

Adaptation and Validation of the Self-Administered Foot Health Assessment Instrument for Portuguese Undergraduate Nursing Students

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Background and Purpose: To translate and adapt the Self-Administered Foot Health Assessment Instrument from English to European Portuguese and explore its reliability and validity among undergraduate nursing students in Portugal. **Methods:** The study was divided into two phases. First, the translation and cross-cultural adaptation followed Beaton's guidelines, with a pretesting of the final version with 30 students. The validation process used the content validity index with a minimum of 75% agreement between experts and Cronbach's alpha for internal consistency. The second step provided the results of the principal component analysis and confirmatory factor analysis, which were performed to study the overall fit of the model and item correlations. The STROBE checklist was used. **Results:** The Portuguese version, *Instrumento de Auto-Avaliação da Saúde do Pé (IAASP)*, showed an overall acceptable evidence regarding content validity and internal consistency. The factor analysis results suggested removing the "Foot pain" dimension from the original scale. **Conclusions:** IAASP is suggested to maintain the original 22-item structure, with four domains, "Skin health," "Nail health," "Foot structure," and "Foot pain," being an initial reliable version with interest to measure the current foot health of nursing students. Future studies should contribute to IAASP's continuous improvement.

Keywords: foot health; nursing students; psychometric properties; research in practice; translation

Foot and ankle disorders among nursing professionals are common Work-Related Musculoskeletal Disorders (WRMSD; Abledu & Offei, 2015). However, studies reporting this condition on nurses and students are scarce (Stolt et al., 2017). The prevalence of WRMSDs among nursing students can be as high as 83% (Moodley et al., 2020), with reports of worsening health since starting nursing school (Martin et al., 2022). Moreover, the physical demands during nursing education are an important factor associated with students' late dropout (Bakker et al., 2019). Likewise, foot and ankle disorders contributed to an intention to leave rate of 39% among nursing students and an actual dropout rate of 3.4% (Kox et al., 2022).

Exposure to standing environments is one of the most prominent risk factors for developing these disorders. According to a recent study, constant exposure to prolonged standing has a 1.7-fold increase in the risk of foot pain (Anderson et al., 2017), one of this population's most complex and frequent disorders (Bernardes et al., 2023). Recent studies reported that nursing students walk more than 30 hours weekly in the clinical environment (Cilar et al., 2017), thus increasing the risk of rapid depletion of foot and ankle health.

In this sense, prevention and self-assessment practices are priority areas to increase nursing students' occupational health and quality of life (Ou et al., 2021). Moreover, gaining knowledge about nursing students' resilience, sense of wellness, and well-being is essential for developing tailored educational initiatives for disease prevention (Spurr et al., 2021).

Furthermore, self-reported health is related to well-being in nursing students and may help develop targeted interventions within nursing educational programs (Martin et al., 2022). Nevertheless, currently, there is a lack of self-reported instruments to assess foot health explicitly targeting undergraduate nursing students in Portugal.

BACKGROUND

The Self-Administered Foot Health Assessment Instrument (S-FHAI) was developed in Finland by Stolt et al. (2017). Following its early development, S-FHAI had subsequent exploratory studies of its characteristics throughout the years (Stolt et al., 2012, Stolt et al., 2017, 2023), with mild changes occurring in its structure. The S-FHAI was developed in Finnish and later translated using a standard forward-back translation (BT) procedure to English.

S-FHAI is a self-reported instrument that measures a person's current level of foot health, being structured into 22 items divided into four dimensions: Skin health (11 items), Nail health (4 items), Foot structure (5 items), and Foot pain (2 items). All items are dichotomous ("yes" or "no" response), except for item 22, which is a Likert-type scale ranging from "1" (no pain) to "5" (worst imaginable pain). The output of S-FHAI is the Foot Health Index, ranging from 0 to 46, with higher scores meaning worst foot health. This instrument is based on the Foot Health Assessment Instrument (FHAI; Stolt et al., 2013), initially developed for nurses to assess foot health in older people.

The S-FHAI has been used recently to evaluate the prevalence of foot health in older people with rheumatoid arthritis (Stolt et al., 2020), foot health problems in people living with other rheumatoid conditions (Stolt et al., 2023), and foot health of nurses (Stolt et al., 2017).

While the original FHAI (Stolt et al., 2013) has shown reasonable internal consistency values ($\alpha = .64$), the S-FHAI versions used with people with rheumatoid conditions and nurses showed a slight improvement, with medium Cronbach's alpha values, .720 and .721, respectively. Moreover, Rasch's analysis showed that the S-FHAI is a unidimensional scale with an acceptable item fit. High item separation demonstrated clear discrimination between the items. Person fit and person separation were identified as low, meaning restricted separation among different respondents (Stolt et al., 2021).

This study aimed to translate and adapt the S-FHAI from English into European Portuguese and explore its reliability and validity among undergraduate nursing students in Portugal.

METHODS

Design

This is a cross-sectional methodological study (Polit & Beck, 2008) with two main steps: (a) translation and cross-cultural adaptation for European Portuguese and (b) psychometric analysis of the instrument's characteristics. The STROBE checklist was used to report data.

Translation and Cross-Cultural Adaptation

The process followed the guidelines proposed by Beaton et al. (2000) and was developed in a five-staged process (Table 1).

Validation and Psychometric Properties of the Scale

First, according to the recommendations by Beaton et al. (2000), content validity and face validity were assessed through an expert panel with nine participants, already described in Table 1 (Expert Committee

TABLE 1. Process for Translation and Cross-Cultural Adaptation

STAGE	DESCRIPTION	DELIVERABLE
Translation	Three independent translators with no previous knowledge of the instrument. Two nurses and one mechanical engineer were recruited with English proficiency and whose native language was Portuguese. Each translator received the original instrument and a report sheet to provide comments and suggestions.	Written report for each version (T1, T2, and T3)
Synthesis	Translation 1 (T1), Translation 2 (T2), and Translation 3 (T3) were merged into T-12. A meeting with the research team and the original author resolved conflicts between the translator's suggestions.	Written report for T-12
BT	Two professional translators who had no previous knowledge or expertise in the topic were recruited. Two BTs were created from T-12: BT1 and BT2.	Written report for each version (BT1 and BT2)
Expert committee review	An expert committee composed of nine experts—two nurses who worked in diabetic foot or foot health, one podiatrist, one methodologist, and five translators—was recruited to evaluate the documents produced by the previous stages and reach a prefinal version. All experts received the original instrument, the translations to Portuguese (T1 and T2), the synthesis (T-12), and the two BTs (BT1 and BT2).	Written report for the prefinal version
Pretesting	A total of 30 nursing students were recruited to complete the translated version of S-FHAI and describe their understanding of each item.	Written report

Note. BT = back translation; BT1 = back translation 1; BT2 = back translation 2; S-FHAI = Self-Administered Foot Health Assessment Instrument; T1 = Translation 1; T2 = Translation 2; T3 = Translation 3; T-12 = synthesis of T1, T2, and T3.

Review), mainly through the content validity index (I-CVI). A consensus method was developed, with several rounds until agreement was achieved between experts. Items with a mean score of 0.75 or higher were retained. Those who failed to achieve consensus were exposed to a new round. Cronbach's alpha was used for internal consistency, considering the following values (Marôco, 2021): >.9 very good, .8–.9 good, .7–.8 medium, .6–.7 reasonable, .5–.6 bad, and <.5 unacceptable. Item-to-total correlations were also determined, considering a minimum recommended correlation between items and total scores above .20 (Streiner & Norman, 2003).

Principal component analysis (PCA) with Varimax rotation and confirmatory factor analysis (CFA) with maximum-likelihood estimation were used to assess construct validity. Data adequacy for structural equation modeling (SEM) was performed through the Kaiser–Meyer–Olkin (KMO) test. Values of 0.5 or above and Bartlett's test of sphericity with a *p* value below 0.05 were considered (Child, 2006).

The *rationale* for the retention of factor loading in PCA was supported by three assumptions: eigenvalues greater than 1, the inflection point in the scree plot, and a minimum of 50% of total variance explained or factors extracting at least 5% of the total variance (Marôco, 2021; Watson & Thompson, 2006). Additionally, communalities (h^2) were used to describe the variance in a single variable, with item loadings above 0.30 on a component considered acceptable (Child, 2006).

Regarding the CFA, a nonsignificant chi-square (χ^2) was considered acceptable (Child, 2006). Additional tests were completed to study if data fit the proposed model: the comparative fit index (CFI), with values above 0.95 meaning an excellent fit (West et al., 2012); the root mean square error of approximation (RMSEA), where values below 0.05 indicate an excellent fit and between 0.05 and 0.08 a moderate fit (MacCallum et al., 2006); and the goodness of fit index (GFI), where a value of 1 represents a perfect fit, 0.9 or higher a reasonable fit (Hu & Bentler, 1998), and above 0.95 an excellent fit (Kline, 2005).

The sample size was guided by the recommendations of Boateng et al. (2018), namely, having 10 respondents per survey item or 200–300 observations. Criteria for selecting nursing students were being enrolled in a Portuguese nursing school at the moment of recruitment, being in clinical learning environments at the moment of the recruitment or in the previous 2 weeks, and having no previous knowledge about the instrument. Recruitment was performed via email and sent to the coordinators of each academic year, where the project summary and criteria were disclosed. The responses were collected online via *Qualtrics XM*.

Data were analyzed using SPSS v.26 and SPSS AMOS v.26 (IBM, NY, USA).

Ethical Considerations

The study (P799_07_2021) obtained ethical approval from the Ethics Committee of the Health Sciences Research Unit: Nursing (UICISA: E) at the Nursing School of Coimbra (ESENfC). To establish a representative sample of nursing students, the research project, its objectives, and the criteria for inclusion were presented to the deans of nursing bachelor programs throughout Portugal. An email communication was dispatched containing a concise project overview along with a secure hyperlink to access the questionnaire, complete with informed consent documentation. Subsequently, in accordance with the specified criteria, coordinators were invited to distribute this communication to student cohorts they deemed suitable for participation.

Within the questionnaire interface, students were required to peruse a comprehensive project description page, explicitly indicating its status as a component of a doctoral research endeavor. Participants were informed that their involvement was entirely voluntary and anonymous, carrying no potential benefits or detriments to their current or future academic pursuits. The principal investigator's contact information was also provided to address any queries or seek clarifications as needed.

RESULTS

Translation and Cross-Cultural Adaptation of S-FHAI

Two rounds of the expert panel discussion were needed to acquire more than 75% (I-CVI) of the agreement in all items. The Portuguese version of S-FHAI (Table 2) was named *Instrumento de Auto-Avaliação da Saúde do Pé* (IAASP).

The “problematic” items were item 9 “Burning feet” and item 13 “Thickened toenails.” Experts agreed to add an explanatory note to item 9, characterizing the burning sensation on the feet, and discussed a synonym to the English word of item 13 to increase comprehension in the Portuguese population.

The semantic equivalence ranged between 94% and 100%, indicating that the translated version correctly reflected the original version (Portney & Watkins, 2009). The pretest with 30 nursing students revealed no difficulties comprehending items and meanings.

Internal Consistency

A total of 297 undergraduate nursing students received the questionnaire, but only 208 completely answered the items needed for validation (Table 3; a response rate of 70.03%).

Following previous studies with S-FHAI (Stolt et al., 2023), we did not consider item 22 for internal consistency since it is the only Likert-type answer compared with the remaining dichotomous scale. While the instrument's global Cronbach's alpha was .593, after removing item 21 (“Do you have had pain in your feet during the last two weeks?”), it satisfactorily increased to .653. The subscales “Skin health,” “Nail health,” and “Foot structure” had internal consistency values of .502, .504, and .483, respectively.

Principal Component Analysis

Data adequacy to perform *SEM* was mediocre (KMO = .601; $\chi^2 = .000$; Table 4).

PCA with Varimax rotation revealed nine components (C) with an eigenvalue above 1 (range 1.024–2.907). After thoroughly analyzing all loadings and extracted components, three components were considered for the scale validation (Table 5), with a total explained variance of 30.05%. This decision is supported by the inflection point in the scree plot found in C3 and the factor loadings between components.

Regarding homogeneity, the corrected item-to-total correlations were determined and assessed. Item 5 had a weak correlation (<.2), but its removal did not affect internal consistency, thus advocating for its maintenance in the scale. The same *rationale* was applied for items 4, 6, and 13, which had h^2 values lower than 0.5 but did not influence the global or subscale internal consistency.

Confirmatory Factor Analysis

We developed a CFA to confirm that data fit the initial four-dimensional S-FHAI structure (Figure 1A), thus including items 21 and 22 (“Foot pain”), after which an improved model was acquired (Figure 1B), removing the variables related to the “Foot pain” dimension, thus confirming the hypothesized three-component structure. The adjusted model revealed adequate χ^2 values and GFI (Table 6).

DISCUSSION

This study described the translation and validation process of IAASP, the Portuguese version of the S-FHAI, and evidenced its satisfactory psychometric properties.

TABLE 2. The Portuguese Translation of S-FHAI

TRANSLATED VERSION
Instrumento de Auto-Avaliação da Saúde do Pé
O Instrumento de Auto-Avaliação da Saúde do Pé consiste em quatro subcategorias: (a) Saúde a Pele, (b) Saúde das Unhas, (c) Estrutura dos Pés, (d) Dor nos Pés. Avalie a saúde atual do seu pé de acordo com os itens do formulário. Faça um círculo na opção que mais se adequa ao que observou.
Saúde do Pé
1. Gretas na pele ou maceração entre os dedos dos pés
2. Pele seca
3. Fissuras nos calcanhares
4. Calos ou calosidades
5. Verrugas
6. Bolhas
7. Edema
8. Pés suados
9. Pés queimados (sensação de ardor nos pés)
10. Pés frios
11. Câibras nas pernas
Saúde das Unhas
12. Unhas encravadas
13. Unhas engrossadas
14. Alterações na coloração das unhas
15. Infecção fúngica nas unhas
Estrutura dos Pés
16. <i>Hallux valgus</i> (o 1º dedo está visivelmente voltado contra os outros dedos)
17. Joanete de Taylor (o 5º dedo está visivelmente voltado contra os outros dedos)
18. Deformidades menores dos dedos do pé (o dedo ou dedos estão fletidos)
19. Arco do pé baixo (o arco do pé está visivelmente diminuído)
20. Arco do pé alto (o arco do pé está visivelmente elevado)
Dor nos Pés
21. Nas últimas duas semanas, tem tido dores nos pés?
22. Qual a localização e intensidade da sua dor no pé?
22.1 Dedos
22.2 Planta do Pé
22.3 Calcanhar
22.4 Tornozelo
22.5 Joelho
22.6 Coxa
22.7 Anca

TABLE 3. Characterization of the Sample (n = 208)

	<i>n</i> (%)	<i>M</i> (<i>SD</i>)
Sex		
Male	14 (6.7)	
Female	90 (43.3)	
Missing	104	
Total	208	
Daily average time standing in clinical environment		
< 3 h	24 (11.5)	
3 h	10 (4.8)	
> 3 h	70 (33.7)	
Missing	104	
Total	208	
Daily average time walking in clinical environment		
< 3 h	12 (5.8)	
3 h	12 (5.8)	
> 3 h	80 (38.5)	
Missing	104	
Total	208	
Do you know your nursing school's recommendations for adequate footwear?		
Yes	86 (41.3)	
No	18 (8.7)	
Missing	104	
Total	208	
Age		23.03 (4.98)
Weight		64.64 (13.491)
Height		165.46 (6.488)

Note. *M* = mean; *SD* = standard deviation.

TABLE 4. KMO and Bartlett's Test of Sphericity for SEM Adequacy

KMO measure	0.601	
Bartlett's test of sphericity	Aprox. χ^2	481.897
	gl	190
	Sig.	0.000

Note. KMO = Kaiser–Meyer–Olkin; SEM = structural equation modeling; χ^2 : chi-square.

Translation and Adaptation of S-FHAI

The original instrument has easy-to-understand items, often names of signs or symptoms usually of “common sense.” This characteristic makes it a straightforward instrument, and the results of this study indicate that IAASPIs linguistically and culturally adequate and relevant to undergraduate nursing students.

TABLE 5. Item and Scale Description, Item-to-Total Correlations, Cronbach's Alpha Values, and Principal Component Analysis with Varimax Rotation

ABBREVIATED ITEM	CORRECTED ITEM-TO- TOTAL CORRELATION	CRONBACH'S ALPHA	h^2	S-FHAI			
				C1	C3	C2	C6
Skin health		.502					
Skin breaks or maceration between toes	0.427		0.612	0.292	0.048	-0.180	0.443
Dry skin	0.487		0.565	0.102	-0.072	0.084	0.138
Fissures in the heel	0.269		0.790	-0.066	0.059	-0.028	0.878
Corns or calluses	0.366		0.490	-0.036	-0.213	0.367	0.269
Verrucae	0.191		0.574	0.076	-0.179	-0.046	0.156
Blisters	0.287		0.461	-0.168	0.202	0.104	-0.009
Oedema	0.435		0.629	0.027	0.652	0.054	0.151
Sweating feet	0.373		0.736	-0.030	0.172	0.025	-0.073
Burning feet	0.347		0.681	0.189	0.760	0.050	0.009
Cold feet	0.328		0.736	0.023	0.145	0.147	0.008
Leg cramps	0.293		0.700	0.036	0.000	0.116	0.030
Nail health		0.504					
Ingrown toenail	0.363		0.710	0.035	0.148	0.068	-0.081
Thickened nail	0.283		0.484	0.423	-0.226	0.331	-0.025
Color changes in the nails	0.523		0.713	0.798	0.148	0.149	0.015
Fungal infection of the nails	0.424		0.742	0.843	0.094	0.125	-0.025
Foot structure		0.483					
Hallux valgus	0.451		0.568	0.183	0.085	0.692	0.081
Taylor's bunion	0.424		0.595	0.163	-0.001	0.685	-0.176
Hammer toe	0.335		0.624	0.043	0.172	0.515	0.048
Low foot arch	0.274		0.708	0.081	0.133	0.060	0.027
High foot arch	0.420		0.635	0.045	0.336	0.392	0.455
Global scale		0.653					

Note. h^2 = communalities; S-FHAI = Self-Administered Foot Health Assessment Instrument.

Standardized factor loadings in bold face represent an item loading on that factor.

Despite the previous fact, some items were identified as “problematic.” Following the experts’ comments and suggestions, a discussion around item 9 led to a different wording in the final version of the instrument. The importance of “Foot health” is not typical among nursing students, as the most often reported regions are the lower back, neck, and knees (Antochevis-de-Oliveira et al., 2017). While most items are easily comprehended, “Burning feet” would generate doubts. In this sense, experts agreed to add an explanation of how nursing students can experience the sensation of a burning foot. Variations in students’ knowledge and how advanced they are in the nursing degree can also influence the compre-

TABLE 6. Testing (CFA) of the Hypothesized Structure of the S-FHAI ($N = 208$)

	DEFAULT MODEL	FOOT PAIN MODEL 1	ADJUSTED MODEL	SKIN MODEL 1	NAILS MODEL 1	FOOT STRUCTURE MODEL 1
GFI	0.781	0.910	0.913	0.956	1.000	0.982
CMIN/DF	1.428	2.408	1.308	1.275	0.098	1.856
CFI	0.696	0.717	0.833	0.848	1.000	0.922
RMSEA	0.045	0.082	0.039	0.036	0.000	0.064

Note. CFA = confirmatory factor analysis; CFI = comparative fit index; CMIN/DF = chi-square; GFI = goodness-of-fit index; RMSEA = root mean square error of approximation; S-FHAI = Self-Administered Foot Health Assessment Instrument.

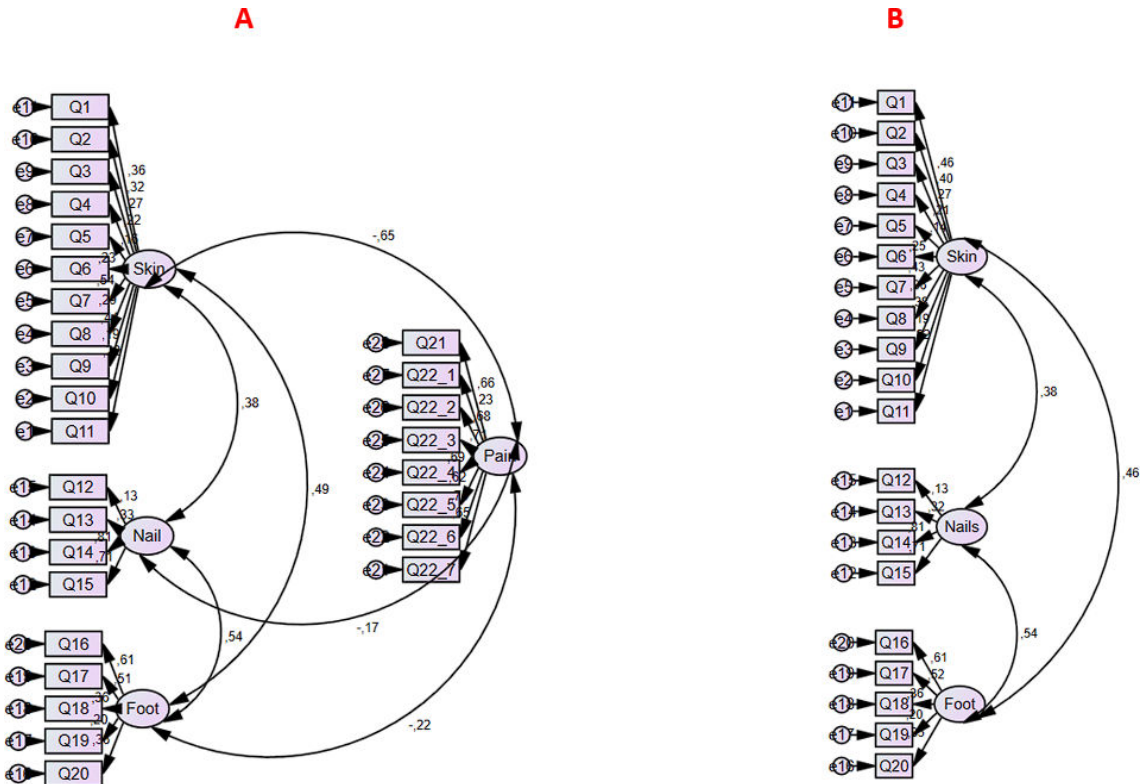


Figure 1. Structure of theoretical model of IAASP (A: default model and B: adjusted model).

hension of more complex symptoms. Moreover, in the Portuguese language, homonymy and synonymy are very common; thus, a need to carefully review the words is in order. Regarding item 13 (“Thickened toenail”), the experts suggested a change in the words equally provided during the translation and BT to a more usually used concept, maintaining the original meaning.

Psychometric Analysis

The psychometric analysis of the items of IAASP has revealed a three-dimensional structure (Skin health, Nail health, and Foot structure) with satisfactory properties.

Regarding the instrument’s internal consistency, we have acquired similar values ($\alpha = .65$) as the original scale ($\alpha = .64$) but slightly inferior values than the S-FHAI adaptation, mainly when applied to nurses ($\alpha = .72$).

The individual subscales’ internal consistency values were like the original scale. In the original development study of FHAI, Stolt et al. (2013) obtained values of 0.49, 0.46, and 0.46 in the Skin health, Nail health, and Foot structure subscales, respectively, while we obtained 0.50, 0.50, and 0.48, respectively. Also, in the original studies with S-FHAI, Stolt et al. (2017) acquired internal consistency values of 0.441, 0.562, and 0.180 in the Skin health, Nail health, and Foot structure subscales, respectively, slightly inferior to our study.

The statistical analysis recommended skipping an essential dimension of Foot health, previously named “Foot pain.” Our suggestion for the final IAASP version is to maintain the original fourth dimension, despite the unsatisfactory psychometric findings. A conceptual and a statistical reason can be evoked. The first reason is derived from the conceptualization of “Foot health” and previous studies. Our recent review (Bernardes et al., 2023) found the inclusion of pain in every nurse report regarding WRMSDs and that it had many variations. Also, it should be noted that chronic foot pain is significantly disabling for nurses (Mbue & Wang, 2023), affecting productivity and quality of life, evidencing the need to assess pain levels and location systematically. Furthermore, in several studies, foot health has been consistently characterized by pain levels in different regions, although highlighting difficulties in its analysis since there are considerable variations in case definitions (Rodríguez-Sanz et al., 2018; Stolt et al., 2020).

The second reason is mainly associated with internal consistency and factor loadings. While consistency estimates how consistently individuals respond to the items within a scale, we now know that Cronbach’s alpha usually masks inconsistencies between answers and that inconsistency among responses might be essential to notice (Vaske et al., 2017). If a response pattern is random, the problem might not be severe enough to promote changes in the instrument’s structure. In our study, the Foot pain dimension acquired lower consistency values than in previous studies (Stolt et al., 2013; Stolt et al., 2017), which might represent the low expertise of nursing students and poor self-assessment ability. Moreover, items that reflect the theoretical core of the construct might not correlate strongly with it in preliminary analyses, like the Foot pain items. Still, it is not wise to eliminate them without exploring their behavior (Clark & Watson, 1995) in future studies.

Implications for Nursing Research, Practice, and Education

This study has significant implications for nursing research, practice, and education, particularly in the realm of occupational health and the self-care practices of undergraduate nursing students. The successful adaptation and validation of the S-FHAI for the Portuguese context offer a robust foundation for future investigations in this domain. Researchers can employ this instrument to explore a broader spectrum of foot health issues, potentially shedding light on nuanced aspects of self-care, occupational health, and overall well-being among nursing students. Further research should focus on refining and expanding the instrument by subjecting certain items to additional testing, allowing for this valuable tool’s continued development and enhancement. Additionally, investigations into the long-term implications of promoting foot health awareness among nursing students could contribute to a more comprehensive understanding of the relationship between self-care practices and school health, potentially shaping future research endeavors. The outcomes of this study also hold notable implications for nursing practice and education. Incorporating the validated S-FHAI into nursing education programs can enhance the self-care practices of undergraduate nursing students, ultimately leading to better health status. By integrating foot health assessment into the curriculum, educators can instill a culture of self-awareness and preventive care among nursing students. This, in turn, can reduce the prevalence of foot-related issues in the nursing workforce. Practicing nurses, with the aid of this instrument, can proactively assess and address their own foot health, ensuring a healthier and more productive career. Furthermore, the broader nursing practice can benefit from the insights gained in this study. The IAASP’s adoption in nursing education and practice may pave the way for preventing foot-related occupational health issues among undergraduate nursing students and the entire nursing profession. As nurses are at the forefront of health care delivery, maintaining their occupational health and well-being is vital for delivering high-quality patient care. This instrument could become a valuable tool for promoting self-care and a high standard of occupational health within the nursing profession, ultimately benefiting both nurses and the patients they serve. Its utilization in nursing practice can potentially improve the overall well-being and quality of care the nursing workforce provides.

Limitations

Some limitations should be described about the generalization of the results. The undergraduate nursing students who answered the questionnaire were mainly from the last 2 years of their bachelor’s degree. Different realities might occur in different countries, and students’ experiences and knowledge might influence responses. Previous research has highlighted the critical role of knowledge and competencies in addressing occupational hazards, safety protocols, and the proper utilization of personal protective equipment in health care (Amare et al., 2021). Inadequate understanding and skills in these areas have been associated with underreporting incidents and insufficient responses to clinical exposures. Significant disparities exist between undergraduate nursing students and experienced nursing professionals, and these disparities are primarily rooted in the differentiation between “school health” and “occupational health.” The latter is characterized by its emphasis on implementing preventive or therapeutic measures tailored to the specific demands of the work environment. It leverages the accumulated expertise and awareness of experienced professionals to ensure self-preservation in the face of occupational hazards. Conversely, “school health” places its predominant focus on the promotion of health and well-being. It is particularly attuned to anticipating the needs of students as they embark on their journey toward becoming future health care professionals. During this phase, students are in

the process of familiarizing themselves with the multifaceted challenges that are intrinsic to their chosen field. It is crucial to acknowledge that undergraduate nursing students represent a relatively young demographic with limited exposure to clinical practice and, as such, may have a more limited experience with issues related to foot pain and other occupational health concerns. This distinction is particularly relevant, as it can significantly influence their awareness of, and responses to, foot health issues during clinical training. Nevertheless, the sample was distributed throughout many public and private nursing schools in Portugal, which is a strength. As this was a cross-sectional study, we did not evaluate test–retest values, which should be performed in the future, and a Rasch analysis to explore the unidimensionality of factors.

CONCLUSION

Evaluating undergraduate nursing students' foot health is necessary to promote self-care and high occupational health status. The psychometric properties of IAASP were tested, and the results revealed satisfactory validity, reliability, and internal consistency values. Some of the items of IAASP need further testing to keep improving the instrument for this population.

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