

Translation and Validation of the Depression, Anxiety and Stress Scale in Telugu Language

Suneetha Kandi¹ , Mubashir Gull¹  and Nayeem Showkat² 

ABSTRACT

Background: The Depression, Anxiety and Stress Scale (DASS-21) is an extensively followed self-report measure for assessing negative emotional states. The current research aimed to translate the original English version of DASS-21 into Telugu and to evaluate its validity within a Telugu-speaking population in India.

Methods: The DASS-21 was rendered into Telugu using separate translations (forward and backwards) by multilingual specialists. A total of 533 Indian volunteers participated in the research and completed a set of questions.

Results: Confirmatory factor analysis (CFA) supported both one-factor and three-factor models. Exploratory Structural Equation Modeling (ESEM) demonstrated superior model fit and further indicated the existence of a dominant general distress factor underlying all the items. Besides that, bifactor analysis revealed a very good model fit, supporting the existence of a strong general distress factor alongside the specific depression, anxiety, and stress dimensions. The Telugu DASS-21 manifested excellent internal consistency.

It further exhibited a significant positive correlation with the Generalized Anxiety Disorder Scale (GAD-7), Patient Health Questionnaire (PHQ-9), and the negative effect dimension of the Scale of Positive and Negative Experience (SPANE-N).

Conclusions: The Telugu translated version of the DASS-21 demonstrated satisfactory psychometric properties, including structural validity, internal consistency, and convergent validity. The findings support the assessment of psychological distress among Telugu-speaking populations and suggest that the scale primarily reflects a broad general distress construct while retaining domain-specific symptom dimensions. Further studies can examine additional psychometric properties and validate the scale in diverse and clinical populations.

Keywords: DASS-21, distress, Telugu, translation, validation

Key Messages:

- **Question:** Is the Telugu version of the DASS-21 a valid and reliable measure of depression, anxiety, and stress?
- **Findings:** The Telugu DASS-21 showed excellent reliability, strong validity,

and was best explained by a dominant general distress factor with distinct symptom domains.

- **Meaning:** The Telugu DASS-21 is a suitable instrument for assessing psychological distress in Telugu-speaking populations.

Psychological distress has been on the rise, and the COVID-19 pandemic has heightened this problem almost worldwide. The common symptoms exhibited are depression, anxiety, and stress. Adu et al. reported that psychological distress has an impact on both physical and mental health.¹ This requires an urgent assessment and intervention for this condition in different geographical and cultural settings. The Depression, Anxiety, and Stress Scale (DASS-21) is a well-researched and widely used tool currently available. The scale captures three types of conditions and is short and useful. It is one of the widely translated, adapted, and validated scales across different populations. Adu et al. tested the DASS-21 in four different countries with participants from India,

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Ghana, Germany, and New Zealand.¹ This cross-cultural study showed that the scale is valid across different geographical regions. They also found that the Rasch model confirmed the scale's unidimensionality. They also reported that all three subscales, that is, depression, anxiety, and stress, showed high reliability and validity.

Research on DASS-21 has also been conducted in other regions. Aruta et al. conducted a study in the Philippines during the COVID-19 pandemic on the translation and validation among university students.² The confirmatory factor analysis (CFA) used in their study confirmed the three-factor model. Their translated version has shown strong convergent validity with other mental health tools such as the Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder (GAD-7). Thus, the DASS-21 Filipino version was reported to be a valid tool for screening for depression, anxiety, and stress in their population. In yet another study, Dreyer et al.³ validated the DASS-21 among the South African population. The participants were adult workers, and the results showed that the scale is a valid measure for use in the workplace. Findings from their research also confirm a three-factor structure of the scale.

Jun et al. studied the adult workers of Korea. Findings reveal a reliable cross-cultural adaptation of the Korean version.⁴ Their instrument has exhibited high internal consistency and stability over time. Construct validity was also verified, as it showed negative correlations with life satisfaction. However, the results of another study in Vietnam conducted by Tran et al. on women with young children differed, wherein the scale reported a more psychological distress construct rather than three different factors, when they used exploratory factor analysis (EFA), despite showing high internal consistency.⁵ The authors explain that cultural factors may have influenced these findings, as they conducted their study among the rural population. Hence, they cautioned that interpreting DASS-21 scores should be done carefully, taking into account the regional populations on whom it is being tested.

Research on DASS-21 has also been conducted with reference to special

populations. Park et al. observed people having autism spectrum disorder (ASD) without intellectual disability in their study.⁶ Findings of research reinforced the three-factor model. However, they recommended some modifications to improve the scale's fit for this special group. Another study on nurses undergoing midwifery training was reported by Teo et al. of Brunei.⁷ In this study, they used a shortened nine-item version, and their results showed that this short scale was in fact better than the longer DASS-21. Refinement is suggested, especially when used with some student groups. A similar study undertaken in Thailand by Wittayapun et al. on nursing students found that the 18-item version of DASS-21 is more efficient.⁸ They found that this shorter version has better factorial validity. Similarly, in Vietnam, another research problem regarding university students was examined. The result revealed inconsistencies in the assessment of anxiety, and the participants showed high levels of distress.⁹ This led the investigators to recommend a shorter version of the scale. However, it should be noted that both the last two studies were conducted during the initial phases of the pandemic among students newly adapting to online learning and online assessment. More recently, Vähäsarja et al. studied the performance of DASS-21 on the Finnish-speaking population.¹⁰ They found measurement invariance across both age and gender groups. The results confirmed that the scale is a reliable measure across different community settings.

Various studies across India report differing occurrence rates of depression, anxiety, and stress among adolescents and young adults in both rural and urban populations. Kandi found that 17.60% of professional college students in Andhra Pradesh sought counseling for depression.¹¹ Among medical students, a systematic review by Sarkar et al. indicated considerable variation, with depression prevalence ranging from 8.7% to 71.3% and a pooled prevalence of 39.2%; anxiety was observed at a pooled prevalence of 34.5%, and stress was particularly high at 51.3%.¹² Shrivastava et al. found that in a rural village of Central India, the prevalence of depression was 14.16%, anxiety disorders were notably

high at 68.33%, and stress disorders were reported at 24.16%.¹³ In a study conducted in Mysuru, South India, Prakash et al. highlighted regional differences, showing that depression was widespread in the countryside (39.3%) when compared to urban settings (24.2%), whereas anxiety was slightly higher in urban adolescents (50.6%) compared to their rural counterparts (49%).¹⁴ 13.4% of tribal students were found to be suffering from depression in a study conducted on the tribal students of Andhra Pradesh.¹⁵ Stress was more common among rural adolescents (16.6%) than among urban adolescents (14.6%).

These findings reflect significant mental health concerns across educational and geographic contexts in India. Despite the increase in prevalence rates of depression, anxiety, and stress in India, there remains a significant gap in the availability of standardized mental health assessment tools in regional languages. Further, in rural areas where the population has less awareness as well as fewer resources and mental health care services, psychological distress often goes unnoticed and untreated. There is an urgent need to develop and validate culturally and linguistically relevant tools so that these underserved populations can be better reached and served. The current research thus aims to translate and validate the DASS-21 into the regional language of Telugu to enable and promote widespread mental health screening. This leads to early identification and intervention for psychological distress in both urban and rural settings.

Methods

Translation Procedure of the DASS-21

Permission was obtained from the developers of the scale to translate it into Telugu. We invited four interpreters to translate the DASS-21 into Telugu using the forward-backwards translation method. We followed the Beaton et al. five-step process: (a) forward translation, (b) backward translation, (c) subject-matter expert review to ensure accuracy and cultural suitability, (d) a pilot survey to check clarity and understanding, and (e) a final expert review to make corrections based on the pilot results.¹⁶

Two bilingual English-Telugu translators autonomously rendered the scale under discussion into Telugu. The process was followed by the translation of the Telugu version back into English by two independent interpreters, without seeing the original English. Both the original English and back-translated English versions of the scales were then compared. The differences between the two versions were resolved through a thorough discussion.

With 5–8 years of professional experience, all the translators had a background in psychology and held PhD degrees in their relevant fields.

This version was pre-tested with native Telugu speakers using cognitive interviews to ensure clarity, cultural relevance, and comprehensibility. The pre-testing feedback was used to enhance and finalize the Telugu version of the DASS, and the entire process was documented in nuts-and-bolts for transparency and future validation.

Content Validity

To assess the content validity of the scale under review, six subject-matter experts were recruited to analyze the items. The specialists in disciplines such as languages, literature, and psychometrics were part of this study. All the experts were instructed to grade each item on the DASS scale, assessing its clarity in light of the conceptual framework, on a 4-point Likert scale. The Content Validity Index (CVI) was utilized to assess the items' validity.¹⁷ The I-CVI was found acceptable. Item-level CVI (I-CVI) and Scale-level CVI (S-CVI) were calculated.

All six experts rated each item as either clear or highly clear, resulting in I-CVI values of 1.00 for all items and an S-CVI/Ave value of 1.00 for the overall scale. These findings indicate strong agreement among experts regarding the linguistic clarity and conceptual consistency of the translated items. Needless to say, these uniformly high values reflect strong face validity and clarity of translation rather than evidence of content validity.

Validation of the Telugu Translation

Sample and Setting

An online survey was used to study Telugu-speaking adults in India between

November 2024 and February 2025. A total of 539 Telugu-speaking individuals participated in the study initially. After checking for incomplete surveys and excluding straight-lining responses (marking all items the same at either end of the response options), 6 responses were removed. Therefore, the final sample was 533.

This total sample ($N = 533$) was randomly divided into two independent subsamples in SPSS. The first subsample ($n = 273$) was used for EFA to identify the factor structure, while the second subsample ($n = 260$) was used for CFA to validate the factor structure.

Of the first subsample of participants, 39.5% were women and 64.1% were men. The average age and standard deviation were 37.32 and 12.78 years, respectively. In the second subsample, 40.00% were women and 60.00% were men. The average age and standard deviation were 37.17 years and 12.62, respectively.

Before the study began, participants provided consent. After providing an overview of the study, participants were informed that their participation was voluntary. Anonymity will be maintained regarding their responses and identity, and the data will be used for research purposes only.

Instruments

For data collection, a self-administered questionnaire containing five sections, such as DASS-Telugu, PHQ-9, GAD-7, SPANE, and Flourishing Scale, was instrumental.

Data Analysis

Data analysis was done using multiple software tools. Descriptive statistics, reliability analysis, correlation analysis, and EFA were performed using IBM SPSS (Version 26.0). CFA was conducted using IBM SPSS AMOS (Version 24.0). Exploratory structural equation modeling (ESEM) was performed in R (Version 4.3.0) using appropriate packages. Bifactor analysis was performed in JAMOV 2.6.26 version. An EFA was conducted to explore the scale's underlying factor structure. CFA was subsequently performed to evaluate the structural validity of the proposed factor models. ESEM was used to examine the factor structure further while allowing for potential

cross-loadings among items. Finally, bifactor analysis was conducted to determine the extent to which the scale reflects a dominant general distress factor alongside specific depression, anxiety, and stress dimensions. To establish the association between the variables, Spearman's correlation analysis was used. Cronbach's α and McDonald's omega (ω) were used to assess the reliability of the tools used in the study.

Model fit indices were examined using standard fit indices, including the Comparative Fit Index ($CFI > 0.90$),¹⁸ Tucker-Lewis Index ($TLI > 0.90$),¹⁹ Root Mean Square of Approximation ($RMSEA < 0.08$),²⁰ and Chi-square statistics ($\chi^2/df < 5.0$).²¹

Results

Scale Reliability

The internal consistency of DASS-21, PHQ-9, GAD-7, SPANE, and FS was assessed through Cronbach's alpha and McDonald's omega coefficients (see **Table 1**). Reliability estimates for the total and the dimensions demonstrate acceptable internal consistency. Our study reported high internal consistency, which should be interpreted with caution. Studies with very high reliability may reflect item redundancy and reduced measurement breadth rather than improved measurement quality.^{22,23} In line with this, Robert and colleagues²⁴ have argued that high internal consistency may indicate that items are overly similar and limit the scale's ability to capture the full complexity of the construct.

Assessing the Factor Structure of the DASS-21-Telugu

IBM Statistical Package for the Social Sciences (SPSS version 26), Analysis of Moment Structures (AMOS, 24), and JAMOV 2.6.26 were used to analyze the data. The skewness and kurtosis scores ranged from -0.01 to -0.89 and from 0.42 to -1.53 , indicating normality of the data (see **Table 2**). The inter-item correlation ranged from 0.62 to 0.88 , suggesting that the data were adequate for factor analysis. EFA was used to determine the scale's intrinsic factor structure.

TABLE 1.
Standardized Measures Used in the Study and Their Reliability Coefficients.

Measurement	Author and Year	Cronbach's α	McDonald's Omega (ω)
DASS-21 Depression	Lovibond and Lovibond ²⁵	0.98	0.98
Anxiety		0.96	0.96
Stress		0.96	0.96
		0.95	0.95
Patient health questionnaire (PHQ-g)	Kroenke ²⁶	0.96	0.96
General anxiety scale (GAD-7)	Spitzer ²⁷	0.96	0.96
Scale of positive and negative experience (SPANE)	Diener ²⁸	SPANE-P and SPANE-N were 0.85 and 0.94	0.83 and 0.93
Flourishing scale (FS)	Diener ²⁸	0.93	0.93

DASS: Depression, anxiety, and stress scale.

TABLE 2.
Descriptive Statistics of Depression, Anxiety, and Stress Scale (DASS-21) Telugu Subscales.

	N	Mean	SD	Skewness	Kurtosis
DASS-depression	533	10.03	7.83	0.25	-1.52
DASS- anxiety	533	9.59	8.11	0.33	-1.52
DASS-stress	533	10.65	7.52	0.26	-1.44
General distress	533	30.28	23.11	0.32	-1.49
GAD-7	533	10.22	7.64	0.13	-1.49
PHQ-g	533	13.02	9.94	0.18	-1.53
FS-8	533	39.57	10.78	-0.89	0.42
SPANE-P	533	20.30	4.96	-0.65	0.55
SPANE-N	533	19.13	7.73	-0.01	-1.28

GAD: Generalized anxiety disorder, PHQ: Patient health questionnaire, FS: Flourishing scale, SPANE-P: Scale of positive experience, SPANE-N: Scale of negative experience.

The data were acceptable for factor analysis, as demonstrated by Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity (0.984 and 15444.14, respectively, $p < .001$). The primary axis factoring (PAF) with a promax rotation was used, yielding a single-factor solution accounting for 77.49% of the total variation (Appendix). The number of factors retained during EFA was determined using the Kaiser criterion (eigenvalues > 1) and inspection of the scree plot. Further, the CFA was used to test the identified structure in an independent subsample, and ESEM was subsequently performed to examine model fit while allowing for potential cross-loadings among items. In addition, a bifactor model was tested to examine the presence of a general distress factor underlying the depression, anxiety, and stress dimensions.

Assessing the Structural Validity of the DASS-21-Telugu

The structural validity of the DASS-21-Telugu scale was evaluated using EFA, CFA, ESEM, and bifactor analysis. Therefore, we hypothesize that Lovibond's model.²⁵ The three-factor model would fit the data better than the one-factor model (see Table 3; Figure 1). All models were compared using fit indices such as CFI, TLI, RMSEA, and Chi-square statistics (see Tables 3 and 4). The fit indices of the two CFA models are not significantly different. To further examine the structural validity of the Telugu version, ESEM was performed. The ESEM results indicated a single dominant factor, with better fit indices and all items loading on a single factor (CFI = 0.99; TLI = 0.99; RMSEA = 0.04;

TABLE 3.
Item-level Standardized Coefficient in Two Models of the Depression, Anxiety, and Stress Scale (DASS-21) Telugu.

Items	One-factor Model	Three-factor Model
1.	.70***	.71***
2.	.71***	.71***
3.	.75***	.75***
4.	.79***	.8***
5.	.70***	.70***
6.	.74***	.75***
7.	.75***	.75***
8.	.71***	.72***
9.	.83***	.82***
10.	.78***	.78***
11.	.79***	.79***
12.	.83***	.83***
13.	.84***	.84***
14.	.74***	.75***
15.	.84***	.85***
16.	.77***	.77***
17.	.78***	.78***
18.	.63***	.64***
19.	.83***	.84***
20.	.88***	.88***
21.	.85***	.86***

*** $p < .001$.

SRMR = 0.01). These findings support a unidimensional structure of the Telugu DASS-21 (see Table 4; Figure 2). To further evaluate the dimensionality of the Telugu DASS-21, a bifactor model was examined alongside the traditional one-factor and three-factor models. The bifactor model demonstrated very good fit, supporting the existence of a dominant general distress factor that accounts for the shared variance among depression, anxiety, and stress symptoms (see Table 4; Figure 3). These findings are consistent with contemporary psychometric research indicating that DASS scores may primarily reflect a broad psychological distress construct while retaining domain-specific symptom dimensions.

Validity of the DASS-21-Telugu Version

Convergent and discriminant validities of the Telugu translation were assessed by evaluating the associations between the DASS subscales and general distress

FIGURE 1.

Schematic Representation of the Three-factor Model of the Depression, Anxiety, and Stress Scale (DASS-21) Telugu.

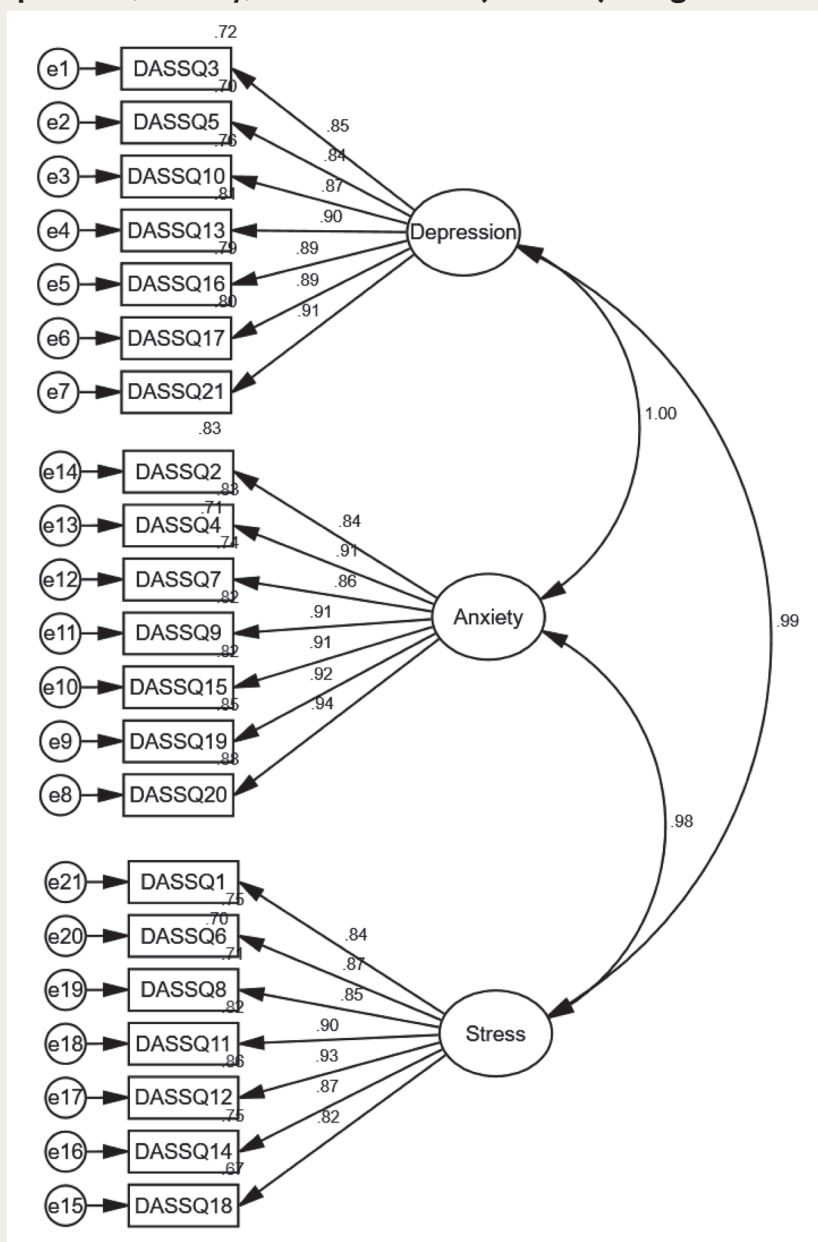


TABLE 4.

Summary of Model Fit Indices for the CFA, ESEM, and Bifactor Models of the Depression, Anxiety, and Stress Scale (DASS-21) Telugu.

Model	χ^2	df	p	χ^2/df	CFI	TLI	RFI	SRMR	RMSEA
1F (CFA)	960.19	189	<.001	5.08	0.95	0.94	0.93	0.03	0.08
3F (CFA)	942.81	186	<.001	5.08	0.95	0.94	0.93	0.03	0.08
1F (ESEM)	101.65	151	<.001	0.67	0.99	0.99	–	0.01	0.04
Bifactor Model	562	162	<.001	3.46	0.97	0.96	0.95	0.01	0.06

CFI: Comparative fit index, TLI: Tucker-Lewis index, RFI: Relative fit index, SRMR: Standardized root mean square residual, RMSEA: Root mean square of approximation.

(Overall score) and the FS, SPANE-P, SPANE-N, PHQ-9, and GAD-7.

As shown in **Table 5**, a strong positive correlation was observed between DASS-depression and GAD-7, PHQ-9, and SPANE-N. The Table further shows a weak negative correlation between DASS-depression and SPANE-P, and between DASS-depression and the Flourishing Scale. In the same way, DASS-anxiety shows a moderate positive association with GAD-7, PHQ-9, and SPANE-N, while it shows a moderate negative association with SPANE-P and the FS. DASS-stress, on the other hand, depicts a moderate positive correlation with GAD-7, PHQ-9, and SPANE-N. However, a moderate negative correlation between DASS-stress and SPANE-P and the FS was found. Additionally, a statistically significant positive association of general distress was found with GAD-7 (0.88), PHQ-9 (0.87), and SPANE-N (0.81). However, a statistically insignificant relationship was found between general distress and SPANE-P, suggesting that general distress is strongly tied to increased negative emotions. Still, it does not necessarily imply a decrease in positive emotions.

Measurement Invariance

To ensure that the DASS-21 works similarly across different subgroups, a multi-group CFA was conducted to test measurement invariance across gender (male vs. female), area of residence (rural vs. urban), age (young adults vs. older adults), and educational qualification (graduate vs. postgraduate).

We tested a sequence of nested models for configural, metric (factor loadings), and scalar (intercepts) invariance. Measurement invariance across gender, location, age, and qualification was assessed using changes in CFI (Δ CFI). For gender, age, and educational qualification, the CFI values remained constant across configural, metric, and scalar models (CFI = 0.90 for gender and age; CFI = 0.91 for educational qualification), indicating no change in model fit (Δ CFI = 0.00)—supporting full invariance. Similarly, for the area of location, the CFI values showed negligible change (from 0.90 to 0.91), with Δ CFI within the acceptable threshold of 0.01, indicating

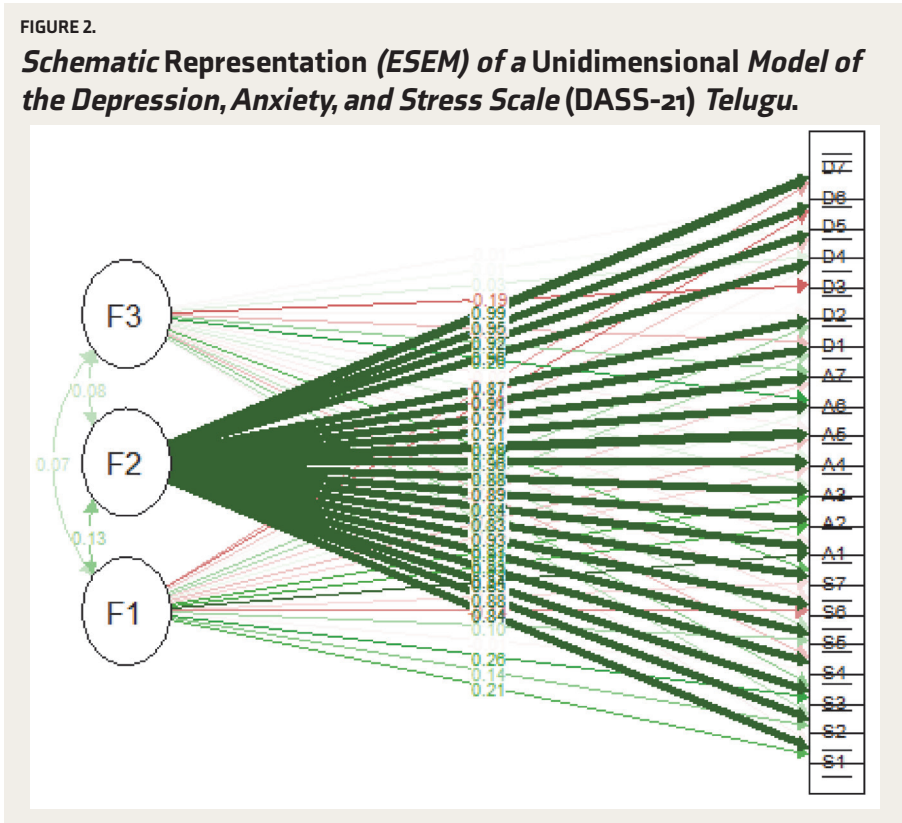


TABLE 5.
Correlation of Depression, Anxiety, and Stress Scale (DASS)-21 Telugu Subscales with Criterion Variables.

	GAD-7	PHQ-9	FS-8	SPANE-P	SPANE-N
DASS—Depression	.87**	.86**	-.15**	0.01	.79**
DASS—Anxiety	.87**	.86**	-.14**	0.04	.81**
DASS—Stress	.85**	.85**	-.12**	0.05	.81**
General distress	.88**	.87**	-.15**	0.03	.81**

GAD: Generalized anxiety disorder, PHQ: Patient health questionnaire, FS: Flourishing scale, SPANE-P: Scale of positive experience, SPANE-N: Scale of negative experience. ** $p < .01$.

invariance across groups. These results indicate that the scale functions equivalently across gender, age, location, and educational qualification.

Discussion

The current research aimed to assess the factor structure, reliability, and validity of the DASS-21 among Telugu-speaking adults in India. The findings provide initial evidence for the structural validity and internal consistency of the scale. The scale reported a broad general distress construct while retaining domain-specific symptom dimensions. The scale has a high internal consistency and satisfactory convergent validity. However, the results also indicate limited discriminant

validity, suggesting that the scale may be more sensitive. Overall, the findings provide evidence of acceptable reliability and validity of the translated tool as a measure of general distress.

The EFA supported a one-factor solution, explained 77.47% of the total variance, suggesting the presence of a strong general distress factor. Although the DASS-21 was theoretically developed as a three-factor model, CFA indicated that both the three-factor and one-factor models demonstrated acceptable model fit.²⁵ When comparing the two CFA models, the single-factor solution showed better fit indices than the three-factor solution (CFI = 0.95, TLI = 0.94, RMSEA = 0.08; see **Table 4**).

Further, the ESEM and bifactor models showed improved fit, indicating that the latent structure of the DASS-21 may be more complex than that captured by traditional CFA models. The superior fit of the bifactor model and ESEM model supports the presence of a strong general distress factor underlying all DASS-21 items, while also retaining specific depression, anxiety, and stress dimensions (see **Figure 3**). These findings suggest that the Telugu DASS-21 primarily measures general psychological distress, with additional domain-specific symptom variance.

These findings suggest that the observed structure may be better understood within a bifactor framework rather than as evidence of strict one-dimensionality. Future studies should further evaluate the robustness of these structural models using cross-validation and alternative estimation approaches.

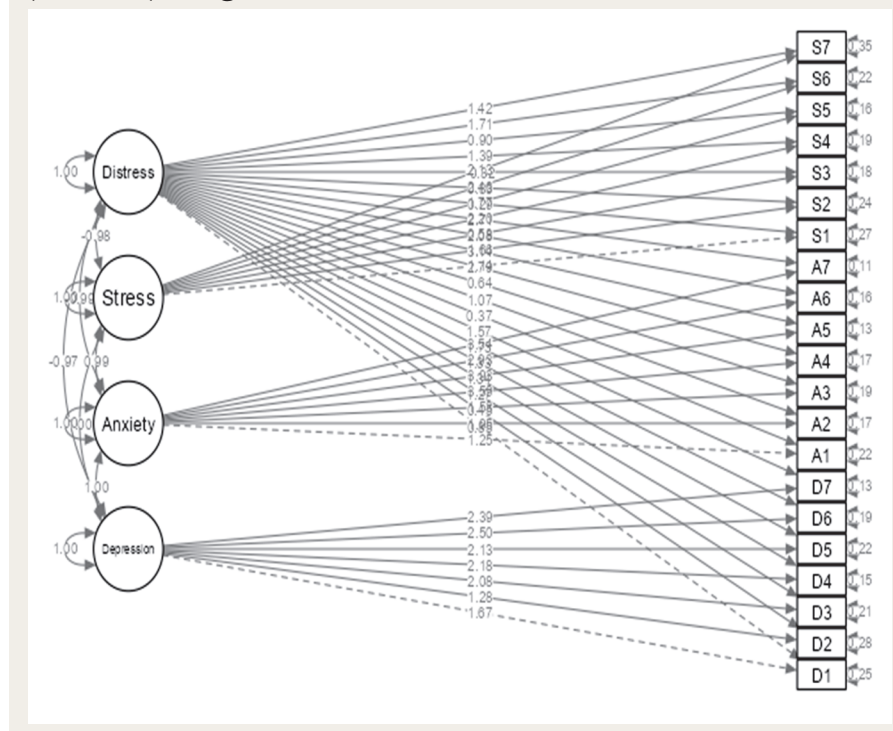
DASS-21 is commonly described as comprising three subscales; the findings of the current study suggest that, in the Telugu version, these dimensions overlap considerably. The overall DASS score—general distress—showed positive associations with established measures such as the PHQ-9 and GAD-7, supporting its ability to assess depressive and anxiety symptoms. This is consistent with earlier research, manifesting that depression, anxiety, and general distress are closely related because they share a common negative emotional base.³⁸

In addition, general distress was positively associated with negative affect (SPANE-N) and revealed weak correlations with measures of flourishing and positive affect. This should be interpreted cautiously. According to PANAS, positive and negative emotions are mostly independent, and a low association between distress and positive well-being is expected and not a problem.³⁹

The Telugu DASS-21 demonstrated high reliability coefficients and strong inter-item correlations, which should be interpreted with caution. While indicative of strong reliability, it may also reflect high item homogeneity. This could be due to several factors. The translation effects may have reduced subtle distinctions among items, leading to greater similarity in their meanings.^{33,34} The item overlap or redundancy may be present,

FIGURE 3.

Schematic Representation of the Bifactor Model Supporting a General Distress Factor and Specific Depression, Anxiety, and Stress Factors in the Depression, Anxiety, and Stress Scale (DASS-21) Telugu.



with multiple items capturing closely related aspects of the construct, often reflected in very high reliability coefficients.^{35,36} The response style bias, such as a tendency to respond consistently across items, may have contributed to inflated inter-item correlations.³⁷ Although such homogeneity enhances internal consistency, it may limit the breadth and conceptual diversity of the construct being measured. Future research should examine item-level redundancy and consider refining the scale.

Overall, the findings indicate that the Telugu version of the DASS-21 is better conceptualized as a broad general distress construct while retaining domain-specific symptom dimensions.

Despite these strengths, the study has certain limitations. The data were collected through an online voluntary approach, primarily from non-clinical participants. There are concerns about self-selection bias and limited participation among individuals with internet access, affecting representativeness and generalizability, particularly within clinical populations and the broader Telugu-speaking

community. Future studies should examine the scale in more diverse and clinically representative samples.

The content validity indices showed perfect agreement across items, which should be interpreted with caution, as such results may reflect ceiling effects and item clarity rather than definitive evidence of strong content validity. Future studies should include samples from clinical settings to establish the scale's applicability further.

As the current research focused on translation and initial validation of the Telugu DASS, some important psychometric properties, such as test-retest reliability, measurement error, responsiveness, parallel analysis, and criterion validity, were not examined. Therefore, the findings should be considered preliminary, and further research is required before the scale can be recommended for clinical decision-making or diagnostic screening purposes.

Conclusion

The DASS-21 Telugu version provides initial evidence for the structural validity and internal consistency of the scale.

It is characterized by a strong general factor representing psychological distress, while also retaining the three specific factors of depression, anxiety, and stress. This suggests that psychological distress is the dominant underlying construct measured by the scale, but the three subscales continue to capture meaningful domain-specific variance. Therefore, the Telugu DASS-21 may be used to obtain both an overall psychological distress score and separate scores for depression, anxiety, and stress, depending on the research or clinical purpose.

However, future research is required to establish comprehensive validation across diverse samples and additional psychometric properties. The findings of this study encourage other researchers to use the translated scale in their future research endeavors.

These findings have important implications for mental health screening in India, particularly among Telugu-speaking populations. As psychological distress continues to increase across diverse settings, there is a need for standardized tools that are culturally appropriate and easy to administer. The Telugu DASS-21 meets this need and can be used by mental health professionals and trained workers as a screening instrument for general distress.

Reporting Guidelines (Supplementary Online Material):

Name: The COSMIN checklist

Citation: Mokkink LB, Terwee CB, Patrick DL, et al. The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: An international Delphi study. *Qual Life Res* 2010; 19(4): 539–549. DOI: 10.1007/s11136-010-9606-8.

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Data Sharing Statements

Data are available upon reasonable request from the corresponding author.

Declaration of Conflicting Interests

The authors declared no conflicts of interest regarding the research, authorship, and/or publication of this article.

Declaration Regarding the Use of Generative AI

The authors used the AI tool (ChatGPT) only for language editing. The authors reviewed all content and take full responsibility for the final manuscript.

Ethical Approval

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Informed Consent

Informed consent was obtained from all participants before data collection. Participation was voluntary, and respondents were assured that their responses would remain confidential and would be used solely for research purposes.

Registration

Not applicable.

Supplemental Material

Supplemental material for this article is available online.

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