Assessing School-Related Depression in Adolescents: Psychometric Validation of a Brief Screening Scale and Its Complementarity with the DASS-D in Vietnam

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This study examined the psychometric properties of the School Depression Screening Scale (SDSS) and its relationship with the Depression subscale of the Depression Anxiety Stress Scales (DASS-D) among 2,511 Vietnamese secondary school students aged 11-18 years. Analyses included reliability, confirmatory factor analysis, measurement invariance, and comparisons with the DASS-D. The SDSS demonstrated satisfactory reliability, structural validity, and measurement invariance across gender, educational levels, and geographical regions. The SDSS was strongly correlated with the DASS-D, supporting convergent validity. However, a two-factor model fit the data better than a one-factor model, indicating that the two scales assess related but distinct aspects of depressive experiences. While the DASS-D primarily measures general depressive symptoms, the SDSS emphasizes depressive experiences within the school context, including loneliness, social disconnection, perceived lack of care from others, and negative self-evaluation. These findings support the SDSS as a brief, context-sensitive screening instrument that complements broader measures of depression in school settings. *T*-score conversion tables for both scales are also provided to facilitate standardized interpretation of depressive symptoms among Vietnamese secondary school students.

INTRODUCTION

Depression is a common mental health disorder characterized by persistent low mood, or a loss of interest or pleasure, accompanied by related cognitive, behavioral, and physiological symptoms that impair daily functioning (American Psychiatric Association, 2013). In adolescence, depression is frequently associated with academic difficulties, social isolation, and emotional distress, and it continues to be a leading cause of the global disease burden in this age group (World Health Organization, 2023).

Within the school context, the concept of school-related depression emphasizes the contextual nature of depressive symptoms among secondary school students, where emotional difficulties are closely tied to

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school climate, academic pressure, teacher- student and peer relationships, and the degree of school connectedness. School connectedness theory indicates that a positive school climate and stronger school connectedness where students feel accepted, supported, and valued within the educational environment lower the risk of experiencing depressive symptoms; conversely, feelings of isolation and disconnection increase psychological vulnerability (Aldridge & McChesney, 2018). Within Bronfenbrenner's ecological systems framework (Bronfenbrenner, 1981), the school environment operates as a critical microsystem that profoundly influences adolescent psychological well-being. Accordingly, the concept of school-related depression emerges not as a distinct clinical diagnosis, but as a contextualized manifestation of depressive symptoms namely, the way core cognitive and interpersonal vulnerabilities are evoked and experienced within the educational ecosystem. From the perspectives of developmental psychopathology and school connectedness theory (Goodenow, 1993), when these core vulnerabilities, such as self-loathing or a sense of isolation, become prominent, they directly reflect a breakdown in school-based social networks (including peers and teachers) and signal a diminished sense of connectedness and school belonging. These theoretical frameworks support the view that depressive symptoms can be meaningfully examined within the educational context, even when they substantially overlap with broader manifestations of depression.

Therefore, school-related depression is not conceptualized as a distinct diagnostic category, but rather as depressive symptoms experienced and manifested within the adolescent's educational context. From this perspective, depressive experiences such as loneliness, hopelessness, negative self-evaluation, and a sense of social disconnection can be shaped by students' interactions with the school environment. Consequently, the SDSS is designed as a context-focused screening tool to complement broader measures of depression, rather than to define a separate depressive disorder.

Empirical studies worldwide indicate that the prevalence of depressive symptoms among secondary school students is generally at an alarming level. Studies in Asia and Europe have identified associations between the school psychological climate, peer and teacher relationships, bullying, achievement pressure, and depressive symptoms, as well as impaired school functioning (Aldridge & McChesney, 2018; Tang et al., 2021). The consequences of school depression extend beyond the emotional domain to include declining academic achievement, an increased risk of dropping out, risky behaviors, and suicidal ideation (Thapar et al., 2012; World Health Organization, 2023).

In Vietnam, the scales most commonly used to assess depression among secondary school students include the Children's Depression Inventory (CDI) (Kovacs, 1992), the Center for Epidemiologic Studies Depression Scale for Children (CES-DC) (Weissman et al., 1980), the Patient Health Questionnaire for Adolescents (PHQ-A) (Johnson et al., 2002), and the Depression subscale of the Depression Anxiety Stress Scales (DASS-D; Lovibond & Lovibond, 1995). Among these instruments, the DASS-D is considered a brief self-report tool with acceptable reliability and validity for Vietnamese adolescents (Le et al., 2017). On the other hand, these instruments primarily evaluate general

depressive symptoms and have not focused on depressive experiences specifically manifested within the school context.

Given the rising prevalence of depressive symptoms among secondary school students in Vietnam, coupled with the continuous development of school counseling services, having additional brief, culturally appropriate screening tools tailored to the characteristics of the school context is highly essential to support the early identification of students experiencing depressive symptoms within the school environment. In this regard, the SDSS is envisioned as a context-focused screening tool that complements broader measures of depression by assessing depressive experiences from a school-related perspective, rather than defining a distinct depressive disorder. This instrument demonstrates adequate reliability and validity, while providing a practical approach for screening depressive symptoms among children within the Vietnamese educational context.

METHODS

Participants

The participants were lower and upper secondary school students aged 11-18 who were attending public and private schools in 3 major areas of Vietnam: Hanoi, Ho Chi Minh City, and Hue. A total of 2,511 students participated in the survey. Data were collected using a multistage cluster sampling method. First, several schools in the 3 study regions were selected, after which classes within each school were randomly chosen. Students in the selected classes were invited to participate in the survey on a voluntary basis. The survey was administered in the classroom under the supervision of the research team and the classroom teacher. Before participation, students were informed about the purpose of the study, their right to decline participation, and the confidentiality of their personal information. The questionnaires were completed anonymously in order to reduce response bias.

Table 1 Descriptive Statistics of Participants (N = 2,511)

Variable	Category	n	%
Gender	Male	1032	41.1
	Female	1479	58.9
Place of Residence	Hanoi	1438	57.3
	Ho Chi Minh City	546	21.7
	Hue	527	21.0
Educational level	Lower secondary	1250	49.8
	Higher secondary	1261	50.2

Research Design and Instruments

This study employed a cross sectional design to examine the psychometric properties of the School Depression Screening Scale (SDSS) and to compare it with the depression subscale (DASS-D) of the DASS-21. Data were collected through a self report questionnaire survey administered in the school setting. The research design focused on evaluating the psychometric and practical application properties of the scale, including internal consistency reliability, factor structure,

convergent validity, and measurement stability across practical dimensions of the study sample. In addition to the depression scales, the questionnaire also collected basic demographic information from participants, including gender, age, school level, and area of residence. These variables were used in comparative analyses and measurement invariance testing to evaluate the stability of the SDSS in comparison with the DASS-D across the study sample.

School Depression Screening Scale- SDSS

The SDSS consists of 5 items representing a depressive symptom configuration that emphasizes severe negative self evaluation (self loathing/self devaluation), linked to cognitive interpersonal depression and disrupted social connectedness (perceived rejection, loneliness), together with depressed mood and feelings of hopelessness. These content domains correspond to well-established cognitive and interpersonal vulnerabilities identified in research on adolescent depression, including negative self appraisal and loneliness factors consistently associated with depressive symptoms among youth (Sowislo & Orth, 2013; Loades et al., 2020). In terms of content correspondence with the diagnostic criteria of the DSM-5-TR, the SDSS clearly covers criterion A1 (depressed mood or feelings of hopelessness) and criterion A7 (feelings of worthlessness or excessive self devaluation), which represent two central components of the depressive symptom structure (American Psychiatric Association, 2022). Moreover, the 5 SDSS items were not derived solely from theoretical considerations but were also condensed from previous empirical findings on adolescent depression in Vietnam. In these studies, factors such as social isolation, lack of social connectedness, low self evaluation, and hopelessness were frequently identified as prominent correlates of depressive symptoms among secondary school students (Nguyen et al., 2013; Le et al., 2017). Therefore, the SDSS reflects a symptom structure that is contextually relevant to the social and school environments of Vietnamese secondary school students. An important advantage of the 5 item SDSS is its direct emphasis on the interpersonal dimension and negative self evaluation, 2 prominent manifestations of depression in adolescence that are often closely associated with impaired social functioning and adjustment difficulties in the school environment (Thapar et al., 2012). Accordingly, the SDSS may serve as a brief screening tool for detecting the risk of school-related depression associated with social relationships and self perception among Vietnamese adolescents, while also functioning as a complementary measure alongside broader depression scales and more comprehensive diagnostic assessments.

Depression subscale of the DASS-21- DASS-D

To examine the measurement validity of the SDSS, the study employed the depression subscale DASS-D of the Depression Anxiety Stress Scales-21. The DASS-21 is an instrument designed to assess common negative emotional states, including depression, anxiety, and stress (Lovibond & Lovibond, 1995). Its depression subscale consists of 7 items reflecting core aspects of depression, such as reduced interest, depressed mood, feelings of worthlessness, and perceptions that life is meaningless. In this study, the DASS-D was used to assess the overall level of depressive symptoms among students and to provide a basis for comparison with the SDSS. The measurement properties of the DASS-D in the study sample were also

examined through reliability analysis and confirmatory factor analysis (CFA) to ensure the appropriateness of the instrument in the research context.

Both the DASS-D and the SDSS employed a 4 point Likert response format (0 = never, 1 = occasionally, 2 = often, 3 = always). Total scores of both DASS-D and SDSS were calculated by summing item responses. For comparative analyses between instruments, raw scores were standardized into *T*-scores (M = 50, SD = 10) to ensure comparability across scales with different numbers of items.

Data Analysis

The data were analyzed using IBM SPSS Statistics 31.0 and IBM SPSS AMOS 31.0. Descriptive statistics (M, SD, Min, Max), corrected item-total correlations, inter-item correlations, and internal consistency reliability (Cronbach's α and McDonald's ω) were calculated to evaluate the reliability of the SDSS and DASS-D. Pearson correlations between the SDSS and DASS-D were conducted to assess convergent validity. Confirmatory factor analysis was used to test the factor structure of each scale. Additional models including a two-factor correlated model and a single-factor model combining all items were estimated to examine whether the 2 scales represent the same or distinct constructs, with model comparisons based on fit indices (particularly CFI and ΔCFI). Multi-group CFA was further conducted to test measurement invariance of the SDSS and DASS-D across demographic groups (configural, metric, and scalar). Differences between the SDSS and DASS-D were examined using paired-samples t-tests and effect size (Cohen's d), along with additional analyses across demographic variables such as gender, age, school level, and region.

RESULTS

The results of the statistical analyses are presented below to examine the psychometric properties of the SDSS and its relationship with the DASS-D.

Table 2 Corrected Item-Total Correlations and Internal Consistency Estimates for the DASS-D

Item	Content	Corrected item-total correlation	Cronbach's α if item deleted	McDonald's ω if item deleted
3	I couldn't seem to experience any positive feeling at all.	.613	.860	.863
5	I found it difficult to work up the initiative to do things.	.494	.875	.876
10	I felt that I had nothing to look forward to.	.686	.851	.853
13	I felt down-hearted and blue.	.741	.843	.845

16	I felt that I wasn't worth much as a person.	.620	.860	.864
17	I felt that I had lost interest in just about everything.	.724	.846	.848
21	I felt that life was meaningless.	.685	.851	.853

Table 3 Corrected Item-Total Correlations and Internal Consistency Estimates for the SDSS

Item	Content	Corrected item-total correlation	Cronbach's α if item deleted	McDonald's ω if item deleted
1	I hate myself.	.619	.781	.789
2	It seems that no one really cares about me.	.532	.805	.806
3	I feel lonely and alone.	.631	.778	.785
4	I feel discouraged and hopeless.	.676	.763	.766
5	I feel that my life is unhappy.	.601	.786	.791

The results presented in Tables 2 and 3 indicate that the corrected item-total correlations for the DASS-D ranged from .494 to .741, suggesting that all items showed moderate to strong associations with the total scale score. The values of Cronbach's α if item deleted ranged from .843 to .875 and McDonald's ω from .845 to .876, indicating that removing any item would not substantially improve the reliability of the scale. For the SDSS, corrected item-total correlations ranged from .532 to .676, indicating appropriate and relatively consistent relationships between each item and the total score. Similar to the DASS-D, Cronbach's α if item deleted ranged from .763 to .805 and McDonald's ω from .766 to .806, suggesting that deleting any item would not meaningfully improve the reliability of the scale. These results indicate that the items of both scales demonstrate satisfactory item-total relationships and contribute consistently to their respective constructs. Although the SDSS contains fewer items, its item-level reliability indicators are comparable to those of the DASS-D, suggesting that the SDSS maintains a coherent internal structure while capturing core depressive symptoms.

Table 4 Internal Consistency Reliability and Correlation Between the DASS-D and SDSS

No.	Scales	Cronbach's α	McDonald's ω	Correlation	
				1	2
1	DASS-D	.873	.875		.720***

2	SDSS	.819	.823	.720***

*Note. *** = p<.001*

Table 5 Paired-Samples Comparison of Standardized *T*-Scores Between the SDSS and DASS-D

Comparison	Mean Diff.	95% CI	t (df)	p	d	r
DASS-D & SDSS	0.007	-[0.287, 0.300]	0.044 (2506)	.965	0.001	.720 ***

*Note. ***p < .001; Mean Diff. = Mean Difference; CI = Confidence Interval; d = Cohen's d.*

The results in Table 4 indicate that both scales demonstrate good internal consistency reliability. The DASS-D shows Cronbach's α = .873 and McDonald's ω = .875, while the SDSS shows α = .819 and ω = .823. These values exceed the acceptable threshold of .80, indicating a high level of internal consistency among the items within each scale. In addition, the Pearson correlation between the two scales is strong (r = .720, p < .001), suggesting that the DASS-D and SDSS measure related aspects within the same conceptual domain of depression while still capturing distinct characteristics. The paired comparison of standardized *T*-scores presented in Table 5 shows no statistically significant difference between the DASS-D and SDSS (ΔM = 0.007, p = .965, Cohen's d = 0.001). This indicates that, after standardization, the two scales yield equivalent assessment results, with neither scale systematically producing higher or lower depression scores. These findings support the use of the SDSS as a school-based depression screening instrument with measurement performance comparable to that of the DASS-D.

Table 6 Confirmatory Factor Analysis of the DASS-D and SDSS

Model	Scales	χ^2(df)	χ^2/df	CFI	TLI	RMSEA (90% CI)
1	DASS-D	245.513 (14)	17.537	.969	.939	.081 (.072 - .090)
2	SDSS	69.919 (5)	13.984	.984	.951	.072 (.058 - .087)
3	DASS-D & SDSS	720.529 (53)	13.595	.952	.929	.071 (.066 - .075)
4	Depression	1181.093 (54)	21.872	.919	.882	.091 (.087 - .096)

Note. χ^2 = Chi-square statistic; df = degrees of freedom; χ^2/df = relative chi-square; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI = 90% confidence interval of RMSEA.

The CFA results in Table 6 indicate that both scales, when analyzed separately, demonstrate good factorial fit with the data. The SDSS shows the highest fit indices (CFI = .984, TLI = .951, RMSEA = .072), followed by the DASS-D (CFI = .969, TLI = .939, RMSEA = .081). The two-factor combined model of DASS-D and SDSS (Model 3) still maintains an acceptable level of model fit (CFI = .952, TLI = .929, RMSEA = .071),

confirming that the two scales measure related but distinct constructs. In contrast, the single-factor model combining all 12 items into one factor (Model 4) shows the poorest fit indices (CFI = .919, TLI = .882, RMSEA = .091), with TLI falling below the .900 threshold and RMSEA exceeding the .080 threshold. This suggests that treating DASS-D and SDSS as a single unified construct is not appropriate. In summary, the findings support a two-factor structure, confirming that DASS-D and SDSS measure two different aspects of depression: general depression and school-related depression. Both scales can therefore be used concurrently in the assessment of school-related depression.

Table 7 Inter-Item Correlation Matrix for the DASS-D

Item	3	5	10	13	16	17	21
3	-						
5	.383**	-					
10	.474**	.387**	-				
13	.562**	.418**	.594**	-			
16	.415**	.459**	.476**	.517**	-		
17	.481**	.373**	.599**	.631**	.519**	-	
21	.503**	.309**	.576**	.597**	.465**	.646**	-

*Note. **p < .001*

Table 8 Inter-Item Correlation Matrix for the SDSS

Item	1	2	3	4	5
1	-				
2	.433**	-			
3	.460**	.457**	-		
4	.532**	.416**	.578**	-	
5	.500**	.382**	.458**	.530**	-

*Note. **p < .001*

The analysis of the inter-item correlation matrices in Tables 7 and 8 indicates a reasonable level of content-related association among depressive symptoms in both scales. For the DASS-D, inter-item correlations ranged from .309 to .646 ($p < .001$), suggesting that the component items tend to converge closely with one another. For the SDSS, inter-item correlations ranged from .382 to .578 ($p < .001$), with a relatively even distribution across items. These results indicate that both scales demonstrate good internal structural coherence, with comparable patterns of item interrelationships.

Table 9 Measurement Invariance of the DASS-D Across Demographic Groups

Group	Model	χ^2(df)	χ^2/df	CFI	TLI	RMSEA (90% CI)	ΔCFI
Gender	Configural	256.957 (28)	9.18	.969	.938	.057 (.051 - .064)	-
	Metric	266.114 (34)	7.82	.969	.949	.052 (.046 - .058)	.000

	Scalar	350.730 (41)	8.55	.958	.943	.055 (.050 - .060)	.011
Education level	Configural	266.424 (28)	9.52	.968	.937	.058 (.052 - .065)	-
	Metric	277.434 (34)	8.16	.968	.947	.053 (.048 - .059)	.000
	Scalar	339.030 (41)	8.27	.960	.946	.054 (.049 - .059)	.008
Region	Configural	276.334 (42)	6.58	.969	.938	.047 (.042 - .053)	-
	Metric	295.321 (54)	5.47	.968	.950	.042 (.038 - .047)	.001
	Scalar	337.320 (68)	4.96	.964	.956	.040 (.036 - .044)	.004

Note. χ^2 *= Chi-square statistic; df = degrees of freedom;* χ^2/df *= relative chi-square; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI = 90% confidence interval of RMSEA;* Δ*CFI = change in Comparative Fit Index between nested models.*

Table 10 Measurement Invariance of the SDSS Across Demographic Groups

Group	**Model**	**χ^2(df)**	**χ^2/df**	**CFI**	**TLI**	**RMSEA (90% CI)**	**ΔCFI**
Gender	Configural	79.657 (10)	7.97	.982	.947	.053 (042 - .064)	-
	Metric	88.543 (14)	6.32	.981	.959	.046 (.037 - .055)	.001
	Scalar	168.333 (19)	8.86	.962	.940	.056 (.048 - .064)	.019
Education level	Configural	76.904 (10)	7.69	.983	.950	.052 (.041 - .063)	-
	Metric	81.170 (14)	5.80	.983	.964	.044 (.035 - .053)	.000
	Scalar	122.268 (19)	6.43	.974	.959	.047 (.039 - .055)	.009
Region	Configural	73.506 (15)	4.90	.985	.956	.039 (.031 - .049)	-
	Metric	88.867 (23)	3.86	.983	.967	.034 (.027 - .041)	.002

Scalar	113.135 (33)	3.43	.980	.972	.031 (.025 - .037)	.003

Note. χ^2 *= Chi-square statistic; df = degrees of freedom;* χ^2/df *= relative chi-square; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI = 90% confidence interval of RMSEA;* Δ*CFI = change in Comparative Fit Index between nested models.*

Table 11 Measurement Invariance of the 2 factors model DASS-D&SDSS Across Demographic Groups

Group	**Model**	**χ^2(df)**	**χ^2/df**	**CFI**	**TLI**	**RMSEA (90% CI)**	**ΔCFI**
Gender	Configural	791.017 (106)	7.462	.950	.926	.051 (.047 - .054)	-
	Metric	805.791 (116)	6.946	.950	.932	.049 (.046 - .052)	.000
	Scalar	935.502 (128)	7.309	.941	.928	.050 (.047 - .053)	.009
Education level	Configural	804.797 (106)	7.592	.950	.926	.051 (.048 - .055)	-
	Metric	821.698 (116)	7.084	.949	.931	.049 (.046 - .052)	.001
	Scalar	921.382 (128)	7.198	.943	.930	.050 (.047 - .053)	.006
Region	Configural	859.878 (159)	5.408	.950	.926	.042 (.039 - .045)	-
	Metric	890.725 (179)	4.976	.949	.933	.040 (.037 - .042)	.001
	Scalar	954.573 (203)	4.702	.946	.938	.038 (.036 - .041)	.003

Note. χ^2 *= Chi-square statistic; df = degrees of freedom;* χ^2/df *= relative chi-square; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI = 90% confidence interval of RMSEA;* Δ*CFI = change in Comparative Fit Index between nested models.*

The results of measurement invariance testing for the DASS-D, the SDSS, and the combined DASS-D & SDSS model across three demographic groups gender, education level, and region are presented in Tables 9, 10 and 11.

The results indicated that all three models achieved configural invariance with good fit indices (CFI ≥ .950, RMSEA < .060), confirming that the underlying factor structure was equivalent across groups. At the metric invariance level, ΔCFI values were all very small (≤ .002), indicating that factor loadings did not differ significantly across groups

meaning that items were interpreted in the same way regardless of gender, education level, or region.

At the scalar invariance level, most comparisons met the acceptable threshold of ΔCFI < .010, with two exceptions: the DASS-D across gender (ΔCFI = .011) and the SDSS across gender (ΔCFI = .019). However, these values only slightly exceeded the commonly used .010 cutoff proposed by Chen (2007), while the overall fit indices remained at acceptable levels (CFI ≥ .941, RMSEA ≤ .056). Notably, when both scales were combined (Table 11), the ΔCFI for gender decreased to .009, falling within the acceptable threshold.

Across demographic groups, measurement invariance was most stable for region (ΔCFI ≤ .004 across all tables), followed by education level (ΔCFI ≤ .009), and was most variable for gender. Overall, the results provided sufficient evidence for configural and metric invariance, along with largely supportive evidence for scalar invariance, allowing for meaningful comparisons of mean scores across demographic groups.

Table 12 Descriptive Statistics of DASS-D and SDSS by Standardized *T*-Scores

Variable	Category	DASS-D				SDSS			
		Min	Max	M	SD	Min	Max	M	SD
Gender	Male	37	80	48.47	9.68	39	85	48.59	9.79
	Female	37	80	51.07	10.08	39	85	50.99	10.03
		(F = 41.894; p<.001)				(F=35.425; p< .001)			
Age	Age 11	37	80	46.40	8.57	39	85	47.03	9.11
	Age 12	37	80	49.23	10.32	39	85	50.19	10.13
	Age 13	37	80	50.68	10.49	39	85	50.37	10.87
	Age 14	37	80	50.40	10.28	39	85	50.79	9.83
	Age 15	37	80	49.80	10.46	39	85	49.67	9.93
	Age 16	37	80	51.50	9.17	39	85	51.01	9.62
	Age 17	37	80	51.44	10.12	39	85	50.97	10.13
	Age 18	37	80	50.95	9.37	39	85	50.24	9.73
		(F = 9.583; p<.001)				(F=5.799; p<.001)			
Place of Residence	Hanoi	37	80	50.08	10.15	39	85	49.98	10.06
	Ho Chi Minh City	37	80	50.48	9.74	39	85	50.68	10.03
	Hue	37	80	49.29	9.84	39	85	49.34	9.77
		(F = 1.994; p = .136)				(F=2.389; p = .092)			
Health status	Healthy	37	80	45.76	8.22	39	85	46.44	8.15
	Generally healthy	37	80	51.02	9.99	39	85	50.71	9.95
	Occasionally ill	37	80	53.41	10.39	39	85	53.23	11.09
	Frequently receiving medical treatment	37	80	54.37	10.85	39	85	55.42	12.80
		(F = 50.319; p < .001)				(F = 36.953; p <.001)			
Personality characteristics	Easily irritated	37	80	53.66	10.60	39	85	53.50	10.87
	Reserved	37	80	51.62	9.79	39	85	52.65	10.69
	Friendly	37	80	47.95	8.97	39	85	48.09	9.04
	Energetic	37	80	48.14	9.36	39	85	48.17	8.78

Indifferent	37	80	56.04	11.18	39	85	54.11	10.60
	(F = 43.301; p<.001)				(F = 35.157; p<.001)			

Note. M=mean; SD=Standard deviation

Table 12 presents the descriptive statistics of the DASS-D and SDSS scores across demographic groups and personal characteristics.

From a psychological and psychometric perspective, the descriptive results based on *T*-scores (*T-scores allows for standardized comparisons between two scales with different numbers of items*) indicate that the DASS-D and SDSS exhibit highly similar patterns of depressive symptom distribution across demographic and personal characteristics, thereby providing important evidence regarding the measurement value of the SDSS when compared with the well-established DASS-D depression scale. Across most variables, the 2 instruments reveal comparable group differences with similar directions and magnitudes of variation. This parallel pattern constitutes a clear indication of convergent validity, suggesting that the SDSS assesses the same underlying construct of depression as the DASS-D while emphasizing aspects more closely related to the school context (Campbell & Fiske, 1959; DeVellis & Thorpe, 2021).

First, both scales consistently show that female students report higher levels of depressive symptoms than male students, and these differences are statistically significant. This pattern aligns with a large body of epidemiological research indicating that depression becomes more prevalent among females during adolescence (Salk et al., 2017). Similarly, with regard to age, depressive symptoms appear lower among younger students and increase during early adolescence, remaining relatively elevated in later adolescent groups. Such a trajectory reflects developmental processes associated with puberty, including biological, cognitive, and social transitions that may heighten vulnerability to emotional difficulties (Thapar et al., 2012). The fact that the SDSS reproduces the same developmental trend as the DASS-D suggests that the scale is sensitive to developmental variations in depressive symptoms, which is a critical property for psychological assessment tools targeting adolescents.

Regarding place of residence, neither scale reveals statistically significant differences across the 3 major cities: Hanoi, Hue and Ho Chi Minh City. This finding suggests that levels of depressive symptoms among urban adolescents in Vietnam may be relatively comparable across large metropolitan contexts. From a psychometric standpoint, the consistency of results across regions supports the stability of the measurement structure of the SDSS across geographical contexts, complementing previous evidence from measurement invariance analyses.

In contrast, physical health status demonstrates a clear and systematic association with depressive symptoms on both scales. Students reporting poorer health or frequent medical treatment exhibit substantially higher depression scores. This gradient pattern is consistent with extensive research documenting the bidirectional relationship between physical and mental health in adolescence (Thapar et al., 2012). From a measurement perspective, the sensitivity of the SDSS to variations in health status comparable to that observed with the DASS-D provides additional evidence for its criterion-related validity.

Finally, self-reported personality characteristics also show strong discriminative capacity across both instruments. Students describing themselves as easily irritated, socially withdrawn, or indifferent tend to report higher depressive scores than those identifying as friendly or energetic. Notably, the "indifferent" group exhibits the highest scores on both scales, which is consistent with clinical descriptions emphasizing anhedonia and emotional withdrawal as central features of depressive disorders (American Psychiatric Association, 2013).

Overall, the findings indicate that the SDSS reproduces nearly all group-based patterns identified by the DASS-D, including differences associated with gender, developmental stage, health status, and personal characteristics. This consistency provides strong evidence for the construct and convergent validity of the SDSS, demonstrating that the scale captures core aspects of depressive symptomatology while remaining sensitive to contextual factors relevant to students' experiences. Consequently, the SDSS can be considered a reliable and practically valuable instrument for screening school-related depression, particularly when used alongside established measures such as the DASS-D.

DISCUSSION

The present findings suggest that the SDSS is not only a reliable and valid instrument for assessing depressive symptoms among students but also provides important added value by approaching depression from a school-context perspective. Although the SDSS demonstrates substantial convergence with traditional depression measures, it should not be viewed merely as a shortened version of existing instruments. Rather, the SDSS focuses on assessing how depressive experiences are manifested within students' everyday school lives, where relationships with peers and teachers, as well as feelings of school belonging, play a critical role in adolescent psychological well-being.

This approach is consistent with school connectedness theory and ecological models of development, which emphasize that students' psychological difficulties cannot be fully understood apart from the social contexts in which they occur (Bronfenbrenner, 1979; Goodenow, 1993). From this perspective, experiences such as loneliness, perceived lack of care from others, negative self-evaluation, and social disconnection reflect not only individual emotional distress but also the quality of students' interactions with their school environment. This interpretation is further supported by contemporary research indicating that adolescent depression is closely intertwined with social experiences and perceptions of interpersonal connectedness rather than representing solely an internal emotional state (Hankin et al., 2015; Loades et al., 2020).

Importantly, emphasizing the school context does not diminish the conceptual core of depression. On the contrary, the SDSS retains key features of depressive symptomatology, including hopelessness, negative self-evaluation, loneliness, and emotional withdrawal, all of which are widely recognized as central characteristics of adolescent depression (American Psychiatric Association, 2013; Thapar et al., 2012). These findings suggest that the SDSS is not designed to assess a distinct form of depression but rather to evaluate depressive symptoms through a school-

related lens. In other words, the distinctiveness of the SDSS lies in its contextual specificity rather than in a different underlying construct.

Furthermore, the relative stability of the scale across gender, educational levels, and geographical regions supports its potential applicability in both school-based epidemiological research and practical screening activities. Such stability is particularly valuable given the growing interest among researchers and school mental health professionals in comparing mental health risks across different student populations (Chen, 2007; Putnick & Bornstein, 2016).

From a practical standpoint, the SDSS offers several advantages for school-based screening initiatives due to its brevity, ease of administration, and relevance to educational settings. Whereas instruments such as the DASS-D provide information about the core symptoms of depression at a more general level, the SDSS contributes additional insight into students' school-related experiences and interpersonal difficulties. Consequently, the use of the SDSS may enhance the sensitivity of early identification efforts for students at risk of psychological difficulties while providing valuable information for counseling, psychological support, and school-based depression prevention programs, which are widely recognized as important strategies for promoting adolescent mental health (Sekhar et al., 2021).

Limitations and Future Direction

This study has several limitations. First, the cross-sectional design limits causal inferences regarding the relationships between school-related experiences and depressive symptoms. Second, all data were collected through self-report measures and may therefore be subject to response biases. Third, although evidence was obtained for internal consistency, structural validity, measurement invariance, and convergent validity, test-retest reliability, predictive validity, clinical validity, and screening accuracy were not examined. In addition, the findings were based on a sample of Vietnamese students and should be generalized to clinical populations or other cultural contexts with caution. Future studies should employ longitudinal designs, multi-informant data, and clinical diagnostic criteria to further evaluate the stability, predictive utility, sensitivity, specificity, and practical applicability of the SDSS in school-based mental health screening.

Research-based Recommendations

Based on the findings of this study, *T*-scores may provide a useful standardized metric for comparing and interpreting scores obtained from the DASS-D and SDSS in the assessment of depressive symptoms among Vietnamese lower and upper secondary school students (see Appendix). The *T*-score metric follows a commonly used standardization framework in psychological assessment, with a mean of 50 and a standard deviation of 10: $T < 40$ (very low), 40-44 (low), 45-54 (average), 55-59 (slightly elevated), 60-69 (high), and ≥ 70 (very high). This approach has been widely used in behavioral and emotional assessment systems for children and adolescents (Achenbach & Rescorla, 2001; Groth-Marnat & Wright, 2016).

Given the substantial association between the DASS-D and SDSS and the support for a two-factor structure, the standardized *T*-scores derived from the two measures may be used jointly for descriptive screening purposes. Such an approach may provide a broader representation of depressive symptomatology by integrating both general depressive symptoms and school-contextualized depressive experiences. However, the proposed composite score should be regarded as preliminary and exploratory because its predictive validity, diagnostic accuracy, and optimal screening cut-off values have not yet been established. Further research is needed before the combined score can be recommended for clinical decision-making or formal diagnostic screening.

CONCLUSION

The present study provides evidence supporting the reliability and validity of the School Depression Screening Scale (SDSS) for assessing depressive symptoms among Vietnamese secondary school students. The findings indicate that the SDSS demonstrates satisfactory internal consistency, structural validity, and measurement invariance across major demographic groups, supporting its use in school-based assessment and research. The results further suggest that the SDSS and the DASS-D assess related yet distinguishable aspects of adolescent depression. While both instruments reflect a common depressive syndrome, the SDSS places greater emphasis on depressive experiences embedded within the school context, including loneliness, social disconnection, perceived lack of care from others, and negative self-evaluation. These findings support the view that the SDSS is not a measure of a distinct depressive disorder but rather a context-sensitive screening instrument that complements broader measures of depression. Given its brevity, psychometric adequacy, and contextual relevance, the SDSS represents a promising tool for school-based mental health screening. When used alongside broader measures such as the DASS-D, it may contribute to a more comprehensive understanding of students' emotional difficulties and support early identification efforts in educational settings. Nevertheless, further longitudinal and clinical research is needed to establish its predictive validity, diagnostic accuracy, and practical utility.

DECLARATIONS

Funding Statement

This research received no external funding.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest related to this study.

Consent to Participate

Informed consent was obtained from all participants and their legal guardians prior to participation.

Consent for Publication

Participants and their legal guardians provided consent for the publication of anonymized data.

Availability of Data and Materials

The data that support the findings of this study are not publicly available due to privacy and ethical restrictions but are available from the corresponding author upon reasonable request.

Code Availability

Not applicable.

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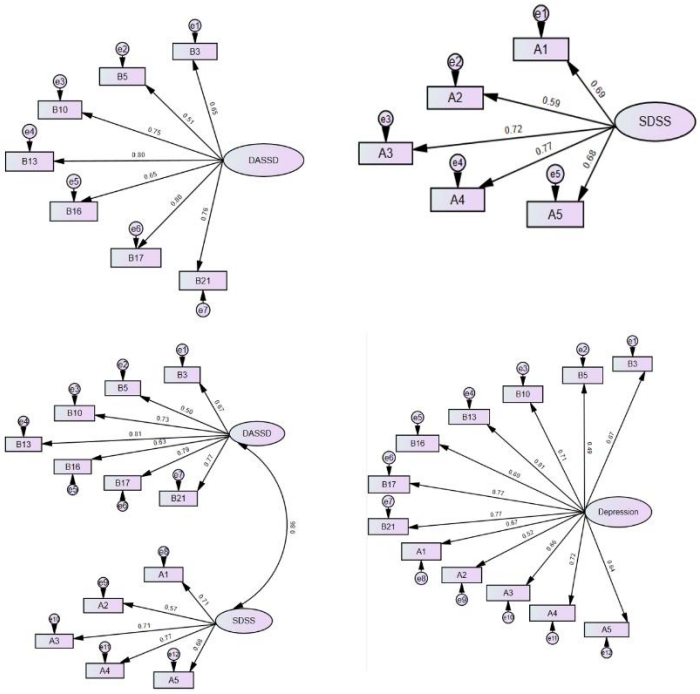
Appendix 1. Confirmatory Factor Analysis for the DASS-D and SDSS



Appendix 2. Score Conversion Table for the DASS-D and SDSS

DASS-D			SDSS		
Raw score	*T-score*	*Percentile rank*	*Raw score*	*T-score*	*Percentile rank*
1	39	13	*1*	42	24
2	41	21	*2*	45	37
3	43	29	*3*	48	50
4	45	36	*4*	51	61
5	47	44	*5*	54	71
6	49	52	*6*	57	79
7	51	60	*7*	60	85
8	53	67	*8*	64	89
9	55	72	*9*	67	92
10	57	77	*10*	70	95
11	59	82	*11*	73	97
12	61	85	*12*	76	98
13	63	88	*13*	79	99
14	65	91	*14*	82	>99
15	67	93	*15*	85	>99
16	69	95			
17	71	96			
18	73	98			
19	75	98			
20	78	99			
21	80	>99			