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Validity and Reliability Assessment of the Arabic Version of the Social and Emotional Competencies Questionnaire in a Moroccan Nursing Student Population

Jamal Ksiksou[1,2]*, Lhoussaine Maskour[3,4], Smail Alaoui[1], Rahma Bouali[3,5]

Abstract

Objective: The Social and Emotional Competencies Questionnaire (SEC-Q) represents one of the existing tests for assessing these competences in students. The purpose of the present research was to examine the psychometric properties of the SEC-Q in Moroccan nursing students.
Method: A sample of 320 Moroccan nursing students, including 190 women and 130 men, was selected using a stratified convenience sampling method. Methodology consisted of forward and backward translations, linguistic adaptation, and pilot revision. Structural validity was investigated using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Reliability was assessed through test-retest analysis using Pearson's correlation.
Results: Factor analyses produced a four-factor version of 16 items with a range of factor loadings from 0.72 to 0.89. Cronbach's alpha values were 0.92 for the self-awareness factor, 0.91 for the self-management factor, 0.90 for the social awareness factor, and 0.92 for the decision-making factor. These high values indicate excellent reliability. The test-retest coefficient for a 20-day interval between two assessments gave an rtt value of 0.92, demonstrating excellent response reliability. A strong correlation between the SECQ-AV, WLEIS and PSS-CP was found, demonstrating satisfactory convergent and divergent validity ($P < 0.05$).
Conclusion: The Arabic version of SECQ demonstrated its validity and reliability for assessing social and emotional competencies in Moroccan nursing students. However, the sample selected was drawn from a single nursing training institute, which limits the representativeness of the entire student population, and makes it difficult to generalize the results. A cross-sectional study will therefore produce much more varied results, by including a very large sample from different regions and different nursing training institutes in Morocco.

Key words: *Nursing Students; Psychometrics; Questionnaire; Social Competence; Validity and Reliability*

1. Sidi Mohamed Ben Abdellah University, Faculty of Letters and Human Sciences Dhar El Mehraz, Sociology and Psychology Laboratory, Fez, Morocco.
2. Higher Institute of Nursing Professions and Health Techniques (ISPITS), Tetouan, Morocco.
3. Ibn Zohr University, Laboratory of Science and Technology Research (LRST), ESEF, Agadir, Morocco.
4. Higher Institute of Nursing Professions and Health Techniques (ISPITS), Dakhla, Morocco.
5. Higher Institute of Nursing Professions and Health Techniques (ISPITS), Marrakech, Morocco.

***Corresponding Author:**
Address: Higher Institute of Nursing Professions and Health Techniques, Avenue Abdelkhalek Torres, Tetouan, Morocco, Postal Code: 93000.
Tel: 212-667557853 Fax: 212-539971092, Email jamal.ksiksou@usmba.ac.ma

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In recent years, socio-emotional competencies have become a fundamental subject of study in the field of education, due to their impact on the positive development of students (1, 2) and their importance for lifelong adaptation (3, 4). Various international regulatory institutions have placed emphasis on promoting these competencies in future professionals (4). This has made them a relevant subject of study, particularly in higher education.

Social and emotional competencies are described as the capacity to regulate one's own emotional reactions and behaviors during social interactions (5). They are acquired by means of theoretical courses and practical training (6, 7).

A psychological approach developed on the basis of the "Big Five" model describes the different characteristics of personality and classifies them into five distinct types, including traits of conscientiousness, extraversion, agreeableness, neuroticism, and openness to experience (8, 9). These traits refer to relatively stable characteristics that explain the regularity of behavior, thoughts and feelings in different situations and over time (10).

However, certain findings indicate that personality traits are permanentlly unstable, insofar as a variety of external factors, such as life events, or specific interventions can help to modify them (11-13). Therefore, a much more comprehensive approach is needed to map these essential competencies.

Schoon (14) suggested a model that includes both social and emotional skills, known as Domains and Manifestations of Socio-Emotional Competence. This model focuses on three fields, namely self-orientation, other-orientation, and task-orientation. It also describes the three aspects of competence: affective, cognitive and behavioral. However, certain principles need to be clarified, in particular the necessity of practical evaluations of these specific competencies, based on reliable and valid data. Additionally, certain terminological clarifications and linguistic adaptations are necessary.

The conceptual model adopted by the Collaborative for Academic, Social and Emotional Learning (CASEL) integrates the qualitative and environmental dimensions of cognitive, affective, and behavioral components related to learning, as well as intellectual maturation and age. These components interact and combine with various environmental factors (15). The CASEL has two fundamental objectives: the first is to promote positive, supportive and attractive learning environments, and the second is to foster the development of five interdependent skills. These skills include self-awareness (understanding our emotions, objectives and values in relation to our thoughts, feelings and behaviours), self-management (managing our emotions to develop motivation and achievement of our objectives), social awareness (adopting viewpoints of others, understanding them, and expressing empathy), conscious decision-making (accepting social situations, setting positive social objectives, and effectively resolving disagreements when they emerge), and interpersonal skills (establishing successful relationships and respecting social norms) (16, 17).

This model has its origins in the literature on emotional intelligence. Since the first theoretical approach by Salovey & Mayer (18), many other models have emerged. The most common difference between them concerns the classification of this intelligence as an ability or as a trait.

The ability-based model views emotionnel intelligence as the faculty to control and differentiate between emotions of oneself and those of others, and to guide our thinking and actions based on this information (18).

For its part, the trait-based model, designates emotional intelligence as the individual's self-perception of his emotional abilities, referred to as emotional self-efficacy trait. This concept is not part of the taxonomy of human cognitive abilities (19). However, all these models are based electively on a single dimension of EI, namely emotional competence, which corresponds to the perception or understanding of emotions. In contrast, Goleman's mixed model considers EI to be an essential component of social intelligence (20).

Initially, Goleman was interested in the factors responsible for success at work and life in general. He therefore tried to identify competencies that determine an employee's success and satisfaction. Goleman drew on Gardner's work on interpersonal and intrapersonal intelligence, Sternberg's work on practical intelligence, and Mayer and Salovey's work on emotional abilities. He emphasized that there are other factors which influence a person's personal and professional development that are important for society in general, alongside their abilities, character traits and intelligence quotient (IQ) (20). As a representative model, Goleman distinguishes four main competencies grouped into two categories: emotional competencies (self-awareness and self-assessment, self-regulation, social consciousness) and social competencies (social relations control) (20). Indeed, development of these competencies and their application in health sciences training are necessary, particularly in nursing (21).

Existing studies have shown that these competencies can help nursing students to effectively meet challenges of clinical placements (22), enhance their professional qualifications, promote practical training experience, ensuring the safety of healthcare (23). In addition, they also help them to apprehend and handle human interactions calmly and easily (10), accept differences between peers, adapt, alleviate pressure, and optimize productivity in a context of intense constraints (24). Similarly, nursing students with social and emotional competencies are able to adapt to others' states of mind, enabling them to maintain good mental health and achieve satisfactory academic results in their training

programmes (25). Whitley-Hunter (26) found a significant correlation between social and emotional competencies and professional nursing behaviours, including problem solving, self-esteem, and increased cooperation with others. Some studies conclude that there is a significant association between social and emotional competencies, cognitive competencies, motivational feelings as well as satisfaction in nursing students (27-29).

Recognizing the crucial importance of non-technical competencies, in particular interpersonal, social and behavioural skills (in this case 'soft skills'), Morocco has recently introduced programmes to include these skills in the vocational and university training system, with the aim of revitalising the system at cognitive, personal, and social levels, including the nursing curriculum offered by the Higher Institute of Nursing Sciences (ISPITS) (29), which is a higher education establishment (29). Developing and strengthening the 'soft skills' of nursing students through initial training is essential, as it ensures their professional integration and improves the quality of the healthcare for patients (29).

However, identifying factors that lead to the development of these skills in these students can be complex due to their multidimensional nature. These factors include curriculum, teaching, clinical placement, professional social interaction and learning environment. In addition, the measurement tools proposed are generally inspired by the emotional intelligence approaches (30, 31). Some studies have incorporated socio-emotional competencies and personality traits as measurement tools, with significant theoretical support. However, due to the lack of empirical evidence, the validity of these tools remain very limited (32).

In order to provide an easy-to-use, self-administered instrument for measuring different socio-emotional competencies, Zych *et al*. (33) developed an instrument called the Social and Emotional Competencies Questionnaire (SECQ) designed for adolescents as well as young adults. The instrument showed adequate psychometric properties in Spanish university students and adolescents, with a reduced 16-item version. To this end, 302 university students and 1,093 adolescents participated in the study. Exploratory and confirmatory factor analysis revealed 4 factors reflecting the literature on SEL programs. These factors accounted for 62.82% of the variance in university students and 50.8% in adolescents. Similarly, the reliability score was satisfactory for both samples (university students: α = 0.87 and adolescents: α = 0.80) and a negative correlation was observed with the Toronto Alexithymia Scale (TAS-20) (34). Additionally, a negative association was identified with the Toronto Alexithymia Scale (TAS-20) (34) while a positive association with the Trait Meta-Mood scale of emotional intelligence was observed (30). In addition, significant gender differences were found. Females scored higher than males, particularly in the domain of responsible decision-making among adolescents (33). In contrast, university male participants obtained a higher level than female students in self-awareness and motivation domains.

The 16-question SECQ was also studied in student populations of 699 at a Chilean university. Findings showed that the questionnaire provided adequate psychometric properties in relation to the four factors presented in its original structure. These factors demonstrated a positive association with self-efficacy and life satisfaction, and a negative association with stress (35). These studies clearly indicate that the SECQ satisfies all the validity and reliability criteria needed to measure the social and emotional competencies of nursing students.

However, it should be underlined that the validation of a questionnaire in one country does not guarantee its validity in others. Furthermore, differences in questionnaire elements or factors can be explained by translation or cultural differences between the groups completing the questionnaire (36). Thus, it has been pointed out that cross-cultural adaptation remains the best approach for obtaining an appropriate measurement instrument (36). Consequently, in Arab countries, including Morocco, no studies have been conducted to measure social and emotional competencies within nursing training. Indeed, the need to validate an Arabic-language model to assess these competencies with a reasonable level of validity and reliability remains crucial. The purpose of the present research is to validate and adapt the SECQ in Arabic, and to examine its psychometric properties among nursing students in Morocco.

Materials and Methods

Study Design

This methodological research was carried out between January and March 2024 in a nursing training establishment in Morocco. It included translation, cultural adaptation, as well as reliability and validity assessment of the SECQ.

Forward Translation and Back-Translation

The authors applied the recommendations of the International Test Commission (2017) related to the translation and intercultural adaptation of measurement tests. It is a widely tested method for constructing reliable and valid instruments for intercultural surveys, particularly in the field of psychological and educational evaluation (39). Firstly, two experts fluent in Arabic and English, with doctorates in psychology, translated the SECQ scale from English into Arabic (forward translation). The two translations were then compared in a group discussion and a consensus was reached on both translations. Then, two other bilingual psychology professors and two nursing professors performed the reverse translation from Arabic to English. The latter checked both versions item by item to ensure semantic equivalence.

In fact, all the translators agreed that the items in the back-translated version were clear and comprehensible, enabling them to assess social and emotional skills of the students. Experienced translators were chosen for their expertise in cross-cultural validation of measuring instruments. They were also fluent in English and Arabic, and worked as clinical trainers with nursing students. Finally, the scale was verified and approved.

Face Validity

To determine linguistic validity, qualitative interviews were conducted with 15 randomly selected nursing students studying at a nursing establishment in Tetouan. These interviews were accompanied by a knowledge debriefing exercise to assess face validity. During the interviews, participants considered whether the questionnaire items and responses were appropriate and acceptable, whether they had been interpreted correctly, and whether they were relevant to their experience of nursing education. Space was provided for qualitative comments after each question. Participants were asked various questions, including: What are your initial views on this questionnaire? Are the questions and options for answers clearly presented? Do you find it easy to complete? Do you think this questionnaire is applicable to nursing students? Is it sufficiently complete? Are there other elements to add to this questionnaire?

Participants' comments were assessed to determine the questionnaire's validity. According to their responses, all participants declared that this questionnaire was appropriate, acceptable, easy to complete, and that it fully assessed the social and emotional skills necessary for the training of nursing students. Therefore, no elements were changed or added, and all questions from the Social and Emotional Competence Questionnaire were used in this study.

In accordance with the literature, a quantitative face validity known as the item impact score (item impact score = frequency (%) × importance) was carried out on a random sample of 20 students from the students at this institute. This score is determined by multiplying the frequency percentage, which represents the proportion of individuals who judged an item to be important, by the average importance score for each item. To calculate the frequency percentage, we divided all respondents who assigned an item a value of four or five on a five-point matrix, over the total number of respondents (40). Importance score reflects the average assessment of the relevance of an item on the scoring matrix, which varies from one (not important) to five (very important). Elements scored above 1.5 were deemed suitable for further analysis (33). This method enabled an in-depth assessment of face validity in our study. The average of the effects for the 16 elements was calculated as 0.39 ± 2.52.

Based on the responses obtained, the influence score for each item were between 2.41 and a maximum of 3.95. Average effect point on all 16 items was calculated as 0.39 ± 2.52. Consequently, all items were considered valid in terms of quantitative face validity according to this index based on accepted standards of quantitative face validity (less than 1.5).

Content Validity

A panel of five experts, comprising two professors of psychology, two professors of nursing and a translator, assessed the questionnaire's content validity separately. Content validity ratio (CVR) and content validity index (CVI) were applied.

Firstly, to determine CVI, we assessed every element on a four-point Likert scale using the following criteria: 1. not pertinent, 2. fairly pertinent, 3. pertinent, 4. very pertinent. CVI points were computed by adding up the agreement points for every element classified in 3rd and 4th place, subdivided into the panel of evaluators (41). Any element was considered acceptable when its CVI score was above or equal to 0.79 (41). Expert panel scores applied to measure CVI. Scores from one to two correspond to inappropriate or non-pertinent elements, while scores from three to four correspond to pertinent elements. Panelists could also add their own comments and observations for all elements.

Secondly, to determine the CVR, the panel of experts examined each element through a three-point matrix (“pertinent”, “pertinent but not important” and “not pertinent”). The content validity coefficient ranges from a value of 1 to a value of -1. A higher score reflects a stronger consensus between all the panel experts on the importance of the element in the questionnaire.

To calculate the content validity coefficient, we used the following calculation method: CVR = (Ne - N/2) / (N/2), where Ne represents the number of experts having indicated “pertinent”, and N refers to the total number of experts (41, 42). A Lawshe table provides the CVR's numerical value. The CVR minimum value for five expert groups is 0.99 (41). A CVR value of 0.78 appears acceptable. However, when it is lower, it is advisable to modify or remove the elements concerned (42). For our study, positive results were obtained for content validity.

The results obtained for content validity were positive. Indeed, 15 items received a CVI of 1.00 and one remaining item a CVI of 0.80. In terms of CVR, 15 items out of a total of 16 obtained a CVR of 1.00 and the remaining item a CVR of 0.60. According to the criteria of Polit and Beck (42), the 16 items of the Arabic version of the SECQ are acceptable. With an overall CVI of 0.98 for the SECQ, content validity was considered excellent (see Table 1).

Inter-rater reliability of the SECQ-AV was carried out on the basis of the CVI evaluation. The intraclass correlation coefficient (ICC 2.1) was used to measure relative reliability, according to the usual calculation method: (BMS - EMS) / (BMS + (k-1) EMS + k (JMS - EMS) / n). To assess absolute reliability, Standard Error of Mean (SEM) was applied, which corresponds to Within Mean Square (WMS) of ANOVA repeated measures (SEM = √WMS) (40). Similarly, the within-subject standard deviation as a percentage of the mean

(SEM %) was computed using the following method: SEM % = (SEM/mean) ×100 (40).

Table 1. Content Validity Based on Expert Assessment of the Arabic Version of the Social and Emotional Competencies Questionnaire

Items	Pertinent Note 3 or 4	Not Pertinent Note 1 or 2	I-CVI	CVR	Comments	Decisions
1	5	0	1	1	-	Adequate
2	5	0	1	1	-	Adequate
3	5	0	1	1	-	Adequate
4	5	0	1	1	-	Adequate
5	5	0	1	1	-	Adequate
6	5	0	1	1	-	Adequate
7	5	0	1	1	-	Adequate
8	5	0	1	1	-	Adequate
9	5	0	1	1	-	Adequate
10	5	0	1	1	-	Adequate
11	5	0	1	1	-	Adequate
12	5	0	1	1	-	Adequate
13	5	0	1	1	-	Adequate
14	4	1	0.8	0.6	Only one expert in five indicated that this element required greater precision and clarity, and that it was not pertinent. The CVR is not satisfied. However, no observations or propositions were made by other expert panels. The element is therefore retained at this stage. A possible modification is envisaged according to the face validity results.	Adequate
15	5	0	1	1	-	Adequate
16	5	0	1	1	-	Adequate
Mean			0.98	0.97		

I-CVI: Item-level Content Validity Index; CVR: Content Validity Ratio.

Inter-rater reliability results, based on five evaluators, indicated that the Arabic version of the SECQ (SECQ-AV) was highly reliable. The intraclass correlation (ICC2.1) produced a relative reliability of 0.99 (95% CI = 0.989 - 1.0). Results for absolute reliability showed an SEM ranging from 0.3 to 1 and an SEM% ranging from 0.9 to 5.5, demonstrating a low level of measurement error dispersion between evaluators.

Participants

Study population consisted of 400 nursing students selected by a stratified convenience sampling method. For factor analysis, participants were selected on the basis of guidelines provided by Tabachnick & Fidell (2013) (37), who recommend a sample of 20 participants per scale item for reliable factor analysis. However, Plichta & Kelvin (2013) (38) suggest that a number of 100 to 200 participants satisfies the requirements of factor analysis. With 16 items on the SECQ-AV questionnaire, 320 participants are sufficient to ensure robust psychometric validation, meeting current standards for scale validation in psychological research. To participate in this study, students had to be registered in a nursing training program and obtain informed consent. Questionnaires that were not completed or were incomplete were excluded from the study. A total of 320 students completed the requirements of this study, with 190 female students (59.37%) and 130 male students (40.63%). According to their educational level, 116 students were in the 1st year (36.25%), 107 in the 2nd year (33.44%), and 97 in the 3rd year (30.31%), with a mean age of 20.07 (SD = 1.03).

Procedure

Initially, the director of the nursing training institute was contacted to clarify the objective of this research. With his permission, the students were contacted in their classrooms by the authors, who explained the aim of the survey and the method for completing the questionnaires. In addition, they were informed that their contribution to the study was voluntary and completely anonymous, and that they were entirely free to withdraw at any time, without any consequences. After obtaining their informed consent, they completed three paper

questionnaires over a period of approximately 30 minutes. After twenty days (the period proposed to measure the stability of student responses), the SECQ-AV was administered again only among thirty randomly selected students from the first, second and third year of nursing training. The study was carried out in accordance with the principles of the Declaration of Helsinki for research involving human beings. The Director of the Higher Institute of Nursing Professions and Health Techniques of Tetouan approved the study.

Instruments

Social and Emotional Competence Questionnaire (SECQ):

Zych *et al*. (33) developed a 16-question instrument to assess four factors: self-awareness, self-management, social awareness, and decision-making. The type of response was based on a score ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency reliability was considered satisfactory, with Cronbach's alpha scores ranging from 0.65 to 0.76.

Wong and Law Emotional Intelligence Scale (WLEIS)

To assess convergent validity with the SECQ-AV, the WLEIS instrument was used in its Moroccan Arabic version (43). The latter comprises 16 items, structured into four domains, including Self Emotonal Appraisal, Others' Emotional appraisal, Use of Emotions, Regulation of Emotions. Questions are answered by assigning four points, ranging from 1 (strongly disagree) to 4 (strongly agree). The overall EI scores vary between 16 and 64, divided into three groups: low = 16-32, moderate = 32-48, and high = 48-64. The psychometric properties of the Moroccan Arabic version of the WLEIS in a sample of Moroccan students were excellent (43). For this study, a high Cronbach's alpha coefficient was obtained with a value of 0.92.

Perceived Stress Scale in Clinical Practice (PSS-CP)

To measure divergent validity with the SECQ-AV, the PSS-CP instrument was used in its Moroccan Arabic version (44). This instrument comprises 29 items, structured into two domains: 1) Interpersonal stress and workload and, 2) stress related to lack of nursing skills. Questions are answered by assigning five points, ranging from 0 (never) to 5 (very often). The overall stress scores vary between 0 and 116, divided into three groups: low = 0 -1.33, moderate = > 1.33-2.66, and high= > 2.66 - 4. The psychometric properties of the Moroccan Arabic version of the PSS-CP in a sample of Moroccan nursing students were excellent (44). In the present study, reliability coefficients were excellent, with a Cronbach's alpha of 0.86 for the first factor and 0.89 for the second factor.

Statistical Analyses

After refining and selecting the data, the proportion of missing data was reduced to less than 5% of the dataset. Thus, a list deletion method without imputation was used in the analyses. To eliminate or retain aberrant values, a comparison was made between the original mean and the mean reduced by 5%. To determine a normal distribution of responses, the univariate normality test was analyzed, particularly when *g1* and *g2* lie within the ± 1.5 interval (45). The multivariate normality test was analyzed on the basis of Mardia (46) (1970). Descriptive statistics were used, such as the mean (M), standard deviation (SD), asymmetry (g1) and kurtosis (g2) of the element. Test values were statistically significant if $P < 0.05$. Exploratory factor analysis (EFA) was used, with a sample size of 320 participants. To check the suitability of the data for exploratory factor analysis, the Kaiser-Meyer-Olkin (KMO) test was used, whose minimum value must be greater than $KMO > 0.8$, as well as Bartlett's sphericity test, whose statistical significance is assumed to be $P < 0.05$.

Then, a confirmatory factor analysis (CFA) was performed to determine the structure of the items distributed according to each factor, determine the explanation of variance and examine the quality of fit between the data and the model obtained. To this end, absolute, parsimonious and incremental fit indices were employed, including the Comparative Fit Index (CFI), the Goodness of Fit Index (GFI) and the Tucker Lewis Index (TLI) with values above 0.90 (48,49), the Standardized Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA) with a value below 0.08 (a 90% confidence interval) (49). Factor loading is considered high when values are above 0.50, as they explain more than 25% of the variance extracted from each questionnaire item. For this purpose, weighted least squares (WLS) extraction and obliminal rotation were applied.

In accordance with the recommended standards for conducting CFA, the weighted least squares (WLS) extraction method was applied because of the ordinal nature of the items in our questionnaire, their average levels of difficulty and discrimination, a sufficient number of response categories (minimum 5), and an approximately normal distribution (47). This method proved to be more effective and robust in the evaluations, particularly for complex solutions. Factor rotation involves virtually rotating the factor axes around the point of origin in order to redistribute the variance to be explained more fairly. In our study, the aim was to obtain factors that make up a better-fitting model, and for these factors to be correlated with each other. The oblimin rotation was therefore proposed. An item was considered to be a component of a factor if its factor load (λ) had a value greater than $\lambda > 0.30$ (47).

To assess the invariance of the SECQ-AV as a function of age, gender, education level and socio-economic status, a multi-group CFA was performed on the entire sample, with the progressive inclusion of constraints such as configuration invariance, metric invariance and scalar invariance. In the first phase of each multi-group CFA process, configuration invariance was measured, meaning that all factor loadings and item intercepts were

freely modifiable across groups. In the second phase, metric ("low") variance was measured, meaning that factor loadings were constrained to be identical across groups. In the third phase, scalar (i.e. strong) invariance was applied, in which factor loadings and element intercepts were imposed on all groups. Comparison of the nested models (i.e., metric vs. configural; scalar vs. metric) was carried out using CFI, RMSEA and SRMR modifications, as well as the Satorra-Bentler $\chi 2$ difference test. The acceptability thresholds of the RMSEA (< 0.08) and CFI (> 0.9) indicators were used as acceptance criteria for an increasingly constrained adjustment model (ΔCFI < 0.01 and ΔRMSEA < 0.02 in absolute value) (48). Internal consistency of the questionnaire was evaluated with coefficients of Cronbach's alpha (α), McDonald's Omega (ω), Gutman's $\lambda 6$ and Greatest Lower Bound (GLB) (50). A value above 0.9 was considered excellent, and acceptable if values were above 0.7 (51). To evaluate the absolute stability of the questionnaire, Pearson correlations were determined over a twenty-day interval from a sample of 30 students. Test-retest reliability is deemed acceptable if test scores are above 0.7 (52). Construct validity is analyzed on the basis of Pearson correlations to explore the association of the various factors extracted with the tool's overall score.

To determine the existence of differences in nursing students' levels of emotional and social competence according to gender and level of education, independent Student's t-test and Tukey's one-way post hoc test (analysis of variance) were employed. Cohen's *d* coefficient was applied to assess the effect size of gender comparisons. Recommended standard values for this coefficient were defined as follows: low = 0.2, moderate = 0.5, high = 0.8 (53). The partial beta-squared coefficient (η_p^2) was also applied as an indicator of effect size for comparisons between grade levels. Recommended standard values for partial beta-squared were set as follows: low $\eta^2 = 0.01$, moderate $\eta^2 = 0.06$, high $\eta^2 = 0.14$ (53). In terms of convergent and divergent validity, a correlation between the Arabic version of the WLEIS, the Arabic version of the PSS-CP, and the SECQ-AV scores was calculated using Pearson's test and the intraclass correlation coefficient to adjust for measurement errors. The data were analysed using the Statistical Package for the Social Sciences (SPSS) software (version 23), and structural equation modelling (SEM) was carried out using AMOS SPSS software (version 23).

Paper data are stored in secure locked filing cabinets. Electronic data are also stored securely on a server, with no possibility of downloading or copying via unencrypted portable devices (e.g. 'USB sticks'). Storage of this particular data is limited to a maximum of five years from the date of final publication. Selective access will only be granted to members of the research team.

Results

Descriptive Analysis

Descriptive statistics for test items showed that skewness and kurtosis values exceeded acceptance limits for univariate normality of distribution (1.5).

For multivariate normality of score distribution, Mardia's test for g1 and g2 indicates statistically significant results (P < 0.05). A significant correlation was established between the elements and the total questionnaire score, explaining the need to retain all the elements (Table 2).

Structural Validity

Exploratory Factor Analysis (EFA)

Data were first checked by the Kaiser-Meyer-Olkin (KMO) test, which showed a KMO value = 0.91 above the recommended value of 0.60 (Kaiser, 1974) and can be described as excellent, indicating that the model is suitable for EFA. Bartlett's sphericity test for the 16 items revealed a value of $\chi 2 = 7381.8$, deemed extremely significant (P < 0.001) and rejecting the null hypothesis of no relationship between items.

According to the results, the EFA of the SECQ-AV questionnaire resulted in a four-factor structure with 16 items having Cronbach's alpha values between 0.88 and 0.96. The variance explained by this factorial model was 38.7%. The Cronbach's alpha values for the self-awareness, self-management, social awareness, and decision-making factors were 0.92, 0.91, 0.90, and 0.92, respectively. These high values indicate excellent reliability, showing that the elements of each factor are directly correlated and perfectly measure the same concept (Table 3).

Confirmatory Factor Analysis (CFA)

Two adjustment models were analysed for the CFA. Table 4 shows the fit models for the sample analysed. The best-fitting model for the original 16 items was the 4-factor correlated model derived from the CFA results. This model showed excellent fit, with fit indices above the recommended thresholds ($\chi 2$/df = 2.26, CFI = 0.98, GFI = 0.96, TLI = 0.96, SRMR = 0.061, RMSEA [90% CI] = 0.062), whereas the 3-factor version did not show good fit indices.

The standardized factor loadings obtained were all very high, with values above 0.50, showing a high correlation between each factor and the concept assessed (Figure 1). Internal consistency of the scale was also very good (α = 0.92).

Table 2. Descriptive Analysis of the Social and Emotional Competencies Questionnaire- Arabic Version Items and Multivariate Normality

Items	*M*	SD	Skew	Kurtosis	*r* (item-total)
1	3.53	1.43	6.78	24.87	0.82
2	4.15	1.66	7.30	36.59	0.79
3	3.74	1.38	8.22	74.85	0.86
4	3.67	1.41	6.29	23.92	0.78
5	4.28	1.83	9.95	93.89	0.76
6	3.87	1.35	7.16	36.27	0.81
7	4.31	1.70	7.63	36.86	0.77
8	3.69	1.47	8.27	74.89	0.86
9	4.35	1.91	6.93	25.61	0.83
10	4.15	1.73	8.44	76.11	0.79
11	3.66	1.36	6.67	24.38	0.75
12	3.98	1.33	7.59	36.48	0.84
13	4.29	1.81	9.47	93.53	0.81
14	3.74	1.42	6.94	93.98	0.83
15	4.20	1.76	8.22	74.92	0.79
16	3.65	1.39	9.26	93.29	0.81
Mardia	-	-	2573.12*	5992.6*	-

Note. *P < 0.05. M = Mean; SD = Standard Deviation; g1 = Skewness; g2 = Kurtosis; r (ítem-total) = item-total correlation analysis.

Table 3. Exploratory Factor Analysis of the Social and Emotional Competencies Questionnaire-Arabic Version

Items	Factor Loadings			
	F1	F2	F3	F4
4	0.94			
2	0.96			
1	0.91			
3	0.89			
6		0.91		
8		0.94		
5		0.88		
7		0.90		
10			0.89	
12			0.92	
11			0.91	
9			0.90	
13				0.88
14				0.94
16				0.89
15				0.90
Percentage of variance	39%	38%	41%	37%

Extraction: Weighted Least Squares; Rotation: Oblimin

Table 4. Confirmatory Factor Analysis of the Social and Emotional Competencies Questionnaire-Arabic Version

Model	χ2/df	CFI	GFI	TLI	RMSEA (IC 90 %)	SRMR
Three factors	2.97	0.91	0.90	0.92	0.071[0.49-0.55]	0.068
Four factors	2.26	0.98	0.96	0.96	0.062[0.41-0.47]	0.061

CFI = Comparative Fit Index; TLI = Tucker Lewis's index; RMSEA = Root Mean Square Error of Approximation

Standardized and non-standardized factor loadings, standard errors, R-squared (R^2) and T-values for all paths in the four-factor model of the SECQ-AV were calculated for each factor (Table 5). Based on the R^2 coefficients (ranging from 0.46 to 0.78), T-values (greater than 1.96; $P < 0.05$) and robust factor loadings for each latent construct (greater than 0.50), it can be concluded that all paths are significant, demonstrating a strong relationship between each factor and the construct being assessed. The internal consistency of the scale is also excellent ($\alpha = 0.92$) (Table 5).

Table 5. Standardized and Non-Standardized Factor Loadings, Standard Errors and T-Values for each Question in the Social and Emotional Competencies Questionnaire-Arabic Version

Path		R^2	Standardized Factor Loading *β*	Un-Standardized Factor Loading *B*	SE	T-Value
Self-awareness	Item 4	0.48	0.74	1.21	0.06	21.22*
	Item 2	0.57	0.78	1.22	0.07	22.32*
	Item 1	0.69	0.82	1.26	0.06	24.45*
	Item 3	0.49	0.75	1.19	0.04	21.19*
Self-management	Item 6	0.61	0.78	1.24	0.06	21.87*
	Item 8	0.72	0.84	1.28	0.05	19.73*
	Item 5	0.50	0.76	1.18	0.05	17.35*
	Item 7	0.63	0.82	1.26	0.06	20.39*
Social-awareness	Item 10	0.78	0.88	1.36	0.07	23.93*
	Item 12	0.74	0.82	1.24	0.07	28.51*
	Item 11	0.52	0.74	1.02	0.04	24.89*
	Item 9	0.54	0.76	1.18	0.06	26.10*
Decision-making	Item 13	0.63	0.78	1.23	0.04	21.93*
	Item 14	0.75	0.82	1.29	0.06	24.56*
	Item 16	0.46	0.70	1.19	0.04	19.87*
	Item 15	0.56	0.74	1.22	0.04	23.64*

*P < 0.05; R^2 = R-squared; SE = Standard Errors

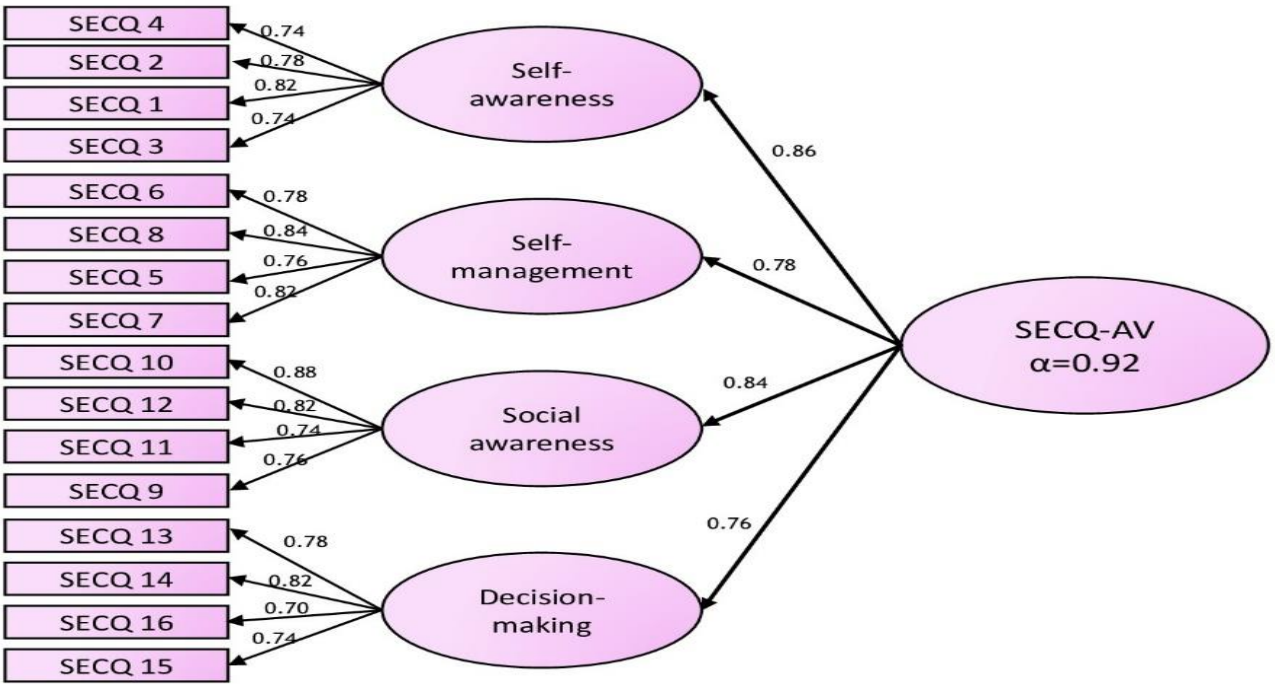

Figure 1. Structural Model of the Social and Emotional Competencies Questionnaire-Arabic Version with Confirmatory Factor Analysis and Internal Consistency Results

Assessment of Measurement Invariance

The invariance results of the multigroup CFA of the questionnaire for the entire sample indicated that all ΔRMSEA values were below the threshold of 0.02, corresponding to a better model fit with the addition of parameter constraints. Full configural and metric measurement invariance was confirmed for the entire questionnaire across age groups, gender groups and socio-economic status groups. Full scalar measurement invariance was also confirmed in all analyses (Table 6).

Table 6. Measurement Invariance for the Social and Emotional Competencies Questionnaire-Arabic Version

Invariance Model	χ^2 (df)	CFI	RMSEA (90% CI)	SRMR	$\Delta\chi^2$ (Δdf)	ΔCFI	ΔRMSEA	ΔSRMR	Invariance?
Testing invariance by age group: 18–20 years (n = 167) vs. 21–23 years (n = 153)									
Configural	1,961.68 (57) **	0.923	0.073 (0.089, 0.096)	0.041	-	-	-	-	Yes
Metric	2,046.43 (71) **	0.935	0.075 (0.085, 0.091)	0.054	51.92 (14) **	0.002	0.004	0.006	Yes
Scalar	2,110.77 (75) **	0.931	0.071 (0.086, 0.092)	0.057	240.50 (14) **	0.003	0.002	0.007	Yes
Testing invariance by gender group: Female (n = 190) vs. Male (n = 130)									
Configural	1,872.22 (28) ***	0.914	0.076 (0.088, 0.093)	0.040	-	-	-	-	Yes
Metric	2,052.51 (34) **	0.937	0.069 (0.089, 0.094)	0.045	46.18 (6) **	0.004	0.003	0.006	Yes
Scalar	2,587.16 (40) **	0.928	0.066 (0.088, 0.094)	0.048	62.55 (12) **	0.005	0.006	0.005	Yes
Testing invariance by level of education: 1st year (n = 116), 2nd year (n = 107), 3rd year (n = 97)									
Configural	1,872.59 (57)**	0.947	0.064 (0.102, 0.061)	0.035	-	-	-	-	Yes
Metric	2,067.64 (74) **	0.943	0.062 (0.097, 0.105)	0.039	34.89 (18) **	0.005	0.007	0.004	Yes

Scalar	2,263.65 (92) **	0.937	0.074 (0.090, 0.097)	0.042	48.35 (18) **	0.005	0.006	0.005	Yes
Testing invariance by level of socio-economic status: low (n = 23), Medium (n = 278), High (n = 19)									
Configural	1,868.41 (76) **	0.944	0.072 (0.090, 0.097)	0.039	-	-	-	-	Yes
Metric	1,927.76 (97) **	0.926	0.074 (0.081, 0.087)	0.043	47.30 (21) **	0.004	0.006	0.005	Yes
Scalar	2,150.47 (78) **	0.919	0.079 (0.076, 0.082)	0.052	41.48 (21) **	0.005	0.004	0.006	Yes

CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root-Mean Square Residual; Models were teste in full sample (N = 320). Note. *P < 0.05, **P < 0.01

Construct Validity

The results revealed significant correlations between the various factors in the model. The analysis showed that the four-factor model was well-suited to the results, and that the questionnaire enabled latent variables to be measured efficiently and accurately. All the factors in the model showed satisfactory to excellent reliability (self-awareness = 0.81, self-management = 0.78, social awareness = 0.80, decision-making = 0.84), as did the total score of the SECQ-AV questionnaire (SECQ-AV Total = 0.92).

Internal Consistency Reliability

The results of McDonald's ω, Cronbach's α, Guttman's λ6 and Greatest Lower Bound tests showed satisfactory results (between 0.72 and 0.89), attesting to the questionnaire's good internal consistency. Furthermore, when we assess the contribution of each item to the reliability index results, these items show high values (between 0.77 and 0.94), confirming the need to retain them in their entirety on the questionnaire (Table 7).

Table 7. Internal Consistency Values for All items of Social and Emotional Competencies Questionnaire- Arabic Version

Items	McDonald's ω	Cronbach's α	Guttman's λ6	GLB
1	0.86	0.89	0.89	0.91
2	0.83	0.85	0.87	0.90
3	0.79	0.81	0.84	0.89
4	0.87	0.89	0.91	0.93
5	0.81	0.83	0.84	0.88
6	0.85	0.87	0.90	0.92
7	0.84	0.85	0.87	0.89
8	0.77	0.79	0.81	0.84
9	0.82	0.86	0.89	0.91
10	0.88	0.90	0.92	0.94
11	0.84	0.86	0.88	0.91
12	0.79	0.81	0.84	0.86
13	0.75	0.78	0.81	0.88
14	0.87	0.89	0.92	0.94
15	0.86	0.88	0.90	0.92
16	0.83	0.87	0.91	0.93

Guttman et Greatest Lower Bound = GLB

Test–Retest Reliability

Within 20 days of the initial data collection (1st test), 30 students from the first, second, and third years were retested (2nd test). These students were randomly selected from the main study sample. The Pearson correlation coefficient was calculated on the basis of the SECQ-AV results obtained in the first and second tests, giving an r_{tt} = 0.92%. Next, the intraclass correlation coefficient (ICC) was calculated, giving a score of 0.89 and a 95% CI [0.72, 0.94], demonstrating the excellent reliability of the responses obtained. The results of the analyses of the four SECQ-AV factors are as follows: self-awareness (r_{tt} = 0.88, P < 0.01, ICC = 0.86, 95% CI [0.76, 0.94]), self-management (r_{tt} = 0.86, P < 0. 01, ICC = 0.88, 95% CI [0.74, 0.92]), social awareness (r_{tt} = 0.94, P < 0.01, ICC = 0.92, 95% CI [0.82, 0.92]), decision-making (r_{tt} = 0.86, P < 0.01, ICC = 0.92, 95% CI [0. 74, 0.94]).

SECQ-AV Scores and Demographic Characteristics

According to the results, there were no statistically significant correlations between students' age, marital status, baccalaureate grade, socio-economic status and the four factor scores as well as the total SECQ-AV score. Depending on gender, girls scored significantly higher than boys on all four factors and on the SECQ-AV total score (t = 0.76, P < 0.05). Similarly, statistically significant differences were found for the four factors and for the SECQ-AV total score according to the study level (F = 9.78; P < 0.05). Indeed, third-year students showed higher levels of emotional and social competencies (M = 48.69, SD = 8.25) compared with second-year (M = 44.66, SD = 7.24) and first-year (M = 30.03, SD = 5.76) students (Table 8).

Table 8. Results for each Demographic Characteristic of the Social and Emotional Competencies Questionnaire-Arabic Version

Variables	Self-Awareness	Self-Management	Social Awareness	Decision-Making	Overall SECQ-AV
Age	r = 0.031	r = 0.041	r = 0.027	r = 0.033	r = 0.032
Marital status	r = 0.052	r = 0.029	r = 0.046	r = 0.055	r = 0.045
Baccalaureate mark for admission to the institute	r = 0.049	r = 0.056	r = 0.038	r = 0.042	r = 0.046
Sexe	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**
Female	13.17 ± 2.81	12.08 ± 2.41	12.63 ± 2.56	11.29 ± 2.34	49.17 ± 7.54
Male	12.45 ± 2.58	11.51 ± 2.77	10.47 ± 2.04	11.84 ± 2.11	45.27 ± 7.37
t-test	2.13*	2.21*	2.77*	1.96*	2.94*
Cohen's d	0.32 [0.18−0.45]	0.30 [0.16−0.43]	0.38 [0.24−0.51]	0.31 [0.17−0.44]	0.36 [0.24−0.51]
Education level	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**
1st year	9.45 ± 1.89	9.85 ± 1.92	9.39 ± 1.51	9.34 ± 1.46	38.03 ± 5.76
2nd year	11.69 ± 2.41	11.57 ± 2.48	10.62 ± 2.02	10.78 ± 2.06	44.66 ± 7.24
3rd year	13.21 ± 2.87	12.35 ± 2.91	11.67 ± 2.43	11.46 ± 2.58	48.69 ± 8.25
F-test	6.42*	6.19*	5.78*	5.94*	9.78*
ηp 2	0.04 [0.02−0.06]	0.04 [0.02−0.06]	0.02 [0.00−0.02]	0.02 [0.00−0.02]	0.06 [0.04−0.10]
Socio-economic status	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**	**M ± SD**
Low	11.49 ± 2.72	11.08 ± 2.31	10.61 ± 2.47	10.39 ± 2.26	43.57 ± 6.22
Medium	11.48 ± 2.36	11.51 ± 2.67	10.59 ± 1.57	10.15 ± 2.29	43.73 ± 5.72
High	11.51 ± 2.28	11.23 ± 2.51	10.39 ± 2.29	10.25 ± 2.19	43.38 ± 5.34
F-test	0.70	0.89	0.69	0.11	0.83
η_p^2	NA	NA	NA	NA	NA

Pearson correlation = r; Mean = M; Standard Deviation = SD; Social and Emotional Competence Questionnaire- Arabic version = SECQ-AV; *P < 0.05; η_p^2 = partial square effect size; F-test = Tukey's post-hoc test; NA indicates 'not applicable'

Convergent and Divergent Validity

Correlation analysis was performed to confirm the convergent and divergent validity of the SECQ-AV. The results show that the SECQ-AV factors are positively and significantly correlated with the four factors of Wong and Law's Emotional Intelligence Scale, with coefficients ranging from 0.45 to 0.59 (P < 0.05), thus confirming its convergent validity. On the other hand, the factors of the Perceived Stress Scale in Clinical Practice correlated negatively and significantly with all SECQ-AV factors, ranging from -0.39 to -0.61 (P < 0.05), confirming divergent validity.

Discussion

The purpose of this research was to measure the psychometric properties of the SECQ-AV with a sample

of Moroccan nursing students. It is the first study to assess this questionnaire's statistical characteristics in the Arabic language, offering useful results for improving the SECQ-AV's cross-cultural suitability. In general, the findings support the conclusion that the SECQ-AV is an appropriate instrument for measuring social and emotional competencies.

The data from the EFA and CFA showed that the SECQ-AV comprised four-factor, with four elements each and good internal consistency. Cronbach's alpha estimates and correlations between questionnaire items were good for most of the different subscales. With regard to test-retest reliability, the results were significant ($P < 0.05$), indicating a strong correlation over time. Additionally, the SECQ-AV demonstrated satisfactory convergent and divergent validity in relation to the WLEIS and PSS-CP scores ($P < 0.05$).

Comparing these results with some previous research on factor analysis, the psychometric properties of the Spanish version of the SECQ on a sample of Chilean university students produced similar results to those obtained in our study, showing a four-factor factor structure and high degrees of internal consistency (35). However, a study carried out on a population of young students in Spain indicated that the SECQ, in its Spanish version, presents a five-factor model whose elements are distributed in a pattern similar to that reported in the original model (55). This finding was corroborated by another study conducted by Zhou and Ee (56), which also featured a five-factor structure, with perfectly identical item grouping, adequacy and reliability indices. These differences are probably due to characteristics inherent in the nature of the program-training, or to differences in translation. In this respect, it is possible that a difference linked to the absence of systematic training in socio-emotional competencies in the curriculum could have a decisive influence on students' perceptions. In our case, the questionnaire includes four factors (self-awareness, self-management, social awareness and decision-making). These factors represent the main soft skills required in nursing training (17). Therefore, the SECQ-AV aroused the curiosity of these students to assess their socio-emotional skills required for the nursing profession.

The results of the questionnaire's internal consistency, ranging from 0.88 to 0.96, well above the acceptable value of 0.70, attest to a strong internal consistency between the items of each factor of the SECQ-AV and that the latter correctly assesses the same concept of social and emotional competencies of nursing students. The survey also found that, in general, nursing students evaluated their behavior in a positive light regarding the questionnaire as a whole. This positive conclusion is in line with that of other studies, notably Kim (57) and Portela-Pino *et al*. (55), who reported the high reliability of the SECQ, with values between 0.88 and 0.91. For their part, Aguilar *et al*. (58) and Resurrección *et al*. (59) obtained satisfactory reliability for all SECQ factors, including: self-awareness = 0.72, 0.64; social awareness = 0.76, 0.72; self-management = 0.80, 0.73; relationship management = 0.72, 0.69; and responsible decision-making = 0.82, 0.76, respectively.

The factor loadings obtained in our study were satisfactory, with no factor changes or deletions. Similarly, a correlation of between 0.42 and 0.84 was observed for all the SECQ-AV factors, indicating a strong correlation with the general scale, in agreement with the model of Zych *et al*. (33). However, while certain factors obtained high scores in this study, those relating to self-management and decision-making recorded moderate levels. This observation is also found in the research by Zhou and Ee (56), Petric and Szamoskozi (60) and Aguilar *et al* (58). The same applies to the study by Zych *et al.* (33), revealing moderate scores for self-management and motivation factors. Indeed, in Rahayu and Mustikasari's study (61) of students in three different Asian communities, the lowest-scoring factors in each group were self-management and decision-making, while the highest-scoring factors were self-awareness and social awareness. These findings are consisitent with those reported by Zhou and Ee (56) and Aguilar *et al*. (58). However, Rahayu and Mustikasari (61) reported that decision-making was the highest-rated factor in one of the groups in their study, while self-awareness was the highest-rated factor in another group.

This study also assessed the acceptability of the proposed models using chi-square, degree of freedom, CFI, GFI, TLI, SRMR and RMSEA values. The results demonstrated that the four-factor model was the best fit for this questionnaire, as shown by a non-significant chi-square test ($\chi2/df = 2.26$) and acceptable fit indicies: CFI = 0.98, GFI = 0.96, TLI = 0.96, SRMR = 0.061, RMSEA [90% CI] = 0.062. However, according to a study carried out by Jabeen and Maqsood (62), with a view to adapting and validating the Socio-Emotional Competence Questionnaire (SECQ) in Urdu in a sample of Pakistani adolescents, CFA results supported the five-factor structure over other models for the Urdu version with fit indices above the recommended thresholds ($\chi2/df = 1016.334/263$): NFI = 0.904, IFI = 0.927, TLI = 0.917, CFI = 0.927 and RMSEA = 0.056). And this CFA result was the same as for the original SECQ study. In another study, Petric and Szamoskozi (60) tested the five-factor structure on a sample of 546 individuals in Hungary, the results of which also showed an acceptable fit to the limit of the CFA model as follows: $\chi2 = 733.957$ ($df = 265$, $p < 0.001$), $\chi2/df = 2.77$, RMSEA = 0.056, CFI = 0.89, and IFI = 0.89. This also supports the idea that each country's culture is unique and can lead to changes in the expression of social and emotional competencies in its population (63).

When compared with other research on differences in students' socio-demographic characteristics, the results are consistent with some studies that have highlighted the fact that female students have higher social and

emotional competencies than male students (64). Another research also highlighted that female nursing students have high communication, empathy, emotional intelligence, and problem-solving skills, enhancing their skills and effectiveness on placements and enabling them to withstand difficult events and create harmonious relationships between nursing colleagues and patients (65).

Moreover, the study by Di Lorenzo *et al*. (66) showed that third-year university nursing students had more developed social and emotional skills and could handle stressful situations better than first-year students. This finding was corroborated by Ranasinghe *et al*.'s (67) study of a Sri Lankan population of medical students. However, the study by Figueroa-Varela and Rodríguez Vera (35) did not reveal any significant differences in other SEC-Q factors and demographic characteristics. These differences in the gender and level of study of nursing students seem to stem from the specific characteristics of each country's vocational training systems, cultural diversity, and differences in the sample.

As for the lack of statistically significant differences between age and mean SECQ-AV scores, this could be explained by the relatively narrow age range of our sample. Future research is needed to examine the issue of differences in age and other socio-demographic characteristics, as well as their impact and implications for personalized nursing education.

Findings from the present study confirm the concurrent validity of the SECQ-AV, insofar as higher scores on the SECQ-AV are negatively associated with perceived clinical stress factors measured by the PSS-CP (44) and positively associated with the four EI factors measured by the WLEIS (43). This indicates that by increasing each of the components of self-awareness, self-management, social awareness, and decision-making, academic stress is reduced. This finding is consistent with studies showing that higher scores on SECQ-related measures, including the EI, are negatively associated with PSS-CP scores in nursing students (44, 68). To our knowledge, this is the first study to examine the SECQ-AV, PSS-CP and WLEIS concurrently. Future studies should continue to apply perceived stress and EI assessment tools such as the PSS-CP and WLEIS alongside the SECQ-AV to further confirm the concurrent validity of the SECQ-AV and these assessment tools.

In terms of the practical implications of this research, the nursing education system pays particular attention to developing the skills necessary for students to function well socially and emotionally (17). In this context, it is crucial that professors have access to assessment tools capable of identifying those nursing students who benefit most from training in social and emotional competencies and to assess them objectively. In addition, the ability of professors to measure these competencies is complicated by the fact that many freely available instruments have not been subjected to rigorous psychometric studies. Our study results confirm that the 16-item SECQ-AV questionnaire is a reliable, simple and easily understood tool suitable for nursing students, which can guide professors in assessing their students' social-emotional competencies. By applying evidence-based standards of practice, the psychometric qualities of the SECQ questionnaire can be explored in other Arab countries.

Limitation

This study shows that the Arabic version of the SECQ-AV has good psychometric properties and concomitant validity. However, there are some limitations that should be noted. Firstly, this research was carried out on self-assessment tools, and the answers to such questions may be influenced by factors of social desirability. The use of a mixed-method approach in future research, incorporating a qualitative method to complete the assessment of social and emotional competencies, could limit this bias and reveal other related elements that could be added to this questionnaire. Next, the sample size was 320 nursing students, which is considered sufficient according to Tabachnick & Fidell's criteria for factor analysis (37). However, this sample size does not allow the results to be generalized to larger populations. Further cross-sectional and complementary studies on other samples, such as medical students, health technician students or midwives, would be of interest to carry out differential analysis and evaluation of the questionnaire so as to provide further clarification on the nature and factorial structure of social and emotional competencies. Furthermore, despite the rigorous translation and cultural adaptation procedure implemented in this study, cross-cultural differences between different Arabic-speaking populations need to be investigated in more detail. Indeed, the expression of social and emotional competencies may vary considerably from one Arabic-speaking country to another, which could affect the scale's performance in other cultural contexts.

Finally, limitations to the test-retest reliability were identified, linked in particular to the fact that it was the first investigation to examine the test-retest reliability of the SECQ-AV. Although a 20-day interval is appropriate for re-testing the questionnaire, it is not sufficient to minimize the factors likely to reduce test-retest reliability. In order to correct measurement errors and improve test-retest reliability, it will be important to use statistical methods such as attenuation correction and the intraclass correlation coefficient.

Conclusion

This study shows that the SECQ-AV is a suitable questionnaire for assessing the social and emotional skills of nursing students. The SECQ-AV was developed to assess four factors of social and emotional competence, namely self-awareness, self-management,

social awareness and decision-making. The findings of the validity, reliability and factor structure analyses provide excellent support for using the SECQ-AV in clinical research and for its application in nursing education. The SECQ-AV could potentially be used to identify deficits in emotional and social competencies in certain populations, notably students enrolled in health science teaching courses and medical students, with a view to developing appropriate intervention or prevention programmes in this area.

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Conflict of Interest
None.

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Social and Emotional Competence Questionnaire (SEC-Q)

نشكركم على تعاونكم معنا في هذا البحث، الذي يهدف إلى التحقق من جودة تبيئة وتكييف أداة لقياس الكفاءات الاجتماعية والعاطفية لطلاب التمريض في السياق التعليمي المغربي باللغة العربية .وبناء عليه، نود أن تكون إجاباتك صادقة، لأنها ستساهم في تجويد البحث العلمي الذي نحن بصدد إنجازه شاكرين حسن تعاونك معنا بالإجابة عن هذا الاستبيان كله.

We would like to thank you for your cooperation in this research, which aims to verify the quality of the adaptation of a questionnaire to measure the social and emotional competencies among nursing students in the Moroccan educational context in the Arabic language.

We therefore hope that your answers will be truthful, as they will help to improve the scientific research we are about to carry out. Thank you for your cooperation in completing this questionnaire.

Items	Strongly disagree=1	Somewhat disagree=2	Neither agree nor disagree=3	Somewhat agree=4	Strongly agree=5
1. I know how to label my emotions (أستطيع التمييز بين المشاعر التي أشعر بها)					
2. I am aware of the thoughts that influence my emotions (أدرك جيدًا الأفكار التي تؤثر على مشاعري)					
3. I differentiate one emotion from another (استطيع التميز بين مشاعري و مشاعر الآخرين)					
4. I know how my emotions influence what I do (أستطيع التحكم في مشاعري و سلوكي)					
5. I know how to motivate myself (أقدر على تحفيز نفسي وتشجيعها)					
6. I have my goals clear (أعرف جيداً أهدافي التي أريد تحقيقها)					
7. I pursue my objectives despite the difficulties (أسعى جاهدًا لتحقيق أهدافي رغم التحديات والصعوبات)					
8. I know what people expect from others (اعلم جيدًا ما ينتظره الأفراد من الآخرين)					
9. I pay attention to the needs of others (أبدي اهتمامًا واضحًا لمتطلبات واحتياجات الآخرين)					
10. I usually know how to help others who need that (اعرف جيدًا طرق وأساليب مساعدة المحتاجين)					
11. I have good relationships with my classmates or workmates (لدي علاقات جيدة تربطني بزملائي في المؤسسة وفي مكان العمل)					
12. I usually listen in an active way (أستمع دائمًا بشكل فعال لأراء وأفكار الآخرين.)					
13. I offer help to those who need me (أساعد دائما الآخرين على تحقيق أهدافهم)					
14. I make decisions analyzing carefully possible consequences (أتخذ قراراتي بعناية، بعد تقييم الأثار المترتبة عليها)					
15. I usually consider advantages and disadvantages of each option before I make decisions (أحرص عادة على التفكير في الإيجابيات والسلبيات قبل اتخاذ القرار)					
16. I do not make decisions carelessly (لا أصدر أية قرارات بدون سابق تفكير)					