Development of an Adolescent Mental Health Scale Based on the Mentalkusehat.com Digital Platform

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Abstract

Adolescent mental health is a critical concern in school guidance and counseling services; however, valid and reliable digital self-screening instruments remain limited in the Indonesian context. This study aimed to develop and validate a digital adolescent mental health scale, adapted from the Depression Anxiety Stress Scales–21 (DASS-21), and to integrate it into the mentalkusehat.com platform. Instrument development followed Azwar's eight-stage psychological scale-construction model and was tested with 150 senior high school students. Content validity showed excellent results, with Item-Level Content Validity Index (I-CVI) and Scale-Level Content Validity Index (S-CVI/Ave) values of 1.00. Construct validity was examined using Confirmatory Factor Analysis (CFA), supporting a three-factor model (stress, anxiety, and depression) with acceptable fit indices (CFI = 0.939; TLI = 0.930; RMSEA = 0.067). Internal consistency was high, with Cronbach's alpha values exceeding 0.80 across subscales. Platform feasibility evaluation using the ACTIONS model yielded a score of 92.86%, categorized as highly feasible. These findings support the instrument's usefulness for early detection and need assessment in school counseling services and contribute to the digitalization of adolescent mental health assessment in Indonesia.

Keywords: adolescent mental health, DASS-21, digital assessment, guidance and counseling, validity and reliability

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INTRODUCTION

Adolescent mental health is an important aspect of individual development that affects academic, social, and emotional functioning. Adolescence is marked by rapid biological, cognitive, and social changes, placing individuals in a vulnerable phase for various emotional problems such as stress, anxiety, and depression (Santrock, 2019). Globally, World Health Organization (WHO) data show that one in seven adolescents aged 10–19 experiences a mental disorder, accounting for about 15% of the global disease burden in this age group, with depression, anxiety, and behavioral disorders among the leading causes of illness and disability in adolescents (World Health Organization, 2025). Consistent with these findings, mental health has also become a topic of discussion within the school counseling (BK) teacher community in Ponorogo, where many counselors report that their students are beginning to show various symptoms of mental health problems, such as easily feeling tired and overwhelmed by academic demands, difficulty concentrating in class, psychosomatic complaints (headaches, stomachaches) without clear medical causes, social withdrawal, excessive anxiety about teachers' or peers' evaluations, and the emergence of prolonged sadness, loss of interest in previously enjoyed activities, and decreased learning motivation indicating depression. These findings underscore the importance of utilizing guidance and counseling services for needs assessment and as a basis for planning prevention programs, including interventions such as mindfulness-based stress reduction to maintain students' mental health (Dewi & Wahyuni, 2025).

The development of digital technology also influences the dynamics of adolescents' lives. The intensity of social media use, information overload, and increasing academic and social demands contribute to psychological pressure among adolescents (Odgers & Jensen, 2020). This situation requires guidance and counseling services to adapt to technology-based approaches, not only in interventions but also in psychological assessment. Accessible, efficient, and adolescent-relevant mental health measurement instruments are an urgent need in contemporary guidance and counseling practice, particularly to support early identification and preventive interventions in school settings (Thapar et al., 2022;Ardi & Ifdil, 2020).

Recent epidemiological studies emphasize that early identification of mental health problems in adolescents is critical, as many conditions, such as anxiety, depression, and behavioral disorders, emerge during adolescence and may progress into chronic disorders without timely intervention. Failure to detect these problems early can result in long-term consequences, including impaired academic performance, disrupted social functioning, and reduced emotional well-being into adulthood (Cosma et al., 2025). Therefore, it is important for school counselors to conduct early detection through systematic monitoring, the use of appropriate screening instruments, and the provision of early intervention and relevant referrals so that symptoms of stress, anxiety, and depression in adolescents do not progress into more severe disorders.

Previous research shows that mental health measurement generally focuses on major negative emotional conditions, namely depression, anxiety, and stress. One instrument widely used internationally is the Depression Anxiety Stress Scales (DASS) developed by Lovibond & Lovibond (1995). This instrument was designed to empirically differentiate the three constructs and has been shown to have a clear factor structure and good reliability in non-clinical populations. DASS, particularly the short version DASS-21, was developed as a mapping tool for emotional conditions along a severity continuum and is not intended as a clinical diagnostic tool, making it relevant for screening and early

assessment contexts. In addition to instruments focusing on psychological distress and negative emotional symptoms, research in Indonesia also shows efforts to develop and adapt mental health scales using broader approaches. Mukminin et al. (2024) developed a mental health scale for senior high school students with three dimensions making peace with oneself, social interaction functioning, and fulfillment of basic and advanced psychological needs with good reliability, although it still had limitations in item representativeness for one factor. Hartanto et al. (2024) adapted the Arabic Scale of Mental Health (ASMH) to the Indonesian context using the Rasch model and produced an instrument emphasizing positive indicators such as life satisfaction, optimism, meaning in life, and emotional stability, with adequate reliability and item characteristics. Similarly, Putri and Harahap (2025) the Mental Toughness-8 (MT-8) into Indonesian through standardized adaptation procedures and confirmatory factor analysis, showing a well-fitting and reliable model. However, these three studies have not specifically produced a concise digital self-screening instrument designed to simultaneously map symptoms of stress, anxiety, and depression within the context of school guidance and counseling services. Despite the availability of various adolescent mental health instruments, these limitations indicate that developing an adolescent mental health scale adapted from the Depression Anxiety Stress Scales–21 (DASS-21) and aligned with the characteristics of digital adolescents remains an urgent need.

Based on the above discussion, a clear research gap remains in the development of adolescent mental health instruments that combine a strong theoretical foundation, a validated factor structure, and full adaptation to digital formats. School guidance and counseling services require efficient, accessible screening tools that align with adolescents' digital characteristics. Therefore, the digital adaptation of the Depression Anxiety Stress Scales–21 (DASS-21) remains necessary, despite the availability of other mental health instruments, to support early detection and systematic needs assessment in schools.

From a practical perspective, the development of a digital DASS-21-based instrument is expected to support school mental health policies by providing counselors with an evidence-based and technology-friendly assessment tool. From a theoretical perspective, this study contributes to the literature on digital psychological assessment by providing empirical evidence regarding the validity and reliability of a digitally adapted DASS-21 for Indonesian adolescents.

Digital-based screening approaches offer advantages in accessibility, efficiency, and user convenience. Research indicates that digital mental health instruments can increase adolescents' engagement in the initial assessment process and support broader early detection of mental health problems (Lehtimaki et al., 2021). Therefore, developing an adolescent mental health instrument based on a digital platform is a relevant strategy to support preventive and promotive guidance and counseling services. Based on this literature review, a research gap can be identified in the suboptimal development of digital-based adolescent mental health instruments that integrate a strong theoretical foundation, a clear factor structure, and alignment with adolescents' developmental characteristics. The scientific novelty of this study lies in developing an adolescent mental health scale on the digital platform Mentalkusehat.com by adapting the DASS-21 structure, designed as a self-assessment and early screening tool to contextually and accessibly map depression, anxiety, and stress among adolescents.

This research problem focuses on adapting the DASS-21 structure into a digitally based adolescent mental health scale and evaluating the quality of the developed scale.

Therefore, the purpose of this article is to develop an adolescent mental health scale on the digital platform Mentalkusehat.com and to test its structural validity and reliability as a self-assessment and early screening instrument within guidance and counseling services. Accordingly, this study is guided by the following research questions: how the DASS-21 structure can be adapted into a digital-based adolescent mental health scale; whether the adapted digital scale demonstrates adequate content and construct validity in measuring stress, anxiety, and depression among senior high school students; and whether the scale exhibits satisfactory internal reliability as a self-assessment and early screening instrument within school guidance and counseling services.

METHOD

The scale development model in this study refers to the eight stages of psychological test development proposed by Azwar (2015). These stages include: (1) identification of the measurement purpose, namely formulating the scale as a self-screening tool to map symptoms of stress, anxiety, and depression among senior high school adolescents within the context of guidance and counseling services; (2) delimiting the measurement domain based on the three-dimensional structure of the DASS-21 (depression, anxiety, stress) adapted to the Indonesian adolescent context; (3) operationalizing the aspects into indicators relevant to adolescents' experiences, such as academic pressure, social relationships, and digital activities; (4) item writing and review, i.e., adapting DASS-21 items into Indonesian with contextual adjustments to school settings and adolescents' daily lives; (5) language evaluation through expert review, in which the item structure and wording were examined by psychologists and guidance and counseling lecturers with expertise in assessment development to evaluate term clarity, readability, and cultural appropriateness, without conducting direct language testing with students; (6) a field test with senior high school students; (7) item revision based on the results of validity and reliability analyses; and (8) finalizing the scale and integrating it into the digital platform mentalkusehat.com.

The adaptation of the Depression Anxiety Stress Scales–21 (DASS-21) into a digital adolescent mental health scale followed a systematic translation and cultural adaptation process, including forward translation, back-translation, and cultural adjustment, in accordance with established guidelines for cross-cultural instrument adaptation (Beaton et al., 2000; International Test Commission, 2017). First, the original English version of the DASS-21 was translated into Indonesian through a forward translation procedure conducted by bilingual experts with backgrounds in psychology and guidance and counseling. The translation focused on preserving the original conceptual meaning of each item while ensuring linguistic clarity and suitability for Indonesian adolescents.

Next, a back-translation process was performed by an independent bilingual translator who was not involved in the initial translation. The back-translated version was then compared with the original DASS-21 to identify discrepancies in meaning, terminology, and nuance. Any inconsistencies were discussed collaboratively by the research team and experts to ensure semantic equivalence between the original and adapted versions. Following this stage, cultural and contextual adjustments were made to align item wording with adolescents' daily experiences in school settings, peer interactions, and academic demands, without altering the original three-factor structure (stress, anxiety, and depression). The adapted items were subsequently reviewed by experts in psychology and guidance and counseling to evaluate clarity, cultural relevance,

and appropriateness for use as a digital self-screening instrument. This process ensured that the adapted scale retained the theoretical foundation of the DASS-21 while being linguistically and culturally suitable for Indonesian senior high school students.

After completing the translation and cultural adaptation process, the operationalization stage involved elaborating each DASS-21 dimension into more specific sub-variables. For example, the stress dimension included difficulty relaxing, emotional reactivity, bodily tension, irritability, difficulty achieving relaxation, being easily annoyed, and intolerance of delays or minor disruptions; the anxiety dimension included physical reactions, breathing difficulties, trembling, social anxiety, loss of control, irrational fears, and feelings of panic; while the depression dimension included low positive affect, low motivation, hopelessness, negative mood, anhedonia, low self-esteem, and low sense of meaning in life (P. F. Lovibond, 1995). The subsequent item writing and review stage produced statements that reflected these sub-variables in a concrete and contextual manner, for instance: "*Saya merasa sulit untuk menenangkan diri setelah menghadapi masalah baik di sekolah maupun di tempat yang lain*" (difficulty relaxing), "*Saya merasa reaksi saya terhadap masalah di sekolah terlalu berlebihan*" (emotional reactivity), "*Saya merasa mulut saya kering saat saya gugup atau cemas, misalnya sebelum berbicara di depan kelas*" (physical reaction of anxiety), or "*Saya merasa tidak bisa merasakan kebahagiaan, bahkan ketika bersama teman-teman*" (low positive affect). Overall, the item construction in this study was explicitly grounded in the DASS-21 structure, which consists of 21 statements.

Responses were recorded using a four-point Likert-type scale ranging from 0 to 3. The response categories were defined as follows: 0 = Never, 1 = Sometimes, 2 = Often, and 3 = Very Often. Dimension scores were obtained by summing item responses within each subscale, with higher scores indicating greater symptom severity in the corresponding domain (i.e., depression, anxiety, or stress). The scale was administered as a self-report measure via a digital link distributed by school counselors, supporting its intended use as a digitally accessible self-screening instrument within school guidance and counseling services. All original DASS-21 statements served as the primary reference and were adapted into Indonesian and adjusted to the context of senior high school adolescents' lives, particularly learning situations, peer relationships, family dynamics, and digital media use, so that the conceptual structure of DASS-21 was preserved while remaining culturally and linguistically appropriate for the end users, namely adolescents.

The participants of this study consisted of 150 senior high school students enrolled in Grade 10 and Grade 11 at State High School 1 Sampung Ponorogo. The participants' ages ranged from 15 to 17 years, which is typical for Indonesian senior high school adolescents. The sample included 65 male students and 85 female students. A convenience sampling technique was employed in this study. This approach involves selecting participants based on accessibility and availability and is commonly used in preliminary instrument development research (Creswell & Creswell, 2018). The participants were selected based on accessibility, as the researcher is professionally affiliated with State High School 1 Sampung Ponorogo, which facilitated coordination, administrative approval, and data collection. This sampling approach was considered appropriate given the study's purpose, which focused on the initial development and validation of a digital mental health self-screening instrument in a real school counseling context. Data collection was conducted with the assistance of school counselors, and student participation was voluntary.

Data analysis was conducted to examine the content validity, construct validity, and reliability of the developed digital adolescent mental health scale. Content validity was evaluated through expert judgment involving three experts**,** and the data were analyzed using the Item-Level Content Validity Index (I-CVI) and the Scale-Level Content Validity Index (S-CVI/Ave), as formulated by Lynn (1986) and further clarified by Polit & Beck (2006). The use of expert judgment to assess item relevance and representativeness of the measured constructs has been widely recommended in the psychological measurement literature as a key approach to establishing content validity (Haynes et al., 1995). Reliability was evaluated by computing Cronbach's alpha coefficients for each subscale (stress, anxiety, and depression). Construct validity was examined using Confirmatory Factor Analysis (CFA) mwith Maximum likelihood estimation. All statistical analyses were performed using JASP software version 0.19.3. Model fit was evaluated based on commonly accepted goodness-of-fit criteria, including a Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) of ≥ 0.90, a Root Mean Square Error of Approximation (RMSEA) of ≤ 0.08, and a Standardized Root Mean Square Residual (SRMR) of ≤ 0.08, indicating acceptable model fit (Hu & Bentler, 1999; Hair et al., 2010). Cronbach's alpha values of ≥ 0.70 were considered indicative of acceptable internal consistency.

The feasibility of the digital platform used to administer the adolescent mental health scale was evaluated using the ACTIONS model, which includes seven aspects: Access, Cost, Teaching Functions, Interaction, Organizational Issues, Novelty, and Speed (Bates, 2015). The evaluation was conducted by two experts: one in guidance and counseling media (a guidance and counseling lecturer) and one in educational technology (a pedagogy lecturer). Each expert assessed the platform using a four-point Likert-type scale ranging from 1 (very low) to 4 (very high). The Access aspect assessed the platform's ease of access and usability for students and school counselors. Cost evaluated the affordability and efficiency of using the platform in the school context. Teaching Functions examined the platform's capacity to support guidance and counseling services, including the delivery of assessments and feedback. Interaction assessed the quality of user interaction, including navigation, responsiveness, and communication features. Organizational Issues evaluated compatibility with school systems and administrative procedures. Novelty assessed the level of technological innovation and relevance to adolescents' digital characteristics. Speed evaluated the platform's responsiveness and loading time. The feasibility score was calculated by summing the experts' ratings and converting the sum to a percentage to determine the platform's overall feasibility level. This evaluation aimed to ensure that the digital platform was not only psychometrically appropriate but also practical and suitable for implementation in school guidance and counseling services.

RESULTS AND DISCUSSION

Results

Results of Expert Validity Test

Content validity testing of the 21 items of the adapted DASS-21 scale was conducted through expert judgment involving three experts in psychology and guidance and counseling. Each expert rated every item according to its level of relevance using a four-point scale: 1 = Tidak Relevan (Not Relevant), 2 = Kurang Relevan (Less Relevant), 3 = Relevan (Relevant), and 4 = Sangat Relevan (Highly Relevant).

Table 1.
Results of Expert Validity Testing

Subscale	Number of Items	Average I-CVI	Interpretation
Stress	7	1.00	Excellent Content Validity
Anxiety	7	1.00	Excellent Content Validity
Depression	7	1.00	Excellent Content Validity

The analysis results indicated that all items obtained an I-CVI value of 1.00, meaning that all experts rated each item as either "Relevan" or "Sangat Relevan" (scores of 3 or 4). This reflects full consensus among experts on the instrument's content relevance of the instrument. Accordingly, the S-CVI/Ave value for this scale was 1.00, indicating very high content validity (Polit & Beck, 2006; Yusoff, 2019). In addition to the quantitative ratings, the experts also provided qualitative feedback to refine the scale. One key recommendation was to revise several negatively worded items into positively worded statements (items 3, 5, 13, 14, and 17), as follows:

Table 2.
Item Revisions

Item No.	Subscale	Adapted Items	Revised Items
3	Depression	I feel that I am unable to experience happiness, even when I am with my friends.	I find it difficult to feel happiness, even when I am among my friends.
5	Depression	I feel that I lack motivation to start school assignments or other activities.	It feels difficult for me to find the motivation to start school assignments or other activities.
13	Depression	I feel very sad and do not want to do any activities.	I feel very sad to the point that I am reluctant to engage in any activities.
14	Depression	I feel that I lack motivation to participate in school activities, even those that I like.	I feel a loss of motivation to participate in school activities, even those that I usually enjoy.
17	Depression	I feel that I have no hope for my future, such as not being confident that I can attend college or work.	I feel a loss of hope for the future and find it difficult to imagine myself being able to attend college or work.

Revisions to the five items, based on expert review, were made to improve readability for students. This step was also intended to reduce the potential for misinterpretation and inconsistent response patterns resulting from the use of negatively worded (reverse-worded) items (De Vellis, 2022).

CFA Results

Confirmatory Factor Analysis (CFA) was conducted to examine the fit of the three-factor DASS-21 model, comprising the Depression, Anxiety, and Stress dimensions. This model assumes that the 21 items load onto three main latent constructs in accordance with the theoretical structure developed by Lovibond and Lovibond (1995). The specific CFA model tested comprised three latent constructs: items D1 to D7 loaded

on the Depression factor, items K1 to K7 on the Anxiety factor, and items S1 to S7 on the Stress factor.

Table 3.
Distribution of Instrument Items

Factor	Indicator
Stress	S1, S2, S3, S4, S5, S6, S7
Anxiety	K1, K2, K3, K4, K5, K6, K7
Depression	D1, D2, D3, D4, D5, D6, D7

The model was tested using JASP software version 0.19.3 with the Maximum Likelihood (ML) estimation method. The data were obtained from 150 respondents who completed the adapted version of the DASS-21 instrument, which had been adjusted to the context of high school adolescents.

Table 4.
Model Fit Indices

Fit indices	
Index	**Value**
Comparative Fit Index (CFI)	0.939
Tucker-Lewis Index (TLI)	0.930

The Comparative Fit Index (CFI) of 0.939 and the Tucker–Lewis Index (TLI) of 0.930 both exceed the commonly accepted cutoff of 0.90 (Hu et al., 1999), indicating a good fit. The results for the other fit indices are presented as follows.

Table 5.
Additional Model Fit Indices

Other fit measures	
Metric	**Value**
Root mean square error of approximation (RMSEA)	0.067
RMSEA 90% CI lower bound	0.054
RMSEA 90% CI upper bound	0.080
RMSEA p-value	0.019
Standardized root mean square residual (SRMR)	0.049
Goodness of fit index (GFI)	0.837
McDonald fit index (MFI)	0.663
Expected cross validation index (ECVI)	2.689

The other measurement results show that the model has a Root Mean Square Error of Approximation (RMSEA) of 0.067, with a 90% confidence interval from 0.054 to 0.080 and a p-value of 0.019. This RMSEA value indicates that the model has reached an acceptable level of fit (Hu & Bentler, 1999). Another fit index, the Standardized Root Mean Square Residual (SRMR = 0.049), also indicates a very good model fit. Meanwhile, the Goodness-of-Fit Index (GFI = 0.837) and the McDonald-Fit Index (MFI = 0.663) are still within the moderate range. The CFA analysis also showed that all items within each factor had statistically significant factor loadings ($p < 0.001$), ranging from 0.540 to 1.960.

Table 6.
Factor Loadings

Factor loadings							
						95% Confidence Interval	
Factor	Indicator	Estimate	Std. Error	z-value	p	Lower	Upper
Stress	S1	1.000	0.000			1.000	1.000
	S2	0.788	0.082	9.605	< .001	0.627	0.949
	S3	0.540	0.074	7.327	< .001	0.396	0.685
	S4	0.939	0.082	11.486	< .001	0.779	1.099
	S5	0.835	0.082	10.207	< .001	0.675	0.996
	S6	0.691	0.079	8.700	< .001	0.535	0.846
	S7	0.658	0.077	8.564	< .001	0.507	0.808
Anxiety	K1	1.000	0.000			1.000	1.000
	K2	0.910	0.207	4.398	< .001	0.504	1.315
	K3	1.634	0.276	5.921	< .001	1.093	2.175
	K4	1.605	0.274	5.865	< .001	1.069	2.141
	K5	1.554	0.272	5.707	< .001	1.020	2.087
	K6	1.694	0.288	5.884	< .001	1.129	2.258
	K7	1.960	0.330	5.949	< .001	1.315	2.606
Depression	D1	1.000	0.000			1.000	1.000
	D2	0.807	0.092	8.817	< .001	0.628	0.986
	D3	0.918	0.105	8.781	< .001	0.713	1.124
	D4	0.965	0.095	10.121	< .001	0.778	1.152
	D5	1.036	0.109	9.477	< .001	0.822	1.250
	D6	0.895	0.099	9.061	< .001	0.702	1.089
	D7	0.951	0.106	8.967	< .001	0.743	1.159

The values in the table indicate that the items in the scale make a strong contribution to their respective latent factors. The item with the highest factor loading was found on the anxiety indicator (K7 = 1.960), followed by K6 (1.694) and D5 (1.053), indicating that these items are very strong representations of their respective constructs. Meanwhile, the item with the lowest loading was S3 (0.540), although this value is still above the minimum threshold of 0.50, which is considered adequate in the context of psychological measurement (Hair et al., 2010). Thus, all items are considered construct-valid to be retained in the final measurement model. This finding reinforces that the three-factor structure of the adapted DASS-21 has strong empirical support in the adolescent context, with each indicator adequately representing the dimensions of stress, anxiety, and depression.

Descriptive Statistics of Stress, Anxiety, and Depression Score

In addition to examining the validity and reliability of the instrument, descriptive statistics were calculated to provide an overview of the distribution of stress, anxiety, and depression scores among respondents. These statistics offer preliminary information regarding the central tendency and distributional characteristics of each subscale

Table 7.
Descriptive Statistics of Subscale Scores

	Total_Stress	Total_Anxiety	Total_Depression
Mean	12.26	12.47	12.53
Std. Deviation	4.510	4.286	5.079
Skewness	1.175	0.981	1.069
Kurtosis	1.174	1.066	0.550

As shown in Table 7, the mean scores of the stress, anxiety, and depression subscales indicate moderate levels of symptoms among the study participants. The skewness and kurtosis values for all subscales fall within acceptable ranges, indicating that the score distributions do not deviate substantially from normality and are suitable for further analysis and interpretation.

To provide a clearer illustration of the factor structure, a confirmatory factor analysis (CFA) path diagram is presented.

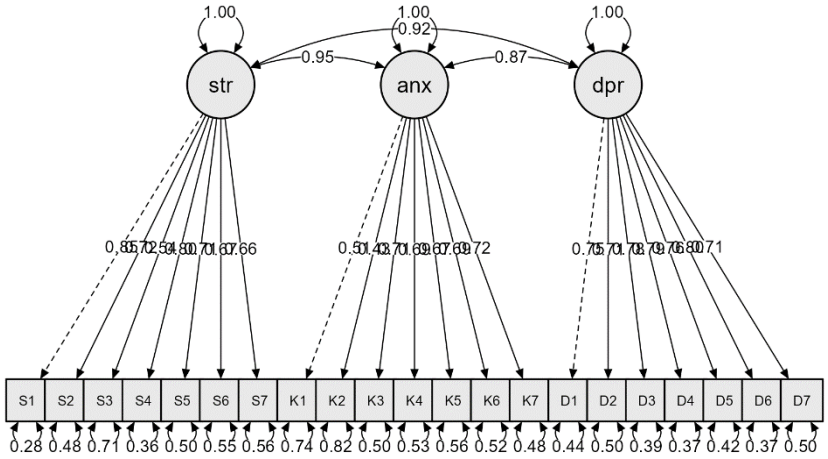

Figure 1. Confirmatory Factor Analysis (CFA) Model of the Adapted DASS-21

As shown in Figure 1, all items loaded adequately on their respective latent factors, and the correlations among stress, anxiety, and depression indicate related but distinct constructs. This visual representation supports the three-factor structure of the adapted DASS-21 for adolescent mental health assessment. To further describe the distribution of respondents' symptom levels, distribution plots of total scores for stress, anxiety, and depression were generated.

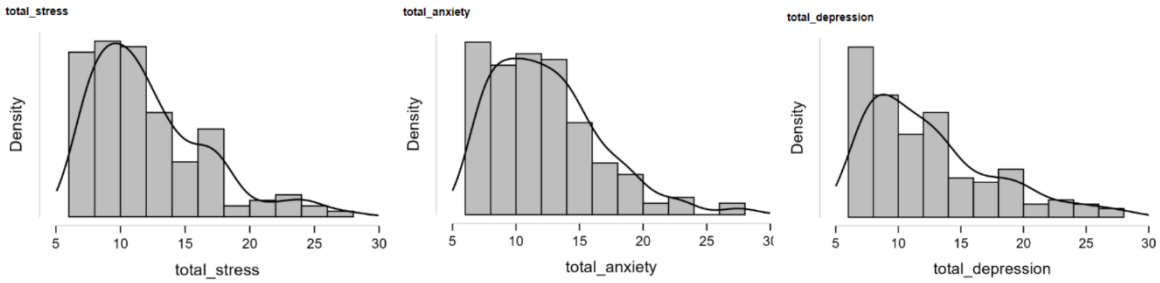

Figure 2. Distribution of Total Scores for Stress, Anxiety, and Depression

As illustrated in Figure 2, the score distributions show variability across all three dimensions, with most respondents scoring in the lower-to-moderate range. These distributions provide a descriptive basis for interpreting relative severity patterns within the study sample.

Reliability Test Results

Reliability testing was conducted by calculating Cronbach's alpha for each subscale of stress, anxiety, and depression. The analysis showed that all subscales had alpha values above 0.80, indicating very good internal consistency. The anxiety subscale had the highest alpha value of 0.903, followed by stress (0.880) and depression (0.820).

Table 8.
Reliability Test Results

Subscale	Cronbach's Alpha	Total items
Stress	0.880	7
Anxiety	0.903	7
Depression	0.820	7

Based on the criteria proposed by Nunnally & Bernstein (1994), alpha values of ≥ 0.70 are considered acceptable, whereas values above 0.80 indicate a high level of reliability in the measurement of psychological constructs Hair. et al. (2010). These findings reinforce the instrument's good internal consistency and suitability for measuring adolescents' mental health status.

Platform Feasibility Test Results

The following table presents the mean scores for the feasibility test of the MentalkuSehat.com platform, based on the ACTIONS model (Bates, 2015).

Table 9.
Results of the Mentalkusehat.com Platform Feasibility Test

Aspec (ACTIONS)	Expert 1	Expert 2	Rate Score
Access	4	4	4.0
Cost	4	4	4.0
Teaching Functions	4	3	3.5
Interaction	4	3	3.5
Organizational Issues	4	3	3.5
Novelty	4	4	4.0
Speed	4	4	4.0

Based on the results of the platform feasibility test, a total score of 52 was obtained out of a maximum score of 56. Using the percentage-based feasibility formula:
Percentage of Feasibility = (Total Score Obtained / Total Maximum Score) × 100% = (52 / 56) × 100% = 92.86%

These results indicate that the platform falls into the "Highly Feasible" category for implementation as a digital-based self-assessment medium for adolescent mental health. The aspects of accessibility, cost, innovation, and speed received perfect scores from both experts, while the aspects of teaching functions, interaction, and organizational issues obtained very good scores, although accompanied by several recommendations for

improvement from the experts, particularly related to enhancing feedback features, the WhatsApp service system, and integration with school systems.

Discussion

This study aimed to develop and test a digital adolescent mental health scale adapted from the DASS-21 for use in guidance and counseling services in senior high schools. Overall, the findings indicate that the scale has good content validity, construct validity, and reliability and is suitable for integration into a digital platform as a self-screening instrument. In terms of content validity, I-CVI and S-CVI/Ave values of 1.00 indicate complete agreement among experts that all items are relevant to the constructs being measured. These values exceed the minimum thresholds recommended by Lynn (1986), Polit & Beck (2006) and Yusoff (2019), who suggest that S-CVI/Ave ≥ 0.90 reflects very good content validity. These findings reinforce that the expert review process, involving psychologists and guidance and counseling lecturers, has successfully ensured adequate representation of the domains of depressive, anxiety, and stress symptoms among senior high school adolescents. The revision of several items from negatively worded to more positively worded statements is also consistent with DeVellis (2022) warning that reverse-worded items often reduce readability and trigger inconsistent response patterns, thereby potentially compromising data quality and factor structure.

With respect to construct validity, the confirmatory factor analysis confirmed the three-factor model adapted from the original DASS-21 structure, with CFI, TLI, IFI, and RNI values above 0.90 and RMSEA within the acceptable fit range. These findings are consistent with the original framework of Lovibond and Lovibond, which shows that depression, anxiety, and stress form three distinguishable yet intercorrelated syndromes within a single negative mental health construct. Empirical support for the three-factor model in a sample of Indonesian senior high school students is also in line with other studies on the development and adaptation of mental health instruments in Indonesia, which emphasize the importance of explicitly testing factor structures through CFA (Hartanto et al., 2024; Putri & Harahap, 2025), as well as the development of adolescent mental health instruments by Krisdiyanto et al. (2022), who reported good model fit and high reliability for stress, anxiety, and depression scales as the basis for designing a digital support system for adolescents.

The high internal consistency values (Cronbach's alpha > 0.80) across the three dimensions indicate good internal consistency, in accordance with DeVellis' (2022) criteria that recommend $\alpha \geq 0.70$ as the minimum threshold for psychological scales. This strengthens the conclusion that items within each subscale move together in measuring the same construct. When compared with previous studies on the development of adolescent mental health scales for senior high school students by Mukminin et al. (2024) and the adaptation of the Arabic Scale of Mental Health by Hartanto et al (2024), the reliability coefficients in the present study fall within a comparable, and in some cases higher, range. The results are also consistent with the findings of Ali et al. (2021), which showed that a short version of the DASS-21 (DASS-8) can maintain good factor structure while increasing measurement efficiency.

The descriptive statistics and score distribution patterns further indicate variability in stress, anxiety, and depression levels among respondents, which supports the use of this instrument for early screening and needs assessment in school settings. The observed

distribution patterns are consistent with the study's non-clinical adolescent context and reinforce the scale's relevance for preventive guidance and counseling services.

From a technological utilization perspective, integrating the adapted DASS-21 scale into the mentalkusehat.com platform aligns with current trends in the development of digital applications for mental health assessment and intervention. A web-based depression diagnosis application developed by Auliasin et al. (2019), for example, was shown to assist counselors in mapping the severity of depression among university students and documenting records in a structured manner, while the Therapist application, based on DASS-21 for UTHM students demonstrated very good usability (SUS = 86.25) and has the potential to enhance users' emotion management skills. Unlike those studies, which focused on university students and/or a single disorder (depression), the present study developed a three-dimensional scale (stress, anxiety, depression) specifically for Indonesian senior high school adolescents and integrated it into a self-screening platform, thus providing a more contextually appropriate basis for initial assessment within school guidance and counseling services.

In addition to functioning as a self-screening medium, the mentalkusehat.com platform was developed as an ecosystem of mental health support for adolescents. Students not only receive immediate feedback reports after completing the scale but also have access to online assistance from psychologists and school counselors, as well as articles and daily inspiration that serve as psychoeducation and mental health literacy resources. This pattern is consistent with findings from various digital mental health interventions for adolescents that combine screening functions, personalized feedback, access to professionals, and psychoeducational content. For instance, the Smooth Sailing service uses a school-based website to conduct screening, provide results, and link students to school counselors or online stepped-care interventions aimed at reducing depressive and anxiety symptoms among secondary school students Dea et al (2019). Systematic reviews also indicate that digital mental health interventions hold positive potential for reducing depressive and anxiety symptoms in adolescents, particularly when they integrate evidence-based content and/or elements of professional support that enhance user engagement.

From a literacy and psychoeducation standpoint, recent research shows that technology-based mental health education programs, whether delivered via web platforms or mobile applications, can improve mental health literacy, foster more positive attitudes toward help-seeking, and strengthen adaptive coping strategies among adolescents. Studies on online interventions that utilize brief articles and videos, for example, have been found to be effective in increasing students' mental health literacy (Krokos et al., 2024; Zhanfang Liu, Fangru Yuan, 2024). Thus, the integration of screening features, online consultation with psychologists/guidance counselors, and daily inspiration articles on mentalkusehat.com not only represents a technological innovation but is also consistent with empirical evidence on the role of digital interventions in strengthening mental health literacy and support for adolescents.

CONCLUSION

This study concludes that a digital adolescent mental health scale adapted from the DASS-21 has been successfully developed and validated for use in guidance and counseling services in senior high schools. The scale demonstrated excellent content validity (I-CVI and S-CVI/Ave = 1.00), a well-supported three-factor structure (stress, anxiety, and depression) based on confirmatory factor analysis, and high internal

consistency with Cronbach's alpha values above 0.80 across all subscales. The integration of the instrument into the mentalkusehat.com platform proved to be highly feasible and highlights the potential of digital technology to support adolescent mental health self-assessment and early detection in school settings. Practically, this instrument can be implemented as part of a tiered mental health assessment system to support needs assessment, preventive interventions, and school mental health policies in the digital era. Theoretically, the findings reinforce the applicability of the DASS-21 three-factor model within a non-clinical, school-based adolescent population and contribute to the development of digital mental health assessment research in Indonesia. Nevertheless, this study is limited by convenience sampling, data collection from a single school, and the absence of predictive or longitudinal validity testing. Future research is recommended to involve multi-school samples, examine measurement invariance across gender and grade levels, and further enhance interactive and personalized features of the digital platform.

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