protocols or their moderate temporal stability (Canals-Sans et al., 2019; Piqueras et al., 2021). This requires the right tools to make sound, data-driven decisions. A wide range of instruments have been developed in the literature to assess emotional problems in children and young people (Bernaras et al., 2019; Creswell et al., 2020). Some of the self-reports that assess anxiety in adolescents are the *Multidimensional Anxiety Scale for Children* (MASC) (March et al., 1997), the *Youth Anxiety Measure for DSM-5* (YAM-5) (Muris et al., 2017) or the *Screen for Child Anxiety Related Disorders* (SCARED) (Birmaher et al., 1997). For the measurement of depression in adolescence, there are, among others, the *Children's Depression Inventory* (CDI) (Kovacs, 1992), the *Center for Epidemiological Studies Depression Scale for Children and Adolescents* (Radloff, 1991) or the *Reynolds Adolescent Depression Scale-2* (Reynolds, 2002). However, there are not many instruments that simultaneously assess anxiety and depression in adolescents. Among the most widely used are the *Revised Child Anxiety and Depression Scale* (RCADS) (Chorpita et al., 2000) or, more recently, the *DetectaWeb-Malestar Scale* (Piqueras et al., 2021). In addition to the aforementioned assessment tools, the *Generalised Anxiety Disorder Assessment-7* (GAD-7) (Spitzer et al., 2006) or the *Patient Health Questionnaire-9* (PHQ-9) (Kroenke et al., 2001) have also been used, without being specifically measured for children and young people. The GAD-7 and the PHQ-9 have become standard measures in research and clinical practice for anxiety and depression. Its psychometric properties have been extensively analysed in previous studies (Kroenke, 2021; Kroenke et al., 2010; Löwe et al., 2008; Muñoz-Navarro et al., 2017;

Spitzer et al., 2006). The GAD-7 assesses generalised anxiety using seven items. The PHQ-9 is a 9-item questionnaire developed for the assessment of depressive symptomatology. Its scores have shown adequate evidence of validity and reliability also in adolescents (Fonseca-Pedrero, Díez-Gómez et al., 2023; Kivuruusu et al., 2023; Mossman et al., 2017). These are two measurement instruments with a total of 16 items, so short versions have also been developed (Kroenke et al., 2010). However, given that the ultimate purpose of these self-reports is the joint assessment of anxiety and depression (or internalising symptoms) for different purposes (epidemiological, screening, etc.), it is relevant to develop a reduced combined version that can be useful and quickly administered in applied and research contexts.

Symptoms of anxiety and depression reported by adolescents have been associated with a wide range of risk and protective factors. Research shows the association between emotional problems and educational and socioemotional variables (Suldo et al., 2014). Similarly, and considering the educational context, the emotional problems experienced during adolescence affect the teaching-learning processes and, therefore, academic performance (García-Escalera et al., 2020; Veldman et al., 2015), social relationships and the educational and family system itself (Quevedo-Blasco et al., 2023). Previous research indicates that emotional and behavioural problems can predict clinical depression and anxiety (Bryant et al., 2020). The study by Lacomba-Trejo et al. (2020) shows how peer problems and lack of emotional competence predict anxiety by 41% and depression by 72%. On the other hand, the high ability of negative affect to predict anxiety symptoms (Zvolensky et al., 2016) and the relationship between low positive affect and depression (Toro et al., 2018) have been shown. Negative emotions such as anxiety, depression and or stress predict poor quality of life in childhood and adolescence (Geng et al., 2020).

Emotional regulation problems are prevalent and impact on children on multiple levels. Similarly, internalising problems are often not assessed in a standardised way with short and reliable screening systems in educational settings. It is therefore necessary to implement strategies to prevent emotional problems through early detection (Fonseca-Pedrero, Pérez-Albéniz et al., 2023). In this context, the main aim of this study was to analyse self-reported symptoms of anxiety and depression in educational settings. With this aim: (1) a brief version, the PHQ-GAD-8, has been validated; (2) the prevalence of self-reported symptoms of anxiety and depression has been examined; and (3) the relationship between anxiety and depression and psychometric indicators of psychological adjustment has been studied. Following international psychometric standards, it is hoped to develop a brief version for the assessment of self-reported emotional symptoms in adolescents. It is hypothesised that the prevalence of self-reported anxiety and depression problems will be high. It is also expected to find that anxiety and depression symptoms are highly correlated and, at the same time, associated with emotional and behavioural problems and low perceived quality of life.

## Method

### Participants

Stratified random sampling at the class level was carried out in the entire student population of La Rioja (northern region of Spain). The students belong to different public and state-subsidised educational centres. Strata have been formed based on public and subsidised educational institutions and educational level. A total of 34 schools and 98 classrooms participated in the study. The initial sample consists of 2640 students. Participants who scored high on the *Oviedo Infrequent Response Scale* (more than three points)

( $n = 175$ ) or were over 18 years of age ( $n = 247$ ) were removed from the sample. Thus, the final sample consists of 2235 participants of which 1045 are male (46.8%), 1183 (52.9%) are female and 7 participants (0.3%) have declared another gender identity. The mean age was 14.49 years ( $SD = 1.76$ ), with a range from 12 to 18 years. The age distribution is as follows: 12 years:  $n = 280$ ; 13 years  $n = 387$ ; 14 years,  $n = 396$ ; 15 years,  $n = 408$ ; 16 years,  $n = 371$ ; 17 years,  $n = 240$ ; and 18 years,  $n = 153$ . 90.8% of the sample identified themselves as Spanish.

### Instruments

*Generalised Anxiety Disorder Assessment-7 (GAD-7)* (Spitzer et al., 2006). It is a self-report made up of seven items with four Likert-type response options (0 = not at all, 1 = several days, 2 = more than half of the days and 3 = nearly every day) to assess the severity of symptoms of generalised anxiety disorder during the last two weeks. The GAD-7 has been validated in Spanish (Muñoz-Navarro et al., 2017).

*Patient Health Questionnaire-9 (PHQ-9)* (Kroenke et al., 2001). It is a 9-item self-report that assesses depressive symptomatology according to DSM criteria. Items are answered according to the frequency of symptoms (0 = not at all, 1 = several days, 2 = more than half of the days, 3 = nearly every day). The PHQ-9 has been validated in Spanish adolescents (Fonseca-Pedrero, Díez-Gómez et al., 2023).

*Strengths and Difficulties Questionnaire (SDQ)* (Goodman, 1997) self-reported version. It is a self-report that assesses emotional and behavioural problems and prosocial behaviour in adolescents. It consists of 25 items with a three-choice Likert-type response format (0 = no, never, 1 = sometimes, 2 = yes, always), divided into five subscales: emotional problems, conduct problems, hyperactivity, peer problems and prosocial behaviour. The first four subscales provide the total score in difficulties. In the present study, the validated Spanish version of the SDQ (Ortuño-Sierra et al., 2022) was used.

*Positive and Negative Affect Schedule for Children (PANAS-C) short version* (Ebesutani et al., 2012). The PANAS-C consists of a total of ten items assessing *positive affect* (PA) and *negative affect* (NA). Five items assess PA through adjectives such as: cheerful, lively, happy, energetic, and proud; and five items assess AN: depressed, angry, fearful, scared and sad. The response system is a five-choice Likert-type (1 = very little or not at all to 5 = extremely or very much). The PANAS-C measures how people feel over the past few weeks. This instrument has been validated with Spanish adolescents (Sanmartín et al., 2018).

*Kidscreen-10* (Ravens-Sieberer et al., 2010). This self-report assesses health-related quality of life in children and adolescents aged 8-18 years. It consists of ten items in Likert response format with 5 response options (1 = never, 2 = almost never, 3 = sometimes, 4 = almost always, and 5 = always), where a higher score is indicative of higher perceived quality of life. The Kidscreen-10 has been validated in Spain (Aymerich et al., 2005).

*Oviedo Infrequency Response Scale-Revised (INF-OV-R)* (Fonseca-Pedrero et al., 2019). It is used to detect random, pseudo-random or dishonest responses. The INF-OV-R instrument is a self-report instrument composed of ten items in dichotomous format (1 = yes, 0 = no). Students with more than three incorrect answers on the INF-OV-R scale have been eliminated from the sample.

### Procedure

The research has been approved by the Clinical Research Ethics Committee of La Rioja (CEImLAR) and by the Research Ethics Committee of the University of La Rioja. The questionnaires were administered collectively, using personal computers, in groups of 10 to 30 participants, during school hours and in a specially equipped classroom, under the supervision of researchers trained in a standard

protocol. No incentives for participation have been offered. In the case of participants under 18 years of age, families have been asked to give written informed consent for their child's participation in the study. Participants have been informed of the confidentiality of their responses and the voluntary nature of the study.

### Data analysis

First, the total sample has been randomly divided into two sub-samples. In the first subsample, in order to identify the most relevant items for the new version of the GAD-7 and PHQ-9, Confirmatory Factor Analysis (CFA) and Exploratory Structural Equation Modelling (ESEM) were carried out on the extended versions. The Weighted Least Square Mean and Variance Adjusted (WLSMV) estimator was used. Several dimensional models have been tested: (a) one-dimensional CFA model; (b) two-dimensional CFA model; (c) two-factor ESEM model; and (d) Bifactor CFA model (one general factor and two specific unrelated factors). From an empirical point of view, four items from each scale were selected based on the standardised factor loadings in the best fitting model. In addition, the discrimination indices of the items have also been analysed by means of an iterative process. The following goodness-of-fit indices have been used: chi-square ( $\chi^2$ ), Comparative Fit Index (CFI), Tucker-Lewis's Index (TLI), Root Mean Square Error of Approximation (RMSEA) and 90% confidential interval, and Standardized Root Mean Square Residual (SRMR). Hu and Bentler (1999) suggest that RMSEA should be .06 or less for a good model fit. The CFI and TLI should be .95 or above, although anything above .90 tends to be considered acceptable. In the second subsample, the analyses were replicated with the short version of PHQ-9 and GAD-7. The reliability of the scale scores was also estimated using the McDonald Omega coefficient. Finally, the relationship between anxiety and depression scores and psychometric indicators of psychological adjustment was calculated using structural equation modelling and Pearson correlations. For the analysis of the predictive model, the Robust Weighted Least Squares and chi-square values has been used. Model adequacy was estimated using the same goodness-of-fit indices as in the factor analyses and with similar criteria, adding the SRMR. SPSS 25.0, MPLUS 7.2 and JASP were used for data analysis.

### Results

#### *Validation of the brief version to assess anxiety and depression: PHQ-GAD-8*

In the first sub-sample, different factor models have been tested. The model with the best goodness-of-fit indices was the ESEM with two related factors. From this ESEM model, used in the extended versions of the GAD-7 and PHQ-9, the four items of each latent factor (depression and anxiety) with the highest factor loadings have been selected. Then, in the second sub-sample, different hypothetical factor models were tested on the eight items. The results of the goodness-of-fit indices for these models are shown in Table 1. As can be seen, the models that best fit the data are the two-factor ESEM model and the Bifactor model. However, as with the extended versions of the PHQ and the GAD, for the Bifactor model the factor loadings on the general factor were high, although the factor loadings on the specific factors were in many cases below .30 and even some were negative. For this reason, the ESEM model has been selected as the most parsimonious. The standardised factor loadings obtained in the second sub-sample on the items selected for the ESEM model are shown in Table 2. The correlation between the two latent factors was .78 ( $p < .01$ ).

**Table 1**  
Goodness-of-fit indices for the extended and short versions: Patient Health Questionnaire-9 and Generalized Anxiety Disorder Assessment-7

Model	$\chi^2$	df	CFI	TLI	RMSEA (CI 90%)	SRMR
<i>Extended versions (Sub-sample 1)</i>						
1-factor model (CFA)	1102.47	104	.951	.944	.093 (.088-.098)	.060
2-factor model (CFA)	680.32	103	.972	.967	.071 (.066-.076)	.048
Two-factor model (ESEM)	447.39	89	.983	.976	.060 (.055-.066)	.031
Bifactor model (CFA)	450.50	88	.982	.976	.061 (.055-.066)	.031
<i>Short version (Sub-sample 2)</i>						
1-factor model (CFA)	522.90	20	.961	.946	.150 (.139-.162)	.078
2-factor model (CFA)	61.36	19	.997	.995	.045 (.033-.058)	.022
Two-factor model (ESEM)	65.36	13	.996	.991	.060 (.046-.075)	.014
Bifactor model (CFA)	47.36	13	.997	.994	.049 (.034-.064)	.013

Note.  $\chi^2$  = Chi-square; df = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean Square Residual.

**Table 2**  
Standardised factor loadings of items from the short version of the Patient Health Questionnaire-9 (PHQ-9) and the Generalised Anxiety Disorder Assessment-7 (GAD-7): PHQ-GAD-8

FI	Factorial loading	Standard error	p	FII	Factorial loading	Standard error	p
PHQ 1	.789	.063	<.001	PHQ1	.144	.076	.057
PHQ 2	.744	.060	<.001	PHQ2	-.035	.070	.612
PHQ 6	.813	.062	<.001	PHQ6	.060	.075	.427
PHQ 9	.834	.024	<.001	PHQ9	-.014	.013	.273
GAD 1	-.011	.038	.776	GAD1	.840	.034	<.001
GAD 2	.004	.026	.867	GAD2	.912	.025	<.001
GAD 3	-.002	.023	.918	GAD3	.878	.023	<.001
GAD 5	.033	.048	.485	GAD5	.745	.042	<.001

The internal consistency of the PHQ-9 scores, estimated using the McDonald omega coefficient, was .86 (95% CI .85-.87). The internal consistency of the GAD-7 scores was .89 (95% CI: .88 - .90). The internal consistency of the PHQ-4, GAD-4 and PHQ-GAD-8 scores was .82 (95% CI .80-.84), .87 (95% CI .85-.88) and .89 (95% CI .88-.90), respectively. In both the extended versions and the PHQ-GAD-8, discrimination indices have been found to be above .30.

*Prevalence of self-reported symptoms of anxiety and depression*

Descriptive statistics for the items of the PHQ-GAD-8 are presented in Table 3. As can be seen, 11.94% of the sample indicate that they have little interest or find little pleasure in doing things, 19.61% that they have felt nervous, anxious, or very upset or have been unable to stop worrying and 21.36% that they have worried excessively about different things more than half of the days in the last two weeks.

*Relationship between symptoms of depression, anxiety, and indicators of psychological adjustment*

The correlation between PHQ-9, GAD-7 and PHQ-GAD-8 scores and psychometric indicators of psychological adjustment has been studied. As shown in Table 4, the PHQ-GAD-8 score was positively and statistically significantly correlated with negative affect and emotional and behavioural problems, and negatively associated with positive affect and quality of life. The extended versions of the PHQ-9 and the GAD-7 and the short version have shown a high correlation.

Figure 1 represents the SEM model of the latent dimensions of the brief version of the questionnaire (depression and anxiety) and the indicators of psychological adjustment used. The CFI and TLI fit indices in the developed model are .937 and .911 respectively. The RMSEA value is .061 (.056-.067) and the SRMR value is .058. Emotional and behavioural difficulties, positive and negative affect and quality of life predict the variance of depressive symptomatology by 77.5% ( $R^2 = .775, p < .001$ ), while emotional and behavioural

difficulties and positive and negative affect predict anxious symptomatology by 61.1% ( $R^2 = .611, p < .001$ ).

**Discussion**

Considering the prevalence of emotional problems in adolescence, the associated personal, family, educational and social impact, and the need for short and simple instruments to identify emotional difficulties in educational contexts, the main objective of this study was to analyse the symptoms of anxiety and depression. In particular, a brief version is validated for screening purposes, the prevalence of self-reported emotional symptoms is examined, and their relationship with affective variables, psychological adjustment and quality of life is analysed.

A short combined version of the *Patient Health Questionnaire* (PHQ-9) and the *Generalized Anxiety Disorder Assessment* (GAD-7), called PHQ-GAD-8, consisting of four items from each test, has been developed and validated to identify adolescents who present symptoms of anxiety and depression in educational contexts. There is currently no combined brief version of the PHQ-9 and GAD-7 for the assessment of emotional regulation problems in Spanish adolescents. Analysis of the internal structure of the PHQ-9 and GAD-7 scores suggests the presence of two related factors (depression and anxiety). The results obtained in previous studies that have analysed the internal structure of the scores of the two questionnaires separately show the presence of an underlying factor (Kroenke et al., 2010; Muñoz-Navarro et al., 2017; Spitzer et al., 2006). Likewise, given the high comorbidity of anxiety and depression disorders and the high overlap at the subclinical level found between anxiety and depression symptoms (Sánchez Hernández et al., 2023), the proposal of models that postulate a general factor referring to emotional dysregulation or internalising dimension is coherent. The two dimensions found in the present study show congruence with the *Emotional Dysfunction Superspectrum* of the *Hierarchical Taxonomy of Psychopathology* (HiTOP) model (Kotov et al., 2021), as well as with transdiagnostic models (Eaton et al., 2023). From this broader framework, the subjective mental distress reported by adolescents may be largely determined by the

**Table 3**  
Prevalence of self-reported depressive and anxiety symptoms in the total sample

Over the last two weeks, how often have you been bothered by the following problems?	M	SD	% Not at all	% Several days	% More than half of the days	% Nearly every day
PHQ 1: Feeling down, depressed, or hopeless	0.89	0.88	37.25	44.39	10.55	7.81
PHQ 2: Little interest or pleasure in doing things	0.94	0.91	36.13	42.95	11.94	8.98
PHQ 6: Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0.69	0.95	56.55	26.44	8.48	8.53
PHQ 9: Thoughts that you would be better off dead or of hurting yourself in some way	0.26	0.65	82.49	11.27	3.55	2.69
GAD 1: Felling nervous, anxious or on edge	1.14	0.90	24.86	45.78	19.61	9.75
GAD 2: Not being able to stop or control worrying	1.11	1.01	33.80	34.16	19.61	12.43
GAD 3: Worrying to much about different things	1.18	1.03	31.55	33.12	21.36	13.88
GAD 5: Being so restless that it is hard to sit still	0.69	.909	55.29	27.38	10.73	6.60

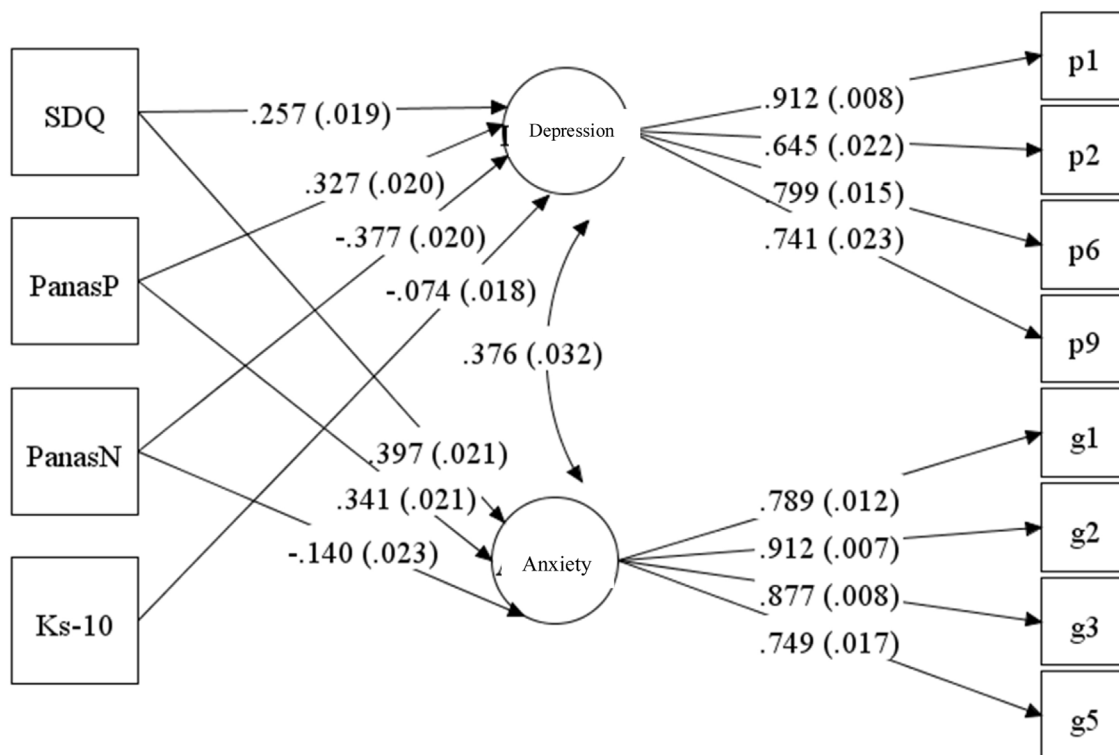
Note. PHQ-9= Patient Health Questionnaire-9; GAD-7= Generalised Anxiety Disorder Assessment-7.

**Table 4**  
Pearson correlations between the Generalised Anxiety Disorder Assessment-7, the Patient Health Questionnaire-9, and the brief version of the PHQ-GAD-8 and psychometric indicators of psychological adjustment

	PHQ-9	GAD-7	PHQ-GAD-8	SDQ	PANAS-C Negative Affect	PANAS-C Positive Affect
GAD-7	.766**					
PHQ-GAD-8	.881**	.930**				
SDQ	.735**	.734**	.741**			
PANAS-C	.708**	.739**	.757**	.684**		
Negative Affect						
PANAS-C Positive Affect	-.666**	-.595**	-.677**	-.568**	-.616**	
Kidscreen-10	-.552**	-.471**	-.519**	-.496**	-.460**	.655**

Note. PHQ-9= Patient Health Questionnaire-9; GAD-7= Generalised Anxiety Disorder Assessment-7; PANAS-C= Positive and Negative Affect Schedule for Children; SDQ= Strengths and Difficulties Questionnaire, total difficulty score.

\*\*  $p < .01$ .



**Figure 1.** Structural equation modelling: psychological adjustment factors as predictors of depression and anxiety.  
Note. SDQ= Strengths and Difficulties Questionnaire, total difficulties score; PANAS-P= Positive and Negative Affect Schedule for Children, positive affect; PANAS-N= Positive and Negative Affect Schedule for Children, negative affect; Ks-10= Kidscreen-10. Significant effects shown as standardised coefficients ( $\beta$ ). Only statistically significant values ( $p < .001$ ) are shown.

presence of emotional symptoms (Piqueras et al., 2021). On the other hand, the estimated values for analysing the reliability of the scores have been found to be satisfactory for the PHQ-GAD-8, as found in previous studies estimating the reliability of the PHQ-9 and the GAD-7 in adolescent samples (Burdzovic-Andreas & Brunborg, 2017; Fonseca-Pedrero, Díez-Gómez et al., 2023; Leung et al., 2020). In line with previous reports, it can be stated that screening for anxiety and depression in children and adolescents is recommended (Forman-Hoffman et al., 2016; Mangione et al., 2022).

The prevalence of depressive and anxious symptomatology reported by the adolescents in this study indicates that it is a predominant phenomenon in educational settings. These results are consistent with previous work (e.g. Canals-Sans et al., 2019; Merikangas et al., 2010; Shorey et al., 2022). For example, previous studies have found that the overall point prevalence rate of self-reported elevated depressive symptoms is 34% (Shorey et al., 2022). In Spain, anxiety symptoms are the most frequently recorded with figures reaching 8.7% in boys and 11.11% in girls between 10 and 14 years old, and 17.8% in boys and 36% in girls between 15 and 19 years old. Depressive symptomatology appears in 1.1% of boys and 1.2% of girls aged 10–14 years and in 4% of boys and 6.8% of girls aged 15–19 years (Sistema Nacional de Salud, 2020). As can be seen, emotional problems are common in this age group, extending beyond the clinical boundaries established by diagnostic manuals. Equally, from a dimensional model, these phenomena are expressed on a continuum of severity and therefore do not necessarily have to be associated with disability or treatment seeking. For its understanding and meaning, it is necessary to consider other variables such as frequency and associated discomfort, its possible impact on other areas or the child's biographical and cultural context.

Symptoms of anxiety and depression have been positively associated with negative affect and psychopathology, and negatively associated with positive affect and quality of life. These results are consistent with previous studies showing a negative relationship between depressive symptomatology and anxiety with positive affect and quality of life (Sanmartín et al., 2020) and a positive relationship with negative affect (Sanmartín et al., 2018) and with behavioural and social difficulties (Ortuño-Sierra et al., 2022). Furthermore, the structural equation model suggests that the depression dimension can be predicted from the scores on emotional and behavioural problems, positive and negative affect, and quality of life, while the anxiety dimension can be predicted from the values on emotional and behavioural problems and positive and negative affect. Regarding emotional and behavioural problems, previous studies have found that the SDQ total score is relevant in the prognosis of anxious symptomatology in children with a mean age of 10 years (Bryant et al., 2020).

The protection and care of young people's mental health in educational settings requires the implementation of programmes for the promotion of psychological well-being and the prevention of psychological problems. More so if one takes into account, on the one hand, that there is a high probability that the most common mental disorders in adults are likely to emerge for the first time in childhood and adolescence (Solmi et al., 2022), and that emotional symptoms in adolescents are often misdiagnosed and undertreated. It is therefore important to have reliable screening instruments available and adapted at an early age to enable early detection and identification, and subsequently, if necessary,

to implement preventive intervention with the aim not only of reducing symptoms but also of optimising personal, school, family, and social development. In this respect, previous research has shown the effectiveness of programmes for the universal prevention of anxiety and depression in school settings. Furthermore, specific selective or indicated prevention programmes have shown significantly larger effect sizes than universal programmes (Werner-Seidler et al., 2017). There is no doubt that schools are essential environments for the acquisition of social-emotional skills (e.g., self-regulation and resilience). However, in educational contexts there is still a need to develop public policies that promote psychological well-being, that are evidence-based and that have as essential pillars the early detection through standardised screening procedures, and the implementation of preventive psychological interventions (Fazel & Sonesson, 2023; Fonseca-Pedrero, Pérez-Albéniz et al., 2023). The results obtained in this study should be interpreted in the light of the following limitations. First, adolescence is a period of development in which the brain, cognition and personality are still consolidating. Secondly, anxiety and depression have been assessed by self-reports. Thirdly, the nature of the study does not allow for cause-effect inferences.

Future studies may use this abbreviated scale in epidemiological studies or analyse the effectiveness of psychological interventions. Likewise, new evidence of validity must continue to be obtained, as well as new advances in psychological assessment and measurement must be implemented with the help of information and communication technologies (Elosua et al., 2023; Cubillo-Leivas et al., 2022; Fonseca-Pedrero et al., 2022). In conclusion, the PHQ-GAD-8 questionnaire appears to be a brief, simple instrument with adequate psychometric properties for the assessment of emotional difficulties in educational contexts. This short and reliable screening tool makes it possible to circumvent the difficulties of assessing a phenomenon that is prevalent in adolescence and in a context where time and material resources are limited. It is necessary to have standardised screening procedures for the evaluation of emotional regulation problems in educational contexts that allow for their prevention, mitigate the possible impact at different levels (family, school, etc.), optimise teaching-learning processes and enhance their well-being and quality of life.

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### Conflict of interest

The authors declare that there are no competing interests in relation to this study.

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## Appendix A. Brief screening questionnaire for depression and anxiety: phq-gad-8

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half of the days	Nearly every day
1. Feeling down, depressed, or hopeless				
2. Little interest or pleasure in doing things				
3. Feeling bad about yourself – or that you are a failure or have let yourself or your family down				
4. Thoughts that you would be better off dead or of hurting yourself in some way				
5. Feeling nervous, anxious or on edge				
6. Not being able to stop or control worrying				
7. Worrying too much about different things				
8. Being so restless that it is hard to sit still				

**Note.** Items 1 to 4 assess symptoms of depression; items 5 to 8 assess symptoms of anxiety. Scoring system: 0=not at all, 1=several days, 2=more than half of the days, 3=nearly every day.

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