

# Study of the Depression, Anxiety Stress Scale (DASS) and Well-Being in Portuguese Children

*Estudio de la Escalas de Depresión Ansiedad Estrés (DASS) y del Bienestar en niños portugueses*

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## Abstract:

The prevalence of depression and anxiety symptoms in children and adolescents has been increasing, influenced by multiple risk factors that negatively impact mental health and well-being. This study aimed to evaluate the psychometric properties of the Depression, Anxiety, and Stress Scale (DASS) in children aged 9 and older and to examine the relationship between its dimensions, well-being, and psychological symptoms in Portuguese children. The sample included 618 participants (50.2% male), aged 9 to 18 years ( $M = 12.2$ ;  $SD = 2.88$ ). Results showed that the Portuguese DASS has good psychometric properties, with a stable and comparable structure across gender and age groups. Well-being (WHO-5) was negatively associated with anxiety, depression, and stress, indicating that higher psychological distress corresponds to lower perceived well-being. This study validates the use of the DASS in younger populations, providing a reliable tool for research and clinical practice in Portugal. Early detection of symptoms is essential to prevent academic, social, and long-term mental health consequences.

## Keywords:

Anxiety; Depression; Stress; Well-being; Psychological Symptoms; Children.

## Resumen:

La prevalencia de síntomas de ansiedad y depresión en niños y adolescentes ha aumentado en los últimos años, debido a múltiples factores de riesgo que afectan su salud mental y bienestar. Este estudio tuvo como objetivo evaluar las propiedades psicométricas de la Escala de Depresión, Ansiedad y Estrés (DASS) en niños a partir de los 9 años y analizar la relación entre sus dimensiones, el bienestar y los síntomas psicológicos en población portuguesa. La muestra incluyó 618 participantes (50,2% varones), con edades entre 9 y 18 años ( $M = 12,2$ ;  $DE = 2,88$ ). Los resultados muestran que la versión portuguesa de la EADS posee buenas propiedades psicométricas, siendo estable y comparable entre géneros y edades. Se encontró una asociación negativa entre bienestar y niveles de ansiedad, depresión y estrés. La estructura de la escala resultó ser estable y comparable entre niños y niñas, así como entre los participantes más jóvenes y los mayores, lo que respalda el uso de la DASS en análisis de comparación entre grupos. Este estudio valida la DASS para uso en investigación y práctica clínica, destacando la importancia de la identificación temprana de síntomas para prevenir dificultades académicas, exclusión social y riesgo de trastornos mentales futuros.

## Palabras claves:

Ansiedad; Depresión; Estrés; Bienestar; Síntomas psicológicos; Niños.

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## Introduction

### *Transition from Childhood to Adolescence*

Erikson (1959) proposed that human development unfolds across eight psychosocial stages, each defined by a central conflict that must be resolved for healthy growth. Successful resolution fosters competence and resilience, while unresolved conflicts hinder adaptation to future challenges. During the school-age years (5–12 years), children face the stage of industry versus inferiority. When they meet learning expectations and receive consistent encouragement and recognition, feelings of competence and self-esteem are strengthened. Conversely, unmet goals or insufficient support from parents and teachers may give rise to feelings of inferiority. The transition to adolescence (13–19 years) introduces the next developmental stage, identity versus role confusion, in which individuals seek to form a coherent sense of self by exploring values, goals, and social roles. Difficulties in establishing these roles may result in identity confusion.

Beyond psychosocial changes, late childhood through adolescence encompasses extensive physical, cognitive, emotional, and social transformations essential for adult development (Gniewosz & Gniewosz, 2020). Physiologically, this period is marked by puberty and its hormonal and biological processes, including the onset of menstruation and breast development in girls, and testicular enlargement in boys, accompanied by rapid growth in height across sexes. Secondary sexual characteristics emerge, such as body hair, voice deepening, and acne (Best & Ban, 2021).

Simultaneously, neurodevelopmental changes occur, most notably in the prefrontal cortex, which supports executive functions such as planning, decision-making, impulse control, and consequence evaluation. Engagement in both adaptive and maladaptive risk-taking behaviors, ranging from experimenting with novel challenges (e.g., changing schools) to illicit behavior, contributes to neural reorganization, particularly within this area (Best & Ban, 2021; Bolton, 2018).

The move from primary to secondary school represents a pivotal adjustment, introducing new academic expectations, responsibilities, and evolving social dynamics involving peers, teachers, and parents (Gniewosz & Gniewosz, 2020; Holt et al., 2023).

During this time, adolescents develop increasingly abstract and complex self-concepts. Although initial self-descriptions may appear inconsistent, a cohesive self-view gradually emerges. Self-evaluation occurs across multiple domains, like academic competence, social skills, or physical appearance, with overall self-esteem often influenced more strongly by specific dimensions, such as appearance among girls (Steinberg & Morris, 2001).

Relationships with others also undergo changes during this stage. There is a gradual restructuring of the relationships between young people and their parents, becoming more egalitarian, interdependent, and reciprocal. This may result in a temporary decrease in the quality of the relationship and an increase in conflicts, often associated with the need to negotiate greater autonomy. Peer relationships begin to gain increasing importance, occupying a significant part of young people's lives (Alsarrani et al., 2022; Branje, 2018).

In terms of emotional and cognitive changes, this stage is characterized by the development of abstract cognitive abilities, affective skills related to empathy and social understanding, and greater emotional and behavioral self-regulation. These skills are essential for setting and



achieving new goals and for coping with novel and sometimes challenging situations (Dahl et al., 2018).

A more negative adjustment to these changes may lead the young person to feel lost or fearful, potentially affecting their well-being, increasing stress and anxiety levels, and having repercussions on academic performance (Gniewosz & Gniewosz, 2020)

### *Well-being in Children and Adolescents*

Well-being refers to the capacity to realize one's potential, engage productively and creatively, and sustain positive, meaningful relationships (Zhang et al., 2022). It can be examined from both an objective and a subjective perspective. Objectively, well-being refers to measurable indicators such as economic and sociodemographic factors. Subjective well-being, in contrast, concerns an individual's perception of their own life. This includes affective components, namely, the presence or absence of positive and negative emotions, as well as overall life satisfaction and satisfaction in specific areas of life (Cooper et al., 2014; Diener et al., 1999).

Drawing upon Bronfenbrenner's Ecological Model of Human Development (1979), UNICEF has developed a theoretical model of child and adolescent well-being that positions the young person at the center of a network of interacting systems. Within this model, well-being is influenced by three levels of context: the child's world, the world surrounding the child, and the broader world. The child's world comprises factors experienced directly by the young person, such as activities, including play, learning, and socialization, and relationships with family and peers. The world surrounding the child encompasses resources and social networks, such as family economic conditions, neighborhood characteristics, and interpersonal connections within the child's immediate environment. While these influences are not always experienced directly, they can significantly affect well-being; one example is the impact of parental work-related stress on a child's daily life. Finally, the broader world refers to the public policy framework and the wider social context. Public policies include national programs with direct implications for the lives of children, such as those in education, health, and social protection. The broader social context encompasses large-scale economic, societal, and environmental conditions that exert direct or indirect influence on well-being (UNICEF Innocenti, 2020, 2025)

During this transitional stage from childhood to adolescence, fostering well-being is essential in protecting adolescents from adverse circumstances while equipping them with the skills and capacities necessary to manage the numerous changes they encounter. This approach enables them to contribute more effectively to their communities and supports the maintenance of their physical and mental health into adulthood. In collaboration with the World Health Organization, Ross et al. (2020) identified five interrelated domains that influence adolescent well-being: (a) good health and nutrition; (b) connectivity; (c) safety and environmental support; (d) learning, education, competencies, and employability; and (e) action and resilience. Achieving good health and nutrition requires that adolescents have access to accurate health information, high-quality care, and appropriate health services, coupled with a safe and healthy environment. The regular practice of physical activity and adherence to a balanced and nutritious diet are also indispensable components. The domain connectivity involves opportunities for active participation in social, cultural, and civic activities aimed at fostering change, personal growth, and community development. It also entails involvement in decision-making processes, the promotion of care and respect for others, and the cultivation of interpersonal abilities. Safety

and environmental support include safeguarding adolescents from violence and exploitation, ensuring access to basic needs such as food, clothing, housing, and physical safety, providing political and legal support, guaranteeing fundamental rights, and safeguarding the right to privacy. Opportunities for leisure and the freedom to express personal beliefs are also considered vital within this domain. The domain of learning encompasses access to both formal and informal education, employment opportunities, and skills development. These elements facilitate a commitment to learning while promoting the development of self-confidence. Finally, action and resilience relate to adolescents' abilities to make informed choices, influence their surroundings, and shape their futures. Ensuring that adolescents have access to safe spaces where they can explore and construct their identities, achieve personal and academic goals, and develop the skills necessary to overcome adversity and navigate obstacles is essential.

According to the UNICEF Innocenti framework (2020), child well-being can be understood across three interconnected dimensions: mental well-being, physical health, and competencies. Mental well-being includes both positive indicators, such as life satisfaction, and negative indicators, such as suicide rates among children and adolescents. Physical health is assessed using measures such as the prevalence of overweight and obesity, as well as child mortality rates. Competencies comprise academic performance, measured by proficiency in reading and mathematics, and social skills, including the ability to establish friendships.

Well-being is shaped by a complex interplay of individual, psychological, and social factors that contribute to the health and development of children and adolescents (Karunamuni et al., 2021). Variables such as gender, diet, physical activity, sleep quality, substance use (including tobacco and alcohol), relationships with family and peers, and the presence of psychological symptoms (e.g., anxiety) all exert measurable effects on well-being (Alsarrani et al., 2022; Wu & Lee, 2022). The World Health Organization (2024) estimates that one in seven adolescents experiences a mental health disorder, with anxiety and depression the most prevalent. These conditions increase vulnerability to social exclusion, discrimination, stigma surrounding help-seeking, poor academic outcomes, engagement in risky behaviors, and compromised physical health. This underscores the importance of examining how symptoms of anxiety, stress, and depression impact young people's mental health and diminish their overall well-being.

### *Anxiety, Stress, and Depression in Children and Adolescents*

Anxiety disorders are the most frequent mental health conditions among youth, with symptom patterns varying according to age. For example, separation anxiety is more prevalent among children, while social anxiety occurs more frequently among adolescents (Rapee et al., 2023).

An inhibited temperament, parental anxiety symptoms, and exposure to negative life events increase the likelihood of developing anxiety in young people (Lawrence et al., 2019; Liu & Bell, 2020; Rapee et al., 2023). School-related factors, such as negative evaluations from peers and teachers or high academic pressure, may also contribute to anxiety (Rapee et al., 2023).

Rates of depressive symptoms among children and adolescents have been increasing over time (Selph & McDonagh, 2019). Risk factors include limited autonomy in the parent-child relationship, low affective expression, high levels of conflict, family history of depression, experiences of abuse or neglect, exposure to traumatic events, and sustained stressful circumstances (Mangione et al., 2022; Zhang et al., 2021).



The transition between childhood and adolescence is characterized by heightened sensitivity to social contexts, with peer relationships becoming central to adolescents' lives and well-being. Difficulties in making friends or peer rejection are linked to increased stress levels. Academic overload, poverty, absence of parental support, experiences of bullying, and limited coping strategies further exacerbate vulnerability to stress (Sisk & Gee, 2022; Zisopoulou & Varvogli, 2023). Elevated stress may impair well-being, contributing to sleep disturbances and increased self-dissatisfaction (Lindholdt et al., 2022).

The presence of anxiety, depression, and stress adversely affects the social, emotional, and academic development of adolescents and increases the likelihood of developing additional mental health conditions in adulthood, such as suicidal ideation or substance abuse (Cantor et al., 2021; Lindholdt et al., 2022; Mangione et al., 2022).

### *Age and Gender Differences*

A longitudinal study conducted in 2023 (Yoon et al., 2023) demonstrated increases in emotional and behavioral difficulties between preadolescence (11–12 years) and mid-adolescence (13–14 years), accompanied by significant declines in subjective well-being. Gender differences were pronounced: girls reported markedly higher emotional difficulties and lower subjective well-being than boys starting in preadolescence, with these trends worsening annually. Meanwhile, at the onset of adolescence (11–12 years), boys exhibited higher levels of behavioral problems and attention/hyperactivity difficulties compared to girls.

Overall, girls appear more predisposed to developing internalizing problems during the transition from childhood to adolescence, reporting higher levels of anxiety (Rapee et al., 2023), depression (Zhang et al., 2021), and stress (Matud et al., 2024) than boys. These results reinforce the importance of assessing these symptoms among more vulnerable populations and implementing mental health support strategies aimed at promoting adolescent well-being.

### *Study Objective*

The present study seeks to evaluate the psychometric quality of the Depression, Anxiety, and Stress Scale (DASS) when applied to younger children (aged nine years and above) and to investigate the relationships among its dimensions, well-being, and psychological symptoms in Portuguese school-aged children.

## *Method*

### *Participants*

The sample included 618 participants (50.2% male), aged 9–18 years ( $M = 12.2$ ,  $SD = 2.88$ ).



## Measures and Variables

### *Depression Anxiety Stress Scale (DASS)*

The Depression Anxiety Stress Scale (DASS) (Lovibond & Lovibond, 1995; Portuguese version: Ribeiro et al., 2004) is a reference instrument for the assessment of anxiety, depression, and stress symptoms. The Portuguese version applied to young adults and adults consists of 21 items, organized into three subscales, each with seven items, enabling the measurement of each construct. It uses a four-point Likert-type response scale, where 1 indicates “Does not apply to me at all” and 4 indicates “Applies to me most of the time.”

In Portugal, the use of this scale has been primarily directed toward adults or young adults (e.g., Massano-Cardoso et al., 2024), with few and outdated studies examining how this scale performs in children and adolescents (e.g., Leal et al., 2009).

In the present study, the total scale demonstrated good internal consistency ( $\alpha = .910$ ), as did the various subscales: DASS Stress ( $\alpha = .796$ ), DASS Depression ( $\alpha = .813$ ), and DASS Anxiety ( $\alpha = .763$ ), in accordance with the criteria of Nunnally and Bernstein (1994).

### *World Health Organization-Five Well-Being Index (WHO-5)*

The World Health Organization-Five Well-Being Index (WHO-5) (WHO, 1988; Portuguese version: Gaspar et al., 2022) aims to assess well-being over the previous two weeks. It consists of five items (e.g., “I felt cheerful and in good spirits” – item 1) rated on a six-point Likert-type scale ranging from “All of the time” to “At no time.” Higher scores indicate greater well-being. In the present study, the scale demonstrated good internal consistency ( $\alpha = .846$ ), according to the criteria of Nunnally and Bernstein (1994).

### *Psychological Symptoms (HBSC)*

Psychological symptoms were assessed using a 4-item scale (nervousness, irritability/bad mood, sadness, and fear) with a five-point Likert-type response format, where 1 corresponds to “Almost every day” and 5 to “Rarely or never.” Scores range from 4 to 20, with higher values indicating fewer symptoms (Gaspar et al., 2024).

The original scale is part of the HBSC questionnaire. The HBSC/WHO (Health Behaviour in School-aged Children) is a collaborative study of the World Health Organization that aims to investigate adolescents’ lifestyles and behaviors across various aspects of their lives. It thus encompasses multiple dimensions of health, including demographic, behavioral, and psychosocial factors (Matos & Social, 2018). In the present study, the scale showed good internal consistency ( $\alpha = .738$ ), in accordance with the criteria of Nunnally and Bernstein (1994).

## Procedure

Data collection was conducted using two complementary approaches: in-person administration across the schools of the Agrupamento de Escola do Búzio, located in the municipality of Vale de Cambra, and digital administration through online links completed by participants

A centralized web-based platform was developed to support data collection, integration, and management. Concurrently, a mobile application was made available to children, adolescents, and young people aged 8 to 18 years, enabling voluntary participation through supplementary questions and facilitating broader study dissemination. Environmental data from classrooms were also collected using Internet of Things (IoT) sensors and integrated into the digital platform to enrich subsequent analyses.

Statistical analyses were performed using SPSS, applying descriptive, comparative, and correlational techniques to examine relationships among the study variables.

## Descriptive Statistics

### Table 1

	Minimum	Maximum	M	SD
DASS Total	0	3,00	0,48	0,43
DASS Stress	0	3,00	0,55	0,51
DASS Depression	0	3,00	0,47	0,50
DASS Anxiety	0	3,00	0,42	0,45
WHO-5	0	20	15,09	3,96
Psychological Symptoms	0	12	3,78	2,69

8



## Group Comparisons

### Gender

Statistically significant differences between genders were found for the DASS Total [ $t(565.894) = 2.460$ ,  $p = .007$ ,  $d = .204$ ], DASS Stress [ $t(568.252) = 2.843$ ,  $p = .002$ ,  $d = .236$ ], DASS Anxiety [ $t(545.941) = 2.741$ ,  $p = .003$ ,  $d = .227$ ], and Psychological Symptoms [ $t(560) = 2.277$ ,  $p = .012$ ,  $d = .192$ ], with females reporting higher mean scores across all these variables, as shown in Table 2.

**Table 2**

*Differences Between Female and Male Participants for the Variables Under Study*

	Female		Male		T/sig	d
	M	SD	M	SD		
DASS Total	.52	.46	.44	.40	2.460**	.204
DASS Stress	.61	.54	.49	.46	2.834**	.236
DASS Depression	.49	.46	.49	.51	1.067	.089
DASS Anxiety	.47	.50	.37	.39	2.741**	.227
WHO-5	14.83	4.12	15.36	3.77	- 1.612	-.136
Psychological Symptoms	4.03	2.72	3.52	2.63	2.277**	.192

Note \* $p < .05$ ; \*\* $p < .01$ ; \*\*\*  $p < .001$

### Age

Significant differences were also found between age groups. Older participants (13 years and above) reported higher scores on the DASS Total [ $t(576) = -1.972$ ,  $p = .025$ ,  $d = -.164$ ], DASS Stress [ $t(576) = -1.926$ ,  $p = .027$ ,  $d = -.160$ ], DASS Depression [ $t(561.532) = -1.738$ ,  $p = .041$ ,  $d = -.145$ ], and Psychological Symptoms [ $t(536.504) = -4.650$ ,  $p < .001$ ,  $d = -.394$ ]. Conversely, younger participants (up to 12 years) showed higher WHO-5 well-being scores [ $t(530.890) = 5.783$ ,  $p < .001$ ,  $d = .493$ ], as shown in Table 3.

**Table 3**

*Differences Between Age Groups for the Variables Under Study*

	Up to 12 years old (inclusive)		13 years or older		T/sig	d
	M	SD	M	SD		
DASS Total	.45	.41	.52	.45	-1.972*	-.164
DASS Stress	.52	.49	.60	.52	-1.926*	-.160
DASS Depression	.43	.48	.50	.51	-1.738*	-.145
DASS Anxiety	.39	.42	.45	.48	-1.602	-.134
WHO-5	16	3.59	14.10	4.10	5.783***	-.493
Psychological Symptoms	3.27	2.44	4.31	2.83	-4.650***	-.394

Note \* $p < .05$ ; \*\* $p < .01$ ; \*\*\*  $p < .001$

## Correlation

All variables were significantly correlated with each other (Table 4). Notably, WHO-5 well-being scores were negatively correlated with all other study variables, indicating that higher well-being is associated with lower DASS Total scores, as well as lower stress, depression, anxiety, and psychological symptoms.

**Table 4**

*Correlations Between the Variables Under Study*

	DASS Stress	DASS Depression	DASS Anxiety	WHO-5	Psychological Symptoms
DASS Total	.907***	.884***	.896***	-.467***	.479***
DASS Stress		.685***	.742***	-.413***	.456***
DASS Depression			.685***	-.457***	.416***
DASS Anxiety				-.378***	.414***
WHO-5					-.631***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

## Confirmatory Factor Analysis

Confirmatory factor analyses (CFA) were conducted to test the unifactorial structure of each DASS subscale (Stress, Depression, and Anxiety) using Maximum Likelihood (ML) estimation.

For Stress, the unifactorial model showed good fit [ $\chi^2(14) = 34.147$ ,  $p = .002$ ], with excellent fit indices: CFI = 0.978, TLI = 0.967, RMSEA = 0.050 (90% CI [0.029, 0.071],  $p = .468$ ), and SRMR = 0.027. For Anxiety, the model showed adequate fit:  $\chi^2(14) = 47.93$ ,  $p < .001$ ; CFI = 0.955, TLI = 0.933; RMSEA = 0.065 (90% CI [0.045, 0.085],  $p = .102$ ), SRMR = 0.034. For Depression, global fit was at minimally acceptable levels:  $\chi^2(14) = 99.97$ ,  $p < .001$ ; CFI = 0.923, TLI = 0.885; RMSEA = 0.103 (90% CI [0.085, 0.123],  $p < .001$ ), SRMR = 0.046 (Table 5).

Multigroup invariance analyses evaluated the equivalence of the DASS factor structure across gender and age groups. Results supported configural, metric, and scalar invariance in both cases, with CFI differences  $< .01$  and RMSEA differences  $< .015$  between consecutive models. These results indicate that the DASS structure is stable and comparable across boys and girls, as well as younger and older participants, supporting its use in differential group analyses.

**Table 5**

*Adjustment Indices and Related Measures*

	x <sup>2</sup>	gl	SRMR	GFI	CFI	TLI	RMSEA (90% IC)
DASS Stress	34.147**	14	.027	.988	.978	.967	.050 (.029 - .071)
DASS Depression	99.972***	14	.046	.963	.923	.885	.103 (.085 - .123)
DASS Anxiety	47.925***	14	.034	.980	.955	.933	.065 (.045 - .085)

Note. \*p < .05; \*\*p < .01; \*\*\* p < .001

## Discussion

### *Psychometric Study of the DASS for Children and Adolescents*

The findings indicate that the Portuguese version of the DASS demonstrates strong psychometric properties when administered to children and adolescents. Internal consistency coefficients for the total scale and its subscales were satisfactory, supporting the reliability of the instrument for this age group (Nunnally & Bernstein, 1994). Confirmatory Factor Analysis (CFA) revealed acceptable fit indices for the Stress and Anxiety dimensions, whereas the Depression dimension presented slightly weaker indices, approaching the minimal acceptable thresholds. These results are consistent with previous validations of the DASS in Portuguese samples (Ribeiro et al., 2004; Leal et al., 2009), while extending empirical evidence to school-aged children and adolescents. This emphasizes the need for reliable and valid screening tools capable of identifying early signs of psychological distress in younger populations (Lovibond & Lovibond, 1995).

### *Relationship Between DASS Dimensions, Well-Being, and Psychological Symptoms*

A significant negative correlation was observed between well-being (WHO-5) and the DASS subscales of anxiety, depression, and stress, confirming that higher levels of psychological distress correspond to lower subjective well-being (Gaspar et al., 2022; Wu & Lee, 2022). This finding aligns with international evidence demonstrating that internalizing symptoms constitute key vulnerability factors for adolescent mental health (Rapee et al., 2023; Zhang et al., 2021). Positive correlations between DASS dimensions and HBSC psychological symptom indicators (Gaspar et al., 2024; Matos & Social, 2018) further suggest that the instrument effectively captures the influence of these symptoms on adolescents' daily functioning.

Gender and age analyses replicated patterns found in prior studies: girls reported higher levels of anxiety, depression, and stress (Matud et al., 2024; Yoon et al., 2023), while older adolescents exhibited lower well-being and greater symptomatology (Gniewosz & Gniewosz, 2020). These findings underscore the importance of considering developmental stage, gender, and sociocultural context when examining adolescent well-being (Alsarrani et al., 2022; Steinberg & Morris, 2001).



## Study Limitations

Several limitations should be acknowledged. First, the use of a convenience sample drawn from a single school cluster may restrict the generalizability of results to other geographic or socioeconomic populations. Second, the reliance on self-report measures introduces potential bias due to social desirability or limited comprehension among younger participants. Finally, as the study employed a cross-sectional design, causal relationships between anxiety, depression, stress, and well-being cannot be established. Longitudinal designs are recommended for future research to clarify developmental trajectories and causal pathways.

## Contributions and Implications for Practice

This study contributes to the literature by validating the DASS for younger populations and providing a psychometrically robust instrument for both research and applied settings in Portugal. Early detection of anxiety, depression, and stress symptoms is essential to prevent medium- and long-term negative outcomes, such as academic underachievement, social withdrawal, and heightened risk of mental health disorders in adulthood (Cantor et al., 2021; Mangione et al., 2022). Moreover, the findings advocate for integrating well-being assessments that complement the evaluation of negative symptoms with indicators of positive mental health (Ross et al., 2020; UNICEF Innocenti, 2020, 2025).

In practical terms, DASS can be effectively employed in educational and community contexts as a screening instrument to support teachers, psychologists, and health professionals in designing targeted mental health promotion strategies tailored to age and gender differences. These results highlight the importance of developing public policies and intervention programs focused on prevention and the promotion of well-being among children and adolescents, consistent with current World Health Organization recommendations (WHO, 2024).

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## References

- Alsarrani, A., Hunter, R. F., Dunne, L., & Garcia, L. (2022). Association between friendship quality and subjective wellbeing among adolescents: a systematic review. *BMC public health*, 22(1), 2420. <https://doi.org/10.1186/s12889-022-14776-4>
- Best, O., & Ban, S. (2021). Adolescence: physical changes and neurological development. *British Journal of Nursing*, 30(5), 272-275. <https://doi.org/10.12968/bjon.2021.30.5.272>
- Bolton, J. (2018). Inventing ourselves: the secret life of the teenage brain. *Educational Psychology in Practice*, 34:4, 453-4 <https://doi.org/10.1080/02667363.2018.1512183>

- Branje, S. (2018). Development of parent-adolescent relationships: Conflict interactions as a mechanism of change. *Child development perspectives*, 12(3), 171-176. <https://doi.org/10.1111/cdep.12278>
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by Nature and Design*. Harvard University Press.
- Cantor, A. G., Jungbauer, R. M., McDonagh, M., Blazina, I., Marshall, N. E., Weeks, C., Fu, R., LeBlanc, E. S., & Chou, R. (2021). Counseling and Behavioral Interventions for Healthy Weight and Weight Gain in Pregnancy: Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA*, 325(20), 2094-2109. <https://doi.org/10.1001/jama.2021.4230>
- Dahl, R., Allen, N., Wilbrecht, L. et al. Importance of investing in adolescence from a developmental science perspective. *Nature* 554, 441-450 (2018). <https://doi.org/10.1038/nature25770>
- Gaspar, T., Carvalho, M., Guedes, F. B., Cerqueira, A., & de Matos, M. G. (2024). Who are the Happy Girls? Gender Comparison Using a Biopsychosocial Approach: Health Behavior School-Aged Children Study in Portugal During Covid-Pandemic. *Child Indicators Research*, 17(2), 845-868.
- Gaspar, T., Cerqueira, A., Guedes, F.B. et al. (2022). Parental Emotional Support, Family Functioning and Children's Quality of Life. *Psychological Studies*, 67, 189-199 <https://doi.org/10.1007/s12646-022-00652-z>
- Gniewosz, G., & Gniewosz, B. (2020). Psychological adjustment during multiple transitions between childhood and adolescence. *The Journal of Early Adolescence*, 40(4), 566-598. <https://doi.org/10.1177/0272431619858422>
- Holt, D., Hardley, S., Gray, S., & McQuillan, R. (2023). Facilitating a positive transition: A case study exploring the factors that support social, emotional and mental wellbeing from primary to secondary school. *Pastoral Care in Education*, 41(3), 306-324. <https://doi.org/10.1080/02643944.2022.2093952>
- Karunamuni, N., Imayama, I., & Goonetilleke, D. (2021). Pathways to well-being: Untangling the causal relationships among biopsychosocial variables. *Social Science & Medicine*, 272. <https://doi.org/10.1016/j.socscimed.2020.112846>
- Lawrence, P. J., Murayama, K., & Creswell, C. (2019). Systematic Review and Meta-Analysis: Anxiety and Depressive Disorders in Offspring of Parents With Anxiety Disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 58(1), 46-60. <https://doi.org/10.1016/j.jaac.2018.07.898>
- Leal, I. P., Antunes, R., Passos, T., Pais-Ribeiro, J., & Maroco, J. (2009). Estudo da escala de depressão, ansiedade e stresse para crianças (EADS-C). *Psicologia, Saúde & Doenças*, 10(2), 277-284.
- Liu, R., & Bell, M. A. (2020). Fearful Temperament and the Risk for Child and Adolescent Anxiety: The Role of Attention Biases and Effortful Control. *Clinical child and family psychology review*, 23(2), 205-228. <https://doi.org/10.1007/s10567-019-00306-z>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour research and therapy*, 33(3), 335-343. [https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u)
- Mangione, C. M., Barry, M. J., Nicholson, W. K., Cabana, M., Chelmow, D., Coker, T. R., Davidson, K. W., Davis, E. M., Donahue, K. E., Jaén, C. R., Kubik, M., Li, L., Ogedegbe, G., Pbert, L., Ruiz,



- J. M., Silverstein, M., Stevermer, J., & Wong, J. B. (2022). Screening for Depression and Suicide Risk in Children and Adolescents: US Preventive Services Task Force Recommendation Statement. *JAMA*, 328(15), 1534-1542. <https://doi.org/10.1001/jama.2022.16946>
- Massano-Cardoso, I. M., de Carvalho Figueiredo, S., & Galhardo, A. (2024). Ansiedade, depressão e stress em estudantes universitários deslocados da sua residência. *Revista Portuguesa de Investigação Comportamental e Social*, 10(2), 1-15. <https://doi.org/10.31211/rpics.2024.10.2.343>
- Matos, M. G. D., & Social, E. A. (2018). A saúde dos adolescentes portugueses após a recessão. Relatório do estudo Health Behaviour in School Aged Children (HBSC).
- Matud, M. P., Ibáñez, I., Fortes, D., & Bethencourt, J. M. (2024). Adolescent stress, psychological distress and well-being: A gender analysis. *Child & Youth Services*, 45(3), 300-323. <https://doi.org/10.1080/0145935X.2023.2210833>
- Nunnally, J.C., & Bernstein, I.H. (1994) *Psychometric Theory*. McGraw-Hill, Inc.
- Rapee, R. M., Creswell, C., Kendall, P. C., Pine, D. S., & Waters, A. M. (2023). Anxiety disorders in children and adolescents: A summary and overview of the literature. *Behaviour research and therapy*, 168, 104376. <https://doi.org/10.1016/j.brat.2023.104376>
- Ribeiro, J. L. P., Honrado, A. A. J. D., & Leal, I. P. (2004). Contribuição para o estudo da adaptação portuguesa das escalas de ansiedade, depressão e stress (EADS) de 21 itens de Lovibond e Lovibond. *Psicologia, Saúde & Doenças*, 2, 229-239
- Ross, D. A., Hinton, R., Melles-Brewer, M., Engel, D., Zeck, W., Fagan, L., Herat, J., Phaladi, G., Imbago-Jácome, D., Anyona, P., Sanchez, A., Damji, N., Terki, F., Baltag, V., Patton, G., Silverman, A., Fogstad, H., Banerjee, A., & Mohan, A. (2020). Adolescent well-being: A definition and conceptual framework. *Journal of Adolescent Health*, 67(4), 472-476. <https://doi.org/10.1016/j.jadohealth.2020.06.042>
- Selph, S. S., & McDonagh, M. S. (2019). Depression in Children and Adolescents: Evaluation and Treatment. *American family physician*, 100(10), 609-617.
- Sisk, L. M., & Gee, D. G. (2022). Stress and adolescence: vulnerability and opportunity during a sensitive window of development. *Current opinion in psychology*, 44, 286-292. <https://doi.org/10.1016/j.copsyc.2021.10.005>
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual review of psychology*, 52, 83-110. <https://doi.org/10.1146/annurev.psych.52.1.83>
- UNICEF Innocenti – Global Office of Research and Foresight. (2025). Innocenti Report Card 19: Child well-being in an unpredictable world. UNICEF Innocenti.
- UNICEF Office of Research – Innocenti. (2020). Worlds of influence: Understanding what shapes child well-being in rich countries (Innocenti Report Card 16). UNICEF Innocenti.
- World Health Organization. (1998). *The World Health Organisation-Five Well-being Index (WHO-5)*. Geneva (Switzerland): WHO.
- World Health Organization. (2024, 10 de outubro). Mental health of adolescents. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- Wu, Y. J., & Lee, J. (2022). The most salient global predictors of adolescents' subjective Well-Being: parental support, peer support, and anxiety. *Child Indicators Research*, 15(5), 1601-1629. <https://doi.org/10.1007/s12187-022-09937-1>
- Zhang, X., Yang, H., Zhang, J., Yang, M., Yuan, N., & Liu, J. (2021). Prevalence of and risk factors for depressive and anxiety symptoms in a large sample of Chinese adolescents in the



- post-COVID-19 era. *Child and adolescent psychiatry and mental health*, 15(1), 80. <https://doi.org/10.1186/s13034-021-00429-8>
- Zhang, Y., Chen, S., Wu, H., & Guo, C. (2022). Effect of mindfulness on psychological distress and well-being of children and adolescents: A meta-analysis. *Mindfulness*, 13(2), 285-300. <https://doi.org/10.1007/s12671-021-01775-6>
- Zisopoulou, T., & Varvogli, L. (2023). Stress Management Methods in Children and Adolescents: Past, Present, and Future. *Hormone research in paediatrics*, 96(1), 97-107. <https://doi.org/10.1159/000526946>