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Validity and Reliability Study of a Scale to Measure Academic Help-seeking Behaviors Among Nursing Students in Ghana

Mudasir Mohammed Ibrahim,[1]
Rashidatu Monne,[2*] Bridget Comfort Tawiah,[3]
Hanifa Adam,[3] Mohammed Sherif Abukari,[3]
Ramatu Salifu,[4] Iddrisu Mohammed Sisala,[3]
Abubakari Wuni[5]

[1]Department of Internal Medicine (M3), Tamale Teaching Hospital, Tamale, Ghana
[2]Department of Guidance and Counseling, Nurses' and Midwives' Training College, Tamale, Northern Region, Ghana
[3]Department of Nursing, Nurses' and Midwives' Training College, Tamale, Northern Region, Ghana
[4]Ghana Senior High School, Tamale, Ghana
[5]College of Nursing, University of Kentucky, Lexington, USA

Abstract

Background: Seeking academic assistance is a key component of effective learning and academic success in nursing education. However, there is currently no validated instrument specifically designed to measure this behavior within nursing education.

Aim: This study applied a structural equation modelling approach to evaluate the psychometric properties of three adapted scales intended to measure academic help-seeking behaviors among nursing students in Ghana.

Methods: The study employed a cross-sectional, analytical validation design. To determine the factor structure of the three scales, an exploratory factor analysis (EFA) was conducted. Confirmatory factor analysis (CFA) was used to assess convergent and discriminant validity and composite reliability. Model adequacy was evaluated using standard fit indices.

Results: CFA confirmed the unidimensionality of the scales, with item loadings ranging from 0.632 to 0.893. The measurement model demonstrated acceptable fit (Standardized Root Mean Square Residual [SRMR]=0.050, Chi-Square/Degrees of Freedom [CMIN/DF]=2.227, Comparative Fit Index [CFI]=0.924, Root Mean Square Error of Approximation [RMSEA]=0.078, Tucker–Lewis Index [TLI]=0.910, Adjusted Goodness-of-Fit Index [AGFI]=0.940). All academic help-seeking scales exhibited satisfactory composite reliability and convergent validity: executive scale (ω=0.914, average variance extracted [AVE]=0.582), instrumental scale (ω=0.748, AVE=0.500), and avoidance scale (ω=0.903, AVE=0.573). Correlation analyses showed that the instrumental scale was negatively correlated with both executive (r=-0.426, p<0.001) and avoidance scales (r=-0.268, p<0.001), whereas a positive correlation was found between the executive and avoidance scales (r=0.587, p<0.001).

Conclusion: The final version of the instrument demonstrated good psychometric properties, supporting its reliability for measuring nursing students' academic help-seeking behaviors.

***Keywords:** Academic, avoidance, executive, help-seeking behavior, instrumental, nursing students*

Introduction

The higher education learning system differs significantly from primary and secondary levels, introducing a new learning culture that often serves as a source of stress. This stress arises from demanding academic situations, leaving students feeling inadequate in meeting environmental expectations.[1,2] One effective strategy for addressing these difficulties and achieving educational success is academic help-seeking (AHS).[3–5]

Academic help-seeking is a proactive approach that combines self-regulation and social interaction to obtain support in understanding academic materials, concepts, and processes. It serves as both a problem-solving and self-regulated learning strategy, with students who engage in AHS demonstrating better academic outcomes than their peers who do not.[6,7] Successful AHS requires self-awareness, action-oriented behaviors, and incentive-based skills, enabling students to evaluate their learning progress, recognize when assistance is needed, and select appropriate sources of support.[8–10] Willingness to seek help is further influenced by contextual and social factors, including individual perceptions, prevailing social norms, classroom goal structures, and teaching methods.[11,12]

Since the 1980s, research interest in AHS has grown steadily, with a marked increase in the past decade, underscoring its fundamental role in shaping students' academic experiences. Researchers have explored the concept and theoretical frameworks of AHS, emphasizing its connections with other important educational factors.[13–17] However, because of its inherently social nature, AHS reflects diverse personal characteristics and complexities across multiple dimensions, including the factors that influence it, the ways in which it is enacted, and the outcomes it produces.[18,19] Moreover, the transition from high school to higher education introduces distinct challenges, particularly in adapting to new learning environments and engaging with different perspectives and ways of thinking.[19–21]

In the literature, AHS behaviors are typically classified into two main types: instrumental and executive.[17] Instrumental AHS, often referred to as adaptive help-seeking, involves students seeking assistance to improve their comprehension and problem-solving while relying minimally on external input.[17,22–24] Executive

***The current affiliation of the author:** Department of Nursing, Nurses' and Midwives' Training College, Tamale, Northern Region, Ghana*

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Corresponding author: Mudasir Mohammed İbrahim
E-mail: mudassiribrahim30@gmail.com

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AHS, on the other hand, is considered nonadaptive, as students primarily seek help to complete tasks rather than to foster deeper understanding.[25] Additionally, scholars have identified avoidance of help-seeking as a third type of behavior.[26,27] In this case, students recognize their need for assistance but deliberately choose not to seek it, often due to feelings of inadequacy, anxiety, or fear of negative evaluation.[28–30] For instance, students may skip a question or guess an answer instead of asking for clarification. Such avoidance reflects an intentional, goal-oriented decision by students to disengage from help-seeking.[23]

Although higher education is often assumed to provide universal support, many students experience significant academic and emotional challenges. Consequently, AHS behaviors in college settings have become a critical area of research.[31] Nursing students, in particular, frequently face psychological and emotional difficulties, including academic burnout, with nearly 70% reporting feeling overwhelmed by their academic workload.[32] These challenges are often attributed to insufficient theoretical preparation, limited clinical practice experience, time pressures, low motivation, and difficulty adapting to the demands of higher education.[33,34] Evidence indicates that seeking academic assistance, whether through formal sources, such as educators and academic support services, or informal sources, such as classmates and family, enhances learning experiences, boosts self-confidence, and supports overall academic achievement.[6,10]

However, there is a notable lack of validated instruments for measuring academic help-seeking behaviors among nursing students, which limits educators' and researchers' ability to identify needs, address barriers, and implement targeted interventions. Developing a reliable and validated instrument to measure academic help-seeking in nursing education is therefore essential. Such an instrument would provide a deeper understanding of nursing students' behaviors, the factors influencing their willingness to seek help, and the types of support that most effectively promote learning and resilience. To address this gap, this study aimed to adapt and validate an existing academic help-seeking behavior instrument so that it can be used to measure academic help-seeking behaviors among nursing students, providing a context-specific, psychometrically sound instrument to support both academic success and professional development.

Study Question

1. Can the adapted Academic Help-Seeking Behavior Questionnaire for Nursing Students, derived from the Computer Science Help-Seeking Scales (CSHS), validly and reliably measure nursing students' instrumental, executive, and avoidance help-seeking behaviors?

Materials and Methods

Study Design

This research employed a quantitative, analytical cross-sectional design to evaluate the psychometric properties of three adapted scales intended to measure academic help-seeking behaviors among nursing students in Ghana. A comprehensive multiphase approach was implemented, including instrument adaptation, pilot testing, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and the assessment of validity and reliability.

Study Setting

The study was conducted at the Tamale Nurses' and Midwives' Training College (TNMTC), a public tertiary health institution located in Tamale, in the Northern Region of Ghana. The college was built and commissioned in 1974 in the Dohanayili community under the Tamale Metropolitan Assembly. Its mandate is to train nurses and midwives to provide competent, ethical, and professional healthcare services across the country. The college admits students from diverse regions of Ghana and serves as one of the key training centers for strengthening the health workforce, particularly in the northern sector of the country.

Sample Size and Sampling Procedure

In determining the appropriate sample size for this study, recommendations for factor analysis were carefully considered, given that the study involved the adaptation and validation of an existing questionnaire. Methodological experts emphasize that factor analysis requires a sufficiently large number of participants to ensure the stability and validity of the extracted factors. Classical guidelines suggest a ratio of 5–10 participants per item, with a minimum threshold of 100 cases.[35,36] Comrey and Lee[37] further classify sample sizes of 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1,000 or more as excellent. More recent arguments also highlight that the required sample size may depend on the communalities of items and the number of indicators per factor.[38]

The adapted questionnaire comprised 29 items. Following the widely accepted guideline of "10 participants per item,"[39] a minimum of 290 participants was required. This study successfully collected data from 300 participants, thereby meeting the recommended standard for factor analysis. Participants were drawn from level 200 and level 300 nursing students. In the Ghanaian nursing education system, class represents the year of study, with level 200 indicating second-year and level 300 indicating third-year students. This sample size not only satisfies the minimum methodological requirements but also aligns with best-practice recommendations that a sample of 300 is considered "good" and provides a robust basis for factor analytic procedures.[36,37,40] A convenience sampling approach was employed, with participants selected based on their availability and willingness to participate. This pragmatic strategy was chosen to facilitate data collection within the academic setting while still ensuring adequate representation across the targeted year groups.

Data Tools

The questionnaire used in this study comprised two sections. The first section captured participants' demographic information, including age, class, and marital status, using a self-developed form. The second section consisted of the CSHS, originally developed in English by Pajares et al.[30]

Instrument Adaptation and Pilot-testing Procedures

This study adapted the CSHS and examined their content validity for use in the nursing context. The original CSHS includes four subscales: instrumental help-seeking, executive help-seeking, avoidance of help-seeking, and perceived benefits of help-seeking. It contains 36 items rated on an 8-point Likert scale ranging from 1 ("definitely false") to 8 ("definitely true"). Although the original CSHS comprises four scales, only three subscales (instrumental help-seeking, executive help-seeking, and avoidance of help-seeking) were retained. This decision was based on theoretical and contextual relevance to the study's focus on academic help-seeking behavior. Pajares et al.[30] noted that the scales can be adapted across various academic disciplines.

The instrumental help-seeking scale assesses a student's tendency to seek necessary information independently to complete tasks (e.g., "When I ask my teacher for help, I prefer to be given hints or clues rather than the answer," "When I ask a student for help understanding the material in this class, I prefer that the student help me understand the general ideas rather than simply tell me the answer").[26,30] The executive help-seeking scale evaluates a student's tendency to rely on external help, such as from colleagues or educators, to finish tasks (e.g., "When I ask the teacher for help in this class, I prefer that the teacher do the work for me rather than explain to me how to do it," "When I ask another student for help on something I don't understand, I ask that student to do it for me").[30,41] The avoidance of help-seeking scale measures situations in which students need support but refrain from seeking it (e.g., "I don't ask for help in this class even when the work is too hard to solve on my own," "I would put down any answer rather than ask for help in this class").[30,42] Together, these scales provide a comprehensive assessment of help-seeking behaviors in academic settings.

The validity and reliability of these scales have been extensively established, with Pajares et al.,[30] China,[43] and Malone[44] confirming satisfactory internal consistency (>0.70) and content validity. The fourth scale, perceived benefits of help-seeking, was excluded from the present study because its items primarily capture the positive ramifications of seeking help on a task from an individual perspective (e.g., "I like to ask questions in this class," "I like to ask for help in this class because it helps me understand the topic more completely").[30]

In this study, content validity was assessed using the Content Validity Index (CVI) for the three subscales. A panel of five experts reviewed the items for relevance, clarity, and conceptual equivalence. The final decision was to retain the original structure of the scale while making minor adjustments to the wording to ensure the instrument was culturally sensitive and appropriate for the Ghanaian context. Minor terminolo-

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Table 1. Sociodemographic characteristics of participants

Characteristic	Category	EFA		CFA	
		n	%	n	%
Age (years)	Mean±SD	22.07 (1.51)		22.08 (2.02)	
Class[1]	Level 200	58	58.0	129	64.5
	Level 300	42	42.0	71	35.5
	Total	100		200	
Marital status	Single	96	96.0	184	92.0
	Married	4	4.0	16	8.0
	Total	100		200	

[1]: Class refers to the academic year of study in the Ghanaian nursing program (Level 200=second year, Level 300=third year). EFA: Exploratory factor analysis, CFA: Confirmatory factor analysis, SD: Standard deviation.

gy modifications were made, including replacing references to "Computer Science" with "Nursing" and changing "Teacher" to "Nurse educator." Each item was rated on a 4-point scale (1=not relevant, 4=highly relevant); all items scored above 0.80 and were retained.[45] The final CVI values for the subscales were 0.92 for instrumental help-seeking, 0.89 for executive help-seeking, and 0.85 for avoidance of help-seeking, indicating good content validity. The resulting adapted instrument, named the Academic Help-Seeking Behavior Questionnaire for Nursing Students (AHSBQ-NS), consists of 29 Likert-type items, preserving the original response format from 1 ("Strongly False") to 8 ("Strongly True").

A pilot study was then conducted to evaluate response patterns, item functionality, and the reliability of the adapted questionnaire.[46] Fifty nursing students from a different nursing training institution participated by completing the questionnaire and providing feedback regarding its clarity and ease of understanding. The feedback revealed no minor or major issues, so the questionnaire was retained in its adapted form. Analysis of the pilot data demonstrated acceptable to excellent reliability across the help-seeking scales: instrumental (α=0.716), executive (α=0.901), and avoidance of help-seeking (α=0.881).[47] Further details, including the specific items and Cronbach's alpha values for each scale of the Academic Help-Seeking Behavior Scales Questionnaire for Nursing Students, are presented in Appendix 1.

Data Collection Procedure

Approval to conduct the study was first obtained from the nursing college. Data collection was carried out between January 2024 and February 2024. The study population comprised nursing students, and arrangements were made with nurse educators to administer the questionnaire during scheduled class sessions. Each participant received a comprehensive explanation of the study objectives, and any questions raised were addressed prior to participation. Both verbal and written informed consent were obtained before distributing the questionnaires. Upon completion, participants were instructed to seal their responses in envelopes to ensure confidentiality and facilitate secure transport of the data.

Data Analysis

The analysis involved several statistical procedures to evaluate the psychometric properties of the adapted scales. Initially, data screening and cleaning were performed to ensure quality before proceeding to EFA, CFA, and additional assessments of validity and reliability. Participation was secured from 300 nursing students, and data entry was conducted using JMP Professional Statistical Software Version 17.1 (SAS Institute Inc., Cary, North Carolina, United States). No missing values or entry errors were detected. Following established guidelines, a sample of at least 100 participants is sufficient for EFA and at least 200 for CFA.[39,46,48] Accordingly, the dataset was randomly split into two subsamples: 100 cases for EFA and 200 for CFA. Screening indicated no outliers, and although the data showed non-normal distributions, factor analysis was conducted without transformation, as it is generally robust to violations of normality.[49,50] EFA was performed with IBM SPSS Statistics Version 27 (IBM Corp., Armonk, New York, United States) utilizing principal component analysis and Varimax rotation. The analysis aimed to extract three factors, guided by theoretical expectations.[30,43,51] Items displaying factor loadings below 0.40 were removed.[52,53] The Kaiser-Meyer-Olkin (KMO) statistic (>0.60) and Bartlett's Test of Sphericity (p<0.001) confirmed data suitability for EFA.54 CFA followed, conducted with SmartPLS Ver-

Table 2. Number of factors extracted in the academic help-seeking behavior questionnaire for nursing students (AHSBQ-NS): Results from exploratory factor analysis (EFA)

Items	Factor 1 (Executive help-seeking)	Factor 2 (Avoidance of help-seeking)	Factor 3 (Instrumental help-seeking)
IHS2	0.104	-0.114	**0.789**
IHS3	-0.027	0.021	**0.674**
IHS5	-0.122	-0.048	**0.745**
IHS7	-0.404	0.026	**0.555**
IHS10	-0.452	-0.292	**0.532**
EHS2	**0.644**	0.229	-0.149
EHS3	**0.807**	0.116	-0.161
EHS4	**0.744**	0.056	-0.174
EHS5	**0.826**	0.056	-0.100
EHS6	**0.729**	0.042	0.061
EHS7	**0.823**	0.113	-0.141
EHS8	**0.776**	0.173	0.032
EHS9	**0.824**	0.195	0.051
EHS10	**0.743**	0.224	-0.128
AHS1	0.373	**0.614**	-0.016
AHS2	0.393	**0.612**	-0.020
AHS3	0.071	**0.760**	0.064
AHS4	0.252	**0.685**	-0.083
AHS5	0.073	**0.679**	-0.143
AHS6	0.157	**0.695**	-0.078
AHS7	0.085	**0.744**	-0.058
AHS8	-0.117	**0.694**	0.003

Total variance explained (%): 55.74%.
KMO: 0.797.
Bartlett's Test of Sphericity (χ^2 (df), p-value): 1535.882 (406), <0.001. Extraction method: Principal component analysis, Rotation method: Orthogonal varimax with kaiser normalization, IHS: Instrumental help-seeking, EHS: Executive help-seeking, AHS: Avoidance of help-seeking.

Table 3. Model fit indices for the confirmatory factor analysis (CFA)

Name of index	Model I (Initial model)	Model II (After item deletion)	Model III (After modification indices)
CMIN/DF	2.646	2.836	2.227
CFI	0.871	0.883	0.924
RMSEA	0.091	0.096	0.078
TLI	0.855	0.866	0.910
AGFI	0.920	0.921	0.940
SRMR	0.058	0.052	0.050

CMIN/DF: Chi-square/degrees of freedom, CFI: Comparative fit index, RMSEA: Root mean square error of approximation, TLI: Tucker–lewis index, AGFI: Adjusted goodness-of-fit index, SRMR: Standardized root mean square residual.

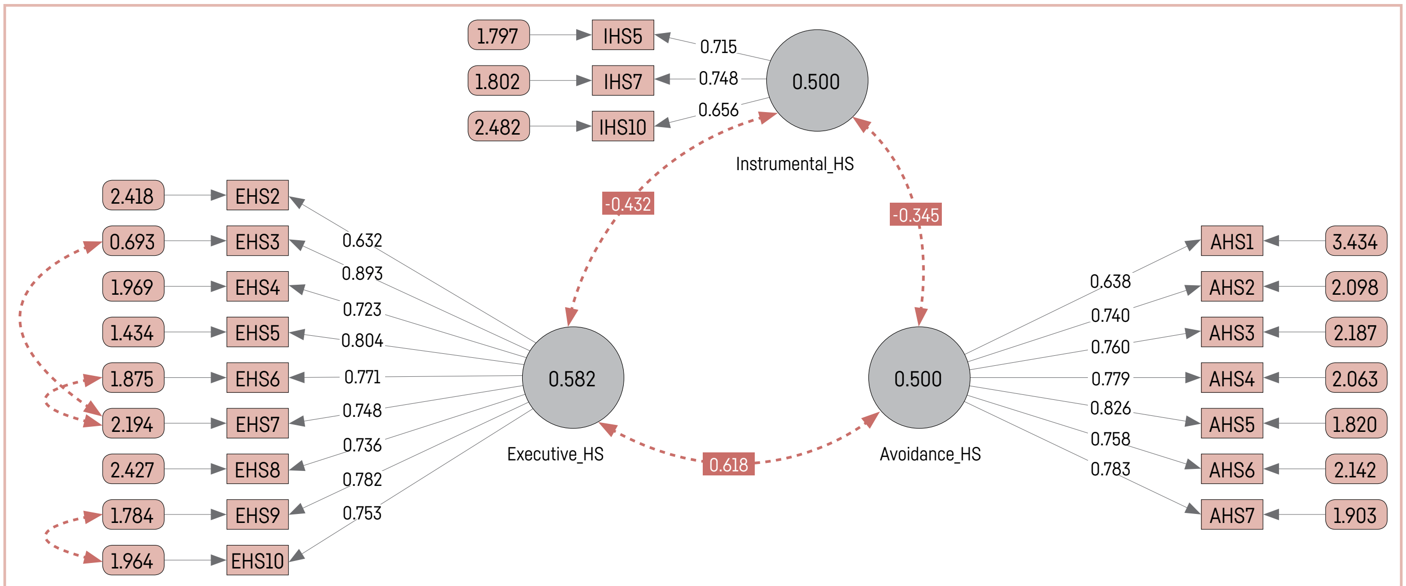

Figure 1. Measurement model of the three scales with a first-order structure (confirmatory factor analysis results).

IHS: Instrumental help-seeking, EHS: Executive help-seeking, AHS: Avoidance of help-seeking.

Table 4. Factor loadings of the finalized version of the academic help-seeking behavior questionnaire for nursing students (AHSBQ-NS): Confirmatory factor analysis results

No.	Abbr.	Items	Factor loading
Scale 1: Instrumental help-seeking	IHS5	When I ask my nurse educator for help understanding the material in this class, I prefer that the nurse educator help me understand the general ideas rather than simply tell me the answer.	0.715
	IHS7	When I ask a student for help understanding the material in this class, I prefer that the student help me understand the general ideas rather than simply tell me the answer.	0.748
	IHS10	When I ask a student for help with something I don't understand, I ask the student to explain it to me rather than just give me the answer.	0.656
Scale 2: Executive help-seeking	EHS2	When I ask my nurse educator for help on something I don't understand, I prefer that the nurse educator do it for me.	0.632
	EHS3	When I ask my nurse educator for help on something I don't understand, I prefer the nurse educator to just give me the answer rather than explain it.	0.893
	EHS4	When I ask the nurse educator for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.	0.723
	EHS5	When I ask my nurse educator for help, I want the nurse educator to do the work for me rather than help me be able to complete the work myself.	0.804
	EHS6	When I ask a student for help on something I don't understand, I prefer that the student just give me the answer rather than explain it.	0.771
	EHS7	When I ask a student for help with my work, I prefer that the student do the work for me rather than explain to me how to do it.	0.748
	EHS8	When I ask another student for help on something I don't understand, I ask that student to do it for me.	0.736
	EHS9	When I ask a student for help in this class, I want the work done for me rather than be helped to complete the work myself.	0.782
	EHS10	When I ask a student for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.	0.753
Scale 3: Avoidance of help-seeking	AHS1	I don't ask for help in this class even when the work is too hard to solve on my own.	0.638
	AHS2	If I need help to solve a problem, I prefer to skip it rather than ask for help.	0.740
	AHS3	I don't ask for help in this class even if I don't understand the lesson.	0.760
	AHS4	If I didn't understand something in this class, I would guess rather than ask someone for help.	0.779
	AHS5	I would rather do worse on an assignment I couldn't finish than ask for help in this class.	0.826
	AHS6	Even if the work was too hard to do on my own, I wouldn't ask for help in this class.	0.758
	AHS7	I would put down any answer rather than ask for help in this class.	0.783

IHS: Instrumental help-seeking, EHS: Executive help-seeking, AHS: Avoidance of help-seeking.

Table 5. Internal consistency and convergent validity measures: Confirmatory factor analysis results

Subscale	McDonald's Omega (ω)	Average variance extracted (AVE)
Instrumental help-seeking	0.748	0.500
Executive help-seeking	0.914	0.582
Avoidance of help-seeking	0.903	0.573
Overall Instrument	0.896	

sion 4.0.9.6 (SmartPLS GmbH, Oststeinbek, Schleswig-Holstein, Germany). Model fit evaluation was based on six key indicators: Chi-square Minimum divided by Degrees of Freedom (CMIN/DF≤5.0), Comparative Fit Index (CFI≥0.90), Root Mean Square Error of Approximation (RMSEA≤0.08), Adjusted Goodness-of-Fit Index (AGFI≥0.90), Tucker-Lewis Index (TLI≥0.90), and Standardized Root Mean Square Residual (SRMR≤0.08).[54] During the analysis, items with loadings below 0.60 were eliminated to improve model fit, and model refinement was guided by modification indices.[55] Additional validity assessments included calculation of the average variance extracted (AVE) for convergent validity (AVE≥0.50) and the Heterotrait-Monotrait Ratio (HTMT) for discriminant validity (HTMT<0.85).[56] In the assessment of reliability, internal consistency was examined using Cronbach's alpha and McDonald's omega, with acceptable thresholds set at ≥0.70.[57-60] Spearman's rank correlation coefficients were finally computed using Jamovi Desktop Version 2.6.19 (The Jamovi Project, Sydney, New South Wales, Australia) to explore relationships between the three scales.

Ethical Consideration

Ethical approval for this study was obtained from the Ethics Committee of Nurses' and Midwives' Training College, Tamale (Approval Number: MOH/NMTC/51/280-23, Date: 19.12.2023). Participants were fully informed about the study's purpose, procedures, and their right to withdraw at any time without penalty, and written informed consent was obtained. Confidentiality was maintained using identification codes, and all data were securely stored. The study was conducted in strict accordance with the ethical principles set forth in the Declaration of Helsinki. Regarding the adapted instrument, the original authors of the CSHS permitted adaptation for other academic domains and recommended CFA for further validation; formal permission was therefore not required.[17]

Results

Sociodemographic Characteristics

Participants included in the EFA and CFA groups showed similar sociodemographic profiles. The mean age for the EFA group was 22.07 years (standard deviation [SD]=1.51), whereas the CFA group had a mean age of 22.08 years (SD=2.02). In terms of academic level, the majority of participants in both groups were enrolled at level 200, comprising 58.0% of the EFA group and 64.5% of the CFA group. Moreover, a large proportion of participants in both groups were single, with 96.0% in the EFA group and 92.0% in the CFA group (Table 1).

Exploratory Factor Analysis

EFA was conducted using the first sample to examine the underlying structure of the Academic Help-Seeking Behavior Questionnaire for Nursing Students (AHSBQ-NS). Principal component analysis with orthogonal varimax rotation was employed, with the number of factors set to three. The data's suitability for the EFA was confirmed: the KMO measure of sampling adequacy was 0.797 (greater than the acceptable threshold of 0.60), and Bartlett's Test of Sphericity was significant (χ^2=1535.882, df=406, p<0.001), satisfying the necessary assumptions.[61]

In the initial EFA model, items loaded distinctly onto their respective factors without any cross-loadings. The executive help-seeking scale emerged as the first factor, showing loadings between 0.294 and 0.824. The second factor was the avoidance of help-seeking scale, with item loadings between 0.453 to 0.759. The third factor, instrumental help-seeking, had item loadings between 0.314 and 0.736. The total variance explained by the model was 49.193%. Adhering to best practices, items with factor loadings ≥0.40 were retained, as such values reflect substantial contributions of items to their respective factors.[52,53] Items "IHS6" and "EHS1" were removed due to factor loadings below 0.40, enhancing the reliability of the factor structure. Following this adjustment, nine items each were retained for the three scales. The total variance explained was initially distributed as follows: 36.58% for the instrumental help-seeking scale, 62.06% for the executive help-seeking scale, and 47.40% for the avoidance of help-seeking scale. Since the extracted variance for the instrumental help-seeking and avoidance of help-seeking scales fell below the recommended 50% threshold,[62] additional refinements were made. Specifically, four items ("IHS1," "IHS4," "IHS8," "IHS9") from the instrumental help-seeking scale and one item ("AHS9") from the avoidance of help-seeking scale were removed due to communalities ≤0.30.[52]

The final EFA model demonstrated improved psychometric properties. Factor 1 (Executive Help-Seeking Scale) retained nine items, explaining 62.06% of the variance; Factor 2 (Avoidance of Help-Seeking Scale) included eight items, explaining

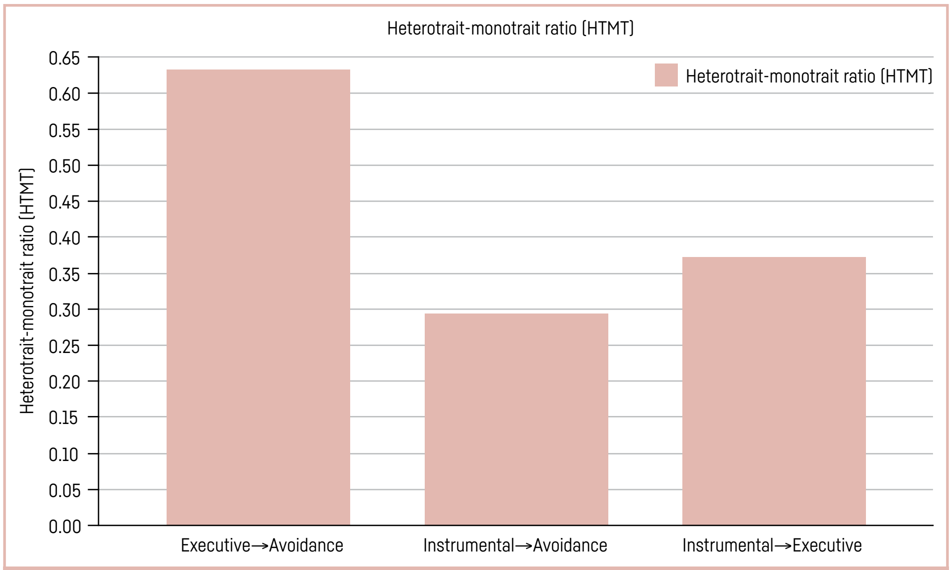

Figure 2. Discriminant validity – heterotrait-monotrait ratio of correlations (HTMT) (confirmatory factor analysis results).

Table 6. Cronbach's alpha for each subscale and "if item is deleted" values

No.	Abbr.	Items	If Item is deleted (Alpha)	Cronbach's Alpha (Scale)
Scale 1: Instrumental help-seeking	IHS5	When I ask my nurse educator for help understanding the material in this class, I prefer that the nurse educator help me understand the general ideas rather than simply tell me the answer.	0.655	**0.749**
	IHS7	When I ask a student for help understanding the material in this class, I prefer that the student help me understand the general ideas rather than simply tell me the answer.	0.641	
	IHS10	When I ask a student for help with something I don't understand, I ask the student to explain it to me rather than just give me the answer.	0.696	
Scale 2: Executive help-seeking	EHS2	When I ask my nurse educator for help on something I don't understand, I prefer that nurse educator do it for me.	0.926	**0.927**
	EHS3	When I ask my nurse educator for help on something I don't understand, I prefer the nurse educator to just give me the answer rather than explain it.	0.913	
	EHS4	When I ask the nurse educator for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.	0.921	
	EHS5	When I ask my nurse educator for help, I want the nurse educator to do the work for me rather than help me be able to complete the work myself.	0.916	
	EHS6	When I ask a student for help on something I don't understand, I prefer that the student just give me the answer rather than explain it.	0.915	
	EHS7	When I ask a student for help with my work, I prefer that the student do the work for me rather than explain to me how to do it.	0.918	
	EHS8	When I ask another student for help on something I don't understand, I ask that student to do it for me.	0.919	
	EHS9	When I ask a student for help in this class, I want the work done for me rather than be helped to complete the work myself.	0.914	
	EHS10	When I ask a student for help with my work, I prefer to be given the answer rather than a explanation of how to do the work myself.	0.916	
Scale 3: Avoidance of help-seeking	AHS1	I don't ask for help in this class even when the work is too hard to solve on my own.	0.900	**0.903**
	AHS2	If I need help to solve a problem, I prefer to skip it rather than ask for help.	0.887	
	AHS3	I don't ask for help in this class even if I don't understand the lesson.	0.886	
	AHS4	If I didn't understand something in this class, I would guess rather than ask someone for help.	0.885	
	AHS5	I would rather do worse on an assignment I couldn't finish than ask for help in this class.	0.882	
	AHS6	Even if the work was too hard to do on my own, I wouldn't ask for help in this class.	0.888	
	AHS7	I would put down any answer rather than ask for help in this class.	0.886	
Overall Instrument				0.877

IHS: Instrumental help-seeking, EHS: Executive help-seeking, AHS: Avoidance of help-seeking.

50.70% of the variance; and Factor 3 (Instrumental Help-Seeking Scale) comprised five items, explaining 50.00% of the variance. Item loadings improved across all factors: Factor 1 (Executive Help-Seeking Scale) ranged from 0.644 to 0.826 (Cronbach's α=0.922), Factor 2 (Avoidance of Help-Seeking Scale) ranged from 0.612 to 0.760 (Cronbach's α=0.859), and Factor 3 (Instrumental Help-Seeking Scale) ranged from 0.532 to 0.789 (Cronbach's α=0.741) (Table 2). The model's overall variance explained reached 55.74%, with corrected item-total correlation (CITC) scores ranging from 0.443 to 0.780.[47] The final AHSBQ-NS comprised 22 items.

Confirmatory Factor Analysis

Model Fit and Factor Loadings

Confirmatory factor analysis was conducted using the second sample to validate the factor structure of the 22-item Academic Help-Seeking Behavior Questionnaire for Nursing Students. The initial CFA results indicated a poor model fit: CMIN/DF=2.646, CFI=0.871, RMSEA=0.091, TLI=0.855, AGFI=0.920, and SRMR=0.058. Although some indices such as CMIN/DF, SRMR, and AGFI met acceptable thresholds, the overall fit suggested the need for model revisions.

To improve model fit, iterative modifications were performed. Specifically, two items ("IHS2" and "IHS3") from the instrumental help-seeking scale and one item ("AHS8") from the avoidance of help-seeking scale were removed. In confirmatory factor analysis, it is generally recommended to retain at least three items per factor to ensure robust construct representation and reliability,[63,64] and this guideline informed the subsequent modifications to the model.

Table 7. Interrelationships among the three academic help-seeking behavior scales

Subscales	Instrumental help-seeking	Executive help-seeking	Avoidance of help-seeking
Instrumental help-seeking	–		
Executive help-seeking	-0.426***	–	
Avoidance of help-seeking	-0.268***	0.587***	–

*: $p<0.05$, **: $p<0.01$, ***: $p<0.001$.

After these adjustments, the revised model comprised 19 items across the three scales: instrumental help-seeking (three items), executive help-seeking (nine items), and avoidance of help-seeking (seven items). However, despite these revisions, the revised CFA model still demonstrated an inadequate fit, with the following indices: TLI=0.866, CMIN/DF=2.836, CFI=0.883, RMSEA=0.096, AGFI=0.921, and SRMR=0.052. Further refinements were guided by modification indices (MIs). Specifically, correlations were added between three pairs of error terms within the executive help-seeking scale ("EHS3 and EHS7," "EHS6 and EHS7," and "EHS9 and EHS10"). Following these adjustments, the model achieved a good fit, with improved indices: RMSEA=0.078, CFI=0.924, CMIN/DF=2.227, TLI=0.910, AGFI=0.940, and SRMR=0.050 (Table 3).[40,65,66]

In the final CFA model, the factor loadings for the instrumental help-seeking scale items ranged from 0.656 to 0.748. For the executive help-seeking scale, item loadings ranged from 0.632 to 0.893. The avoidance of help-seeking scale items had loadings ranging from 0.638 to 0.826 (Fig. 1, Table 4). Overall, the finalized AHSBQ-NS consisted of 19 Likert-type items across three scales.

Validity and Reliability

Convergent validity was assessed by calculating the average variance extracted for each scale, yielding values between 0.500 and 0.582: the executive help-seeking scale (AVE=0.582), the instrumental help-seeking scale (AVE=0.500), and the avoidance of help-seeking scale (AVE=0.573). These values indicate satisfactory convergent validity (Table 5).

To assess discriminant validity, the Heterotrait-Monotrait Ratio was used. The HTMT values were 0.633 between the executive help-seeking and avoidance of help-seeking scales, 0.293 between the instrumental help-seeking and avoidance of help-seeking scales, and 0.372 between the instrumental help-seeking and executive help-seeking scales. All values were well below the recommended threshold of 0.85,56 confirming the distinctiveness of the scales (Fig. 2).

Internal consistency was evaluated using McDonald's omega (ω) and Cronbach's alpha (α) for each scale as well as the overall instrument. All three scales and the overall instrument demonstrated satisfactory reliability: the executive help-seeking scale (ω=0.914, α=0.927), the instrumental help-seeking scale (ω=0.748, α=0.749), and the avoidance of help-seeking scale (ω=0.903, α=0.903), with coefficient values surpassing the recommended threshold of 0.7057,58 (Table 5, 6).

Correlation Analysis

Spearman's rank correlation analysis revealed significant relationships among the three scales. The instrumental help-seeking scale was negatively correlated with both the executive help-seeking scale (r=-0.426, p<0.001) and the avoidance of help-seeking scale (r=-0.268, p<0.001). Additionally, the executive help-seeking scale showed a positive correlation with the avoidance of help-seeking scale (r=0.587, p<0.001) (Table 7).

Discussion

Help-seeking is a well-established determinant of academic success and serves as a protective factor against academic stress. However, validated instruments specifically designed for the nursing education context remain limited.[5,9,30] To address this gap, the present study adapted three scales from the existing CSHS to create the 19-item Academic Help-Seeking Behavior Questionnaire for Nursing Students. This instrument assesses three dimensions: (a) instrumental help-seeking, defined as seeking guidance to complete tasks independently; (b) executive help-seeking, relying on others to complete tasks without attempting them independently; and (c) avoidance of help-seeking, characterized by not seeking help even when it is needed. Items were reviewed and refined in consultation with nursing education experts to ensure content relevance and face validity. Pretesting indicated good clarity and feasibility, with participant feedback largely positive.

In the EFA, executive help-seeking emerged as Factor 1, avoidance as Factor 2, and instrumental help-seeking as Factor 3. Items loaded fully onto their respective factors without any cross-loadings. The absence of problematic cross-loadings indicates that items cluster cleanly around their intended constructs, supporting the factorial distinctiveness of the scales. While Pajares et al.[30] also reported a clear factor structure for the original CSHS, their factor ordering differed, with Executive as the first factor and Instrumental as the second. This discrepancy likely reflects contextual and disciplinary differences. Nursing education emphasizes clinical competence, rapid decision-making, and supervisor-guided learning,[67,68] factors that can plausibly elevate reliance on executive strategies and sharpen distinctions between avoidance and instrumental approaches. These contextual influences underscore the necessity of validating psychometric instruments within the specific populations where they will be applied, rather than assuming structural invariance across disciplines or cultures.[30]

Internal consistency was good across the three scales, indicating that items within each subscale are interrelated and reliably measure their intended constructs. These reliability coefficients are comparable to those reported in the original instrument development and subsequent adaptations.[30,42,43,51] The combination of high internal consistency and a coherent factor structure supports the conclusion that the instrument provides a stable and reliable measure of help-seeking tendencies among nursing students.

To build on the EFA, the study conducted CFA, which the original authors did not perform, to test the hypothesized three-factor measurement model. CFA results demonstrated satisfactory composite reliability and convergent validity: factor loadings exceeded the commonly accepted threshold of 0.60, composite reliability values surpassed 0.70, and average variance extracted values met recommended standards (≥0.50), indicating that each latent construct was well represented by its indicators.[36] Global model fit indices (CMIN/DF, CFI, TLI, RMSEA, AGFI, SRMR) also fell within acceptable ranges consistent with contemporary recommendations, supporting the adequacy and parsimony of the three-factor model.[36,65] Using both EFA and CFA provides complementary evidence of factorial validity and strengthens claims regarding the instrument's structural validity in the nursing student population.

Inter-scale relationships provide valuable construct-level information. The instrumental help-seeking scale correlated negatively with both the executive and avoidance help-seeking scales, whereas the executive and avoidance help-seeking scales were positively correlated. Conceptually, these patterns align with the interpretation that instrumental help-seeking reflects adaptive, autonomy-supporting behavior (seeking assistance that facilitates independent task completion),[13,17] while executive help-seeking reflects reliance on others that may undermine self-regulated learning, and avoidance of help-seeking reflects reluctance to seek help even when it is warranted.[17,28,29] Thus, higher instrumental tendencies are associated with lower reliance on others and lower avoidance of help-seeking, consistent with prior empirical findings on help-seeking strategies.[17,30,31]

Taken together, the psychometric evidence indicates that the AHSBQ-NS is a reliable and valid measure of academic help-seeking behaviors among nursing students in the Ghanaian context. Methodologically, the study's integration of expert review, pretesting, EFA, and confirmatory factor analysis aligns with best practices for instrument adaptation and validation, providing convergent evidence supporting the measure's utility in both research and practice.[36]

Limitations of the Study

Despite the rigorous validation process, some limitations should be considered. First, recruiting participants from a single nursing school through convenience sampling may have introduced selection bias, thereby restricting the generalizability of the findings to a broader nursing student population. Second, the cross-sectional design and reliance on self-reported responses could have resulted in potential response biases. Additionally, although the adapted questionnaire was pretested, modifications from the original version may have introduced subtle cultural or contextual biases that were not extensively analyzed. Future research should consider employing multigroup comparisons across different institutions, contexts, or cultures to assess measurement invariance. This approach would ensure that the instrument is interpreted consistently across diverse populations, thereby enhancing its generalizability and applicability in various educational settings.

Conclusion

The finalized AHSBQ-NS demonstrated good psychometric properties and a well-supported factor structure. The questionnaire effectively captures three distinct aspects of academic help-seeking behavior among nursing students (instrumental, executive, and avoidance of help-seeking). The results also affirm that the instrument is a dependable and valid instrument that can offer valuable insights into students' approaches to academic challenges in high-pressure educational settings. By addressing a critical gap in the assessment of help-seeking behaviors within nursing education, this instrument will enable educators and researchers to better identify students who may require additional support or targeted interventions. Ultimately, the use of this instrument can foster a more supportive academic environment and contribute to improving nursing education outcomes.

Ethics Committee Approval: The study was approved by the Ethics Committee of Nurses' and Midwives' Training College, Tamale (Approval Number: MOH/NMTC/51/280-23, Date: 19.12.2023).

Informed Consent: All participants provided informed consent before taking part in the study. Written permission for publication was also obtained from each participant.

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References

1. Chairani L, Raudatussalamah R. Academic Help Seeking Behavior Among Students in Higher Education: Assessment for Counseling. EGCDJ. 2024;7(1):72–82. [CrossRef]
2. Bedewy D, Gabriel A. Examining perceptions of academic stress and its sources among university students: The Perception of Academic Stress Scale. Health Psychol Open. 2015;2(2):2055102915596714. [CrossRef]
3. Ratanasiripong P, Wang CD, Ratanasiripong N, Hanklang S, Kathalae D, Chumchai P. Impact of psychosocial factors on academic performance of nursing students in Thailand. JHR. 2021;36(4):598–606. [CrossRef]
4. Deng Y, Cherian J, Khan NUN, et al. Family and Academic Stress and Their Impact on Students' Depression Level and Academic Performance. Front Psychiatry. 2022;13:869337. [CrossRef]
5. Bimerew MS, Arendse JP. Academic help-seeking behaviour and barriers among college nursing students. Health SA Gesondheid. 2024;29:a2425. [CrossRef]
6. Won S, Hensley L, Wolters C. Brief Research Report: Sense of Belonging and Academic Help-Seeking as Self-Regulated Learning. J Exp Educ. 2019;89(1):1–13. [CrossRef]
7. Brown D, Barry JA, Todd BK. Barriers to academic help-seeking: the relationship with gender-typed attitudes. J Furth High Educ. 2021;45(3):401–416. [CrossRef]
8. Karabenick SA, Newman RS, eds. Help Seeking in Academic Settings: Goals, Groups, and Contexts. 1st edition. Routledge; 2013:335. [CrossRef]
9. Paris SG, Newman RS. Developmental aspects of self-regulated learning. Educ Psychol. 1990;25(1):87–102. [CrossRef]
10. Dueñas JM, Camarero-Figuerola M, Castarlenas E. Academic Help-Seeking Attitudes, and Their Relationship with Emotional Variables. Sustainability. 2021;13(11):6120. [CrossRef]
11. Karabenick SA, ed. Strategic Help Seeking: Implications for Learning and Teaching. Mahwah, NJ: Lawrence Erlbaum Associates; 1998.
12. Payakachat N, Gubbins PO, Ragland D, et al. Academic help-seeking behavior among student pharmacists. Am J Pharm Educ. 2013;77(1):7. [CrossRef]
13. Marchand G, Skinner EA. Motivational dynamics of children's academic help-seeking and concealment. J Educ Psych. 2007;99(1):65–82. [CrossRef]
14. Karabenick SA. Perceived Achievement Goal Structure and College Student Help Seeking. J Educ Psych. 2004;96(3):569–581. [CrossRef]
15. Ryan AM, Patrick H, Shim SO. Differential Profiles of Students Identified by Their Teacher as Having Avoidant, Appropriate, or Dependent Help-Seeking Tendencies in the Classroom. J Educ Psych. 2005;97(2):275–285. [CrossRef]
16. Butler R. Determinants of help seeking: Relations between perceived reasons for classroom help-avoidance and help-seeking behaviors in an experimental context. J Educ Psych. 1998;90(4):630–643. [CrossRef]
17. Qayyum A. Student help-seeking attitudes and behaviors in a digital era. International J Educ Technol High Educ. 2018;15(1):17. [CrossRef]
18. Black S, Allen JD. Part 8: Academic Help Seeking. Ref Libr. 2019;60(1):62–76. [CrossRef]
19. Li R, Che Hassan N, Saharuddin N. College Student's Academic Help-Seeking Behavior: A Systematic Literature Review. Behav Sci (Basel). 2023;13(8):637. [CrossRef]
20. Mulaudzi I. Challenges Faced By First-Year University Students: Navigating the Transition to Higher Education. JEHD. 2023;12(2):2334–2978.
21. Aristoteles, Rini PS, Wijanarko NA. The relationship of academic help-seeking with student achievement on nursing students in STIKes Muhammadiyah Palembang. Enferm Clin. 2020;30:106–109. [CrossRef]
22. Gall SNL, Resnick L. Help Seeking, Achievement Motivation, and the Social Practice of Intelligence in School. In: Strategic Help Seeking. Karabenick SA, eds. Routledge; 1998.
23. Finney SJ, Barry CL, Jeanne Horst S, Johnston MM. Exploring profiles of academic help seeking: A mixture modeling approach. Learn Individ Differ. 2018;61:158–171. [CrossRef]
24. Yang F, Stefaniak J. A Systematic Review of Studies Exploring Help-Seeking Strategies in Online Learning Environments. OLJ. 2023;27(1):107–126. [CrossRef]
25. Mousa Golestaneh S, Askari F. Help-seeking or help avoidance: Important motivational, personality and metacognitive antecedents role in help-seeking and help-avoidance between normal and gifted students. Eur Online J Nat Soc Sci. 2014;2(3):3403–3410.
26. Huet N, Moták L, Sakdavong JC. Motivation to seek help and help efficiency in students who failed in an initial task. Comput Hum Behav. 2016;63:584–593. [CrossRef]
27. Davison K, Malmberg LE, Sylva K. Academic help-seeking interactions in the classroom: A microlongitudinal study. Br J Educ Psychol. 2023;93(1):33–55. [CrossRef]
28. Thomas CL, Tagler MJ. Predicting Academic Help-Seeking Intentions Using the Reasoned Action Model. Front Educ. 2019;4:59. [CrossRef]
29. Cheng KH, Liang JC, Tsai CC. University Students' Online Academic Help Seeking: The Role of Self-Regulation and Information Commitments. Internet High Educ. 2013;16:70–77. [CrossRef]
30. Pajares F, Cheong YF, Oberman P. Psychometric Analysis of Computer Science Help-Seeking Scales. Educ Psychol Meas. 2004;64(3):496–513. [CrossRef]
31. Molla S. Help-seeking behavior, belief in counseling service effectiveness and academic self-concept of college students. Cogent Educ. 2022;9(1):2142458. [CrossRef]
32. Davis and Elkins College. Balancing Life and Nursing School: From Stress to Success. Career Potential, Student Life. Accessed December 11, 2025. https://www.dewv.edu/balancing-life-and-nursing-school-from-stress-to-success/
33. Hwang E, Kim J. Factors affecting academic burnout of nursing students according to clinical practice experience. BMC Med Educ. 2022;22(1):346. [CrossRef]
34. Ayaz-Alkaya S, Simones J. Nursing education stress and coping behaviors in Turkish and the United States nursing students: A descriptive study. Nurse Educ Pract. 2022;59:103292. [CrossRef]
35. Gorsuch RL. Factor Analysis. 2nd edition. New York: Psychology Press; 2013:448. [CrossRef]
36. Hair J, Black W, Babin B, Anderson R. Multivariate Data Analysis: A Global Perspective. 7th edition. Pearson;2010.
37. Comrey AL, Lee HB. A first course in factor analysis. 2nd edition. Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc;1992:430.
38. MacCallum RC, Widaman KF, Zhang S, Hong S. Sample size in factor analysis. Psychol Methods. 1999;4(1):84–99. [CrossRef]
39. Bujang MA, Ghani P, Soelar S, Aizura N. Sample size guideline for exploratory factor analysis when using small sample: Taking into considerations of different measurement scales. Presented at: 2012 International Conference on Statistics in Science, Business and Engineering (ICSSBE); September 10–12; 2012; Langkawi, Malaysia. Accessed December 11, 2025. https://ieeexplore.ieee.org/document/6396605
40. Kline RB. Principles and practice of structural equation modeling. 4th edition. New York, NY, US: The Guilford Press; 2016:534.
41. Martín-Arbós S, Castarlenas E, Dueñas JM. Help-Seeking in an Academic Context: A Systematic Review. Sustainability. 2021;13(8):4460. [CrossRef]
42. White MC, Bembenutty H. Not All Avoidance Help Seekers Are Created Equal: Individual Differences in Adaptive and Executive Help Seeking. Sage J. 2013;3(2):2158244013484916. [CrossRef]
43. China E. Investigating College Algebra Help-Seeking Behaviors of African American Community College Students: A Hierarchical Linear Modeling Approach. Dissertation. Georgia State University; 2020.
44. Malone W. Racial Identity, Masculinity, and Academic Help-Seeking Behaviors in African American Male College Students. Dissertation. Western Michigan University;2021.
45. Davis KA. Validity and Reliability in Qualitative Research on Second Language Acquisition and Teaching. Another Researcher Comments. TQ. 1992;26(3):605. [CrossRef]
46. Boateng GO, Neilands TB, Frongillo EA, Melgar-Quiñonez HR, Young SL. Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. Front Public Health. 2018;6:149. [CrossRef]
47. Nunnally JC, Bernstein IH. Psychometric Theory. McGraw-Hill Companies; 1994:786.
48. Kyriazos TA. Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. Psych. 2018;09(08):2207–2230. [CrossRef]
49. Costello A, Osborne J. Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis. PARE. 2005;10:1–9.
50. Yang Y, Liang X. Confirmatory factor analysis under violations of distributional and structural assumptions. IJQRE. 2013;1(1):61–84. [CrossRef]
51. White M. Predicting Success in Teacher Certification Testing: The Role of Academic Help-Seeking. Int J Educ Psychol Assess. 2011;7(1):24–44.
52. Maskey R, Fei J, Nguyen HO. Use of exploratory factor analysis in maritime research. ASJL. 2018;34(2):91–111. [CrossRef]
53. Johnson MC Jr, Liu H, Sorra J, et al. Development and psychometric properties of surveys to assess provider perspectives on the barriers and facilitators of effective care transitions. BMC Health Serv Res. 2021;21(1):478. [CrossRef]
54. Sathyanarayana S, Mohanasundaram T. Fit Indices in Structural Equation Modeling and Confirmatory Factor Analysis: Reporting Guidelines. Asian J Bus Account. 2024;24(7):561–577. [CrossRef]

55. Ahmad S, Zulkurnain NNA, Khairushalimi FI. Assessing the Fitness of a Measurement Model Using Confirmatory Factor Analysis (CFA). IJIAS. 2016;17(1):159–168. [CrossRef]

56. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. JAMS. 2015;43(1):115–135. [CrossRef]

57. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. JMR. 1981;18(1):39–50. [CrossRef]

58. Muhamad Safiih L, Azreen MA. Confirmatory Factor Analysis Approach: A Case Study of Mathematics Students' Achievement in TIMSS. Malaysian J Math Sci. 2016;10(S):41–51.

59. Hair JF, Hult GTM, Ringle CM, et al. Evaluation of Reflective Measurement Models. In: Hair Jr. JF, Hult GTM, Ringle CM, Sarstedt M, Danks NP, Ray S, editors. Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook. Cham: Springer International Publishing; 2021:75–90. [CrossRef]

60. Zaato SG, Ismail M, Uthamaputhran S, Owusu-Ansah W, Salman A, Owusu J. SmartPLS-SEM Analyses Approach in Validity and Reliability of Entrepreneurial Orientation, Social Capital and Government Support Policies on SMEs Performance Instrument. Harbin Gongcheng Daxue Xuebao. 2023;44(5):579–587.

61. Wu RMX, Zhang Z, Zhang H, et al. An FSV analysis approach to verify the robustness of the triple-correlation analysis theoretical framework. Sci Rep. 2023;13(1):9621. [CrossRef]

62. Sarstedt M, Mooi E. Factor Analysis. In: Sarstedt M, Mooi E, editors. A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics. Berlin, Heidelberg: Springer; 2014:235–272. [CrossRef]

63. Zeller RA. Measurement Error, Issues and Solutions. In: Kempf-Leonard K, editor. Encyclopedia of Social Measurement. New York: Elsevier; 2005:665–676. [CrossRef]

64. Raubenheimer J. An Item Selection Procedure to Maximise Scale Reliability and Validity. SAJIP. 2004;30(4):a168. [CrossRef]

65. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct Equ Modeling. 1999;6(1):1–55. [CrossRef]

66. Jöreskog KG, Sörbom D. Lisrel VI: Analysis of Linear Structural Relationships by Maximum Likelihood, Instrumental Variables, and Least Squares Methods. Mooresville: Scientific Software;1986:290.

67. Holst H, Ozolins LL, Brunt D, Hörberg U. The learning space-interpersonal interactions between nursing students, patients, and supervisors at developing and learning care units. Int J Qual Stud Health Well-being. 2017;12(sup2):1368337. Erratum in: Int J Qual Stud Health Well-being. 2017;12(1):1411003. [CrossRef]

68. Workneh M, Kassa M, Mihrete S, et al. Level of clinical competency and associated factors of nursing students in Ethiopia: systematic review and meta-analysis. BMC Nurs. 2024;23(1):738. [CrossRef]

Appendix 1. Description of items for the instrumental, executive, and avoidance of help-seeking scales: Results from exploratory factor analysis (EFA)

Item	Description of items of the academic help-seeking behavior questionnaire for nursing students (AHSBQ-NS)
	Instrumental help-seeking (IHS) (α=0.716)
IHS1	1. When I ask my nurse educator for help, I prefer to be given hints or clues rather than the answer.
IHS2	2. When I am having trouble and ask the nurse educator for help, I like to be given examples of similar problems we have done.
IHS3	3. When I ask the nurse educator for help with something I don't understand, I ask the nurse educator to explain it to me rather than just give me the answer.
IHS4	4. When I ask my nurse educator for help in this class, I only want as much help as necessary to complete the work myself.
IHS5	5. When I ask my nurse educator for help understanding the material in this class, I prefer that the nurse educator help me understand the general ideas rather than simply tell me the answer.
IHS6	6. When I ask a student for help with my work, I don't want that student to give away the whole answer.
IHS7	7. When I ask a student for help understanding the material in this class, I prefer that the student help me understand the general ideas rather than simply tell me the answer.
IHS8	8. When I ask a student for help in this class, I want to be helped to complete the work myself rather than have the work done for me.
IHS9	9. When I ask a student for help in this class, I prefer to be given hints or clues rather than the answer.
IHS10	10. When I ask a student for help with something I don't understand, I ask the student to explain it to me rather than just give me the answer.
	Executive help-seeking (EHS) (α=0.901)
EHS1	1. When I ask the nurse educator for help in this class, I prefer that the nurse educator do the work for me rather than explain to me how to do it.
EHS2	2. When I ask my nurse educator for help on something I don't understand, I prefer that the nurse educator do it for me.
EHS3	3. When I ask my nurse educator for help on something I don't understand, I prefer the nurse educator to just give me the answer rather than explain it.
EHS4	4. When I ask the nurse educator for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.
EHS5	5. When I ask my nurse educator for help, I want the nurse educator to do the work for me rather than help me be able to complete the work myself.
EHS6	6. When I ask a student for help on something I don't understand, I prefer that the student just give me the answer rather than explain it.
EHS7	7. When I ask a student for help with my work, I prefer that the student do the work for me rather than explain to me how to do it.
EHS8	8. When I ask another student for help on something I don't understand, I ask that student to do it for me.
EHS9	9. When I ask a student for help in this class, I want the work done for me rather than be helped to complete the work myself.
EHS10	10. When I ask a student for help with my work, I prefer to be given the answer rather than an explanation of how to do the work myself.
	Avoidance of help-seeking (AHS) (α=0.881)
AHS1	1. I don't ask for help in this class even when the work is too hard to solve on my own.
AHS2	2. If I need help to solve a problem, I prefer to skip it rather than ask for help.
AHS3	3. I don't ask for help in this class even if I don't understand the lesson.
AHS4	4. If I didn't understand something in this class, I would guess rather than ask someone for help.
AHS5	5. I would rather do worse on an assignment I couldn't finish than ask for help in this class.
AHS6	6. Even if the work was too hard to do on my own, I wouldn't ask for help in this class.
AHS7	7. I would put down any answer rather than ask for help in this class.
AHS8	8. I don't ask questions in this class even if I don't understand the lesson.
AHS9	9. If work in this class is too hard, I don't do it rather than ask for help.

IHS: Instrumental help-seeking, EHS: Executive help-seeking, AHS: Avoidance of help-seeking.