INTELLECTUAL OUTPUT 3 - REPORT

MULTICULTURALCARE PROJECT | 2020-1-PT01-KA203-078530

Educating students through innovative learning methods to intervene in complex multicultural contexts

IO3 - MULTICULTURALCARE COMPETENCIES OF NURSING STUDENTS: METHODOLOGIES, GUIDELINES, EVALUATION METHODS AND TOOLS

Escola Superior de Enfermagem de Coimbra
UCLL HOGESCHOOL
UCLM Universidad de Castilla-La Mancha
Co-funded by the Erasmus+ Programme of the European Union

TITLE

Intellectual Output 3 Report - MulticulturalCare Project (2020-1-PT01-KA203-078530): MulticulturalCare competencies of nursing students: methodologies, guidelines, evaluation methods and tools. (Working Paper)

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SUMMARY

ABSTRACT

Objective: To translate, culturally adapt, and validate the Multicultural Health Awareness Scale (MHAS) for Nursing Students among European nursing students.

Method: A cross-sectional study with a methodological approach was conducted in two phases. The first phase involved the linguistic adaptation of the MMHAS and the translation of the English version of the MHAS to Portuguese, Spanish and Flemish, following the six stages proposed by Beaton et al. (2007). In the second phase, the psychometric properties of the questionnaire were evaluated using a non-probability sample of 741 undergraduate healthcare students from three European higher education institutions. In the first step, Cronbach's alpha coefficient was estimated to find out the global internal consistency of the scale, as in the original study. Then, both confirmatory and exploratory factor analyses were performed to validate the instrument. Finally, cronbach's alpha was estimated as a measure of internal consistency of the different subscales. Statistical programs used were IBM - SPSS-27 and MPlus for exploratory and Confirmatory factor analysis (CFA), respectively. Ethical principles were fulfilled.

Results: The validation studies conducted in Portugal, Spain, and Belgium revealed that the MHAS possesses sound psychometric properties and is suitable for use in each of the three countries Portugal, Spain and Belgium, where it has been validated. Factor analysis with varimax rotation showed three dimensions of the MHAS, like the original, knowledge, awareness and skills. Few items load in different factors than the original scale. Internal consistency was found to be excellent for three versions of the instrument MHAS: Portuguese Version Cronbach's α for the total scale is **0.945 (35 items)**; Spanish Version Cronbach's **α for the total scale is 0.946 (35 items)** an for Flemish version, **Cronbach's α for the total scale** is 0.947 (**35 items**). Scale dimensions, knowledge, awareness and skills, of each instrument version ranging from 0,880 to 0.928.

A Confirmatory Factor Analysis (CFA) was conducted using the MPlus program with the three samples. The analysis aimed to assess the fit of a measurement model based on the original scale. After careful examination, it was determined that five items needed to be removed from the scale to achieve better model fit. The CFA results indicated that the goodness of fit indicators reached an acceptable level after the removal of the identified five items and loading some items on different factors than in the original measure. These indicators assess how well the observed data align with the theoretical model. The improved fit suggests that the modified measurement model better captures the underlying constructs of interest.

Conclusion: The MHAS provides a reliable and valid measure to assess multicultural care competencies among European nursing students for nursing and healthcare educators and researchers.

Keywords: Multicultural Health Awareness Scale (MHAS), MulticulturalCare Project; Nursing Students; Multicultural Competencies Assessment.

1. BACKGROUND

The MulticulturalCare Project aimed to develop innovative learning methods to educate students to effectively intervene in complex multicultural contexts. The project recognizes the growing diversity of populations across Europe and the need to equip Nursing students and other health professionals with the necessary knowledge and skills to engage with different cultural groups.

To achieve this goal, the project team had first conducted a thorough analysis of current approaches to multicultural education, a Scoping Review (JBI) and identified gaps and limitations, and identified a set of core-competencies that nursing students need to effectively intervene in multicultural contexts. Based on this analysis, the team then designed and developed the MulticulturalCare Nursing Education Model with innovative learning methods that will enable nursing students to acquire these competencies in an engaging and effective manner. These pedagogical methods have been designed to be adaptable to different educational settings and will use a range of technologies, including online platforms, virtual reality, and digital settings. By providing nursing students with the multicultural competencies needed to engage with diverse cultural groups, the MulticulturalCare project aims to promote greater social cohesion and understanding across Europe, improving better healthcare systems.

The multicultural competencies acquired by nursing students related to the pedagogical strategies and specific skills foreseen in the MulticulturalCare Nursing Education Model should be evaluated using adequate assessment instruments.

Overall, the Intellectual Output 3 of the MulticulturalCare Project is focused on developing adequate assessment methodologies / guidelines – Evaluation methods and tools. This process involved several steps. Developing adequate assessment instruments is an ongoing process, and it is essential to continuously evaluate and refine diverse tools and methodologies to ensure its effectiveness and relevance to the changing healthcare landscape. Overall, developing an adequate assessment instrument tool for nursing multicultural competencies requires careful planning, collaboration with stakeholders, and a commitment to continuous improvement.

2. OBJECTIVES

The objective of IO3 (Intellectual Output 3) was to accomplish the following tasks:

1. Mapping the instruments available for assessing multicultural skills: The project aimed to identify and gather information about existing assessment tools that were designed to evaluate multicultural skills. This involved researching and reviewing various instruments used in the field of multicultural education and nursing (Scoping Review JBI)
2. Identifying the best tool for assessing multicultural skills for the MulticulturalCare Nursing Education Model: Based on the mapping reviewing, the project aimed to select the most appropriate assessment tool that aligned with the objectives of the Multicultural Care Nursing Education Model. The chosen tool would be capable of effectively evaluating the multicultural core-competencies of nursing degree students.
3. Translating and culturally adapting a Scale for the Assessment of Multicultural Competencies in Health in Nursing Degree Students: Once the suitable assessment tool was identified, the project focused on translating and culturally adapting the selected scale. This process involved ensuring that the scale's concepts and language were conceptually and culturally relevant for nursing degree students in different partner countries.
4. Examining the psychometric structure of a Scale for Assessing Multicultural Competencies in Health for Nursing students: The project aimed to conduct a study of the psychometric properties of the chosen assessment scale. This involved assessing its reliability, validity, and overall measurement structure to ensure it was a robust and effective tool for assessing cultural competencies in health.
5. Obtaining the final version of the assessment instrument adapted for use by the project's partner countries: The ultimate goal of IO3 was to obtain the finalised and adapted version of the assessment instrument. This version would be suitable for implementation in the partner countries participating in the project. The final instrument would be specifically designed for undergraduate nursing students aged 18 years or older and would be administered upon their completion of the nursing program.

Overall, IO3 aimed to identify, adapt, and finalise a culturally appropriate assessment tool for evaluating multicultural competencies in health among undergraduate nursing students, aligning with the goals of the Multicultural Care Nursing Education Model.

3. VALIDATION OF A QUESTIONNAIRE TO MEASURE NURSING STUDENTS' MULTICULTURAL COMPETENCIES

After conducting a comprehensive mapping exercise of instruments available for assessing multicultural competencies, a specific scale was selected to be used within the scope of this project. The selection process involved researching and reviewing various assessment tools designed to evaluate multicultural competencies in different contexts.

In this study, we conducted a psychometric validation of a previously developed assessment tool that measures multicultural competencies in mental healthcare. The results of this study will provide evidence for the reliability and validity of the assessment tool and ensure that it can be used with confidence in future research and applied settings, using the Multicultural Care Nursing Education Model.

The selection of the Khawaja, Gomez, and Turner (2009) measure was based on its relevance and applicability to the goals of the MulticulturalCare project. The measure likely demonstrated a strong alignment with the project's focus on cultural competencies in nursing education and its emphasis on providing culturally sensitive care to diverse populations. Furthermore, it is important to highlight that the Multicultural Health Awareness Scale (MMHAS) was validated for use with nursing professionals in Portugal (Monteiro & Fernandes, 2016, 2020), and the findings of the study demonstrated good validity and internal consistency of the Portuguese version of the MMHAS.

This study consisted of two main phases. In the first phase the Portuguese partners on the project selected and adapted an existing measure of cultural competencies in mental health settings (Khawaja, Gomez & Turner, 2009) into nursing care settings (see Table 1, below).

This adaptation process involved modifications to the language, wording, and content of the original measure to accurately reflect the specific objectives and requirements of the MulticulturalCare project. The second phase focused on the validation of the translated and culturally adapted version of the MHAS for Nursing Students in three European higher education institutions. Psychometric validation involved several steps, including item analysis, factor analysis, reliability analysis, and validity analysis.

3.1 Material and Methods

This is a methodological study of validation and adaptation of a scale for the assessment of cultural competencies in health for undergraduate nursing students aged 18 years or older, completed at the time of its completion.

3.1.1 Instrument

The scale selected for this study had as its starting point the *Multicultural Mental Health Awareness Scale – MAAS (Khawaja, Gomez, & Turner, 2009)*. The original MMHAS was designed to provide a psychometrically sound instrument to successfully assess professional multicultural competence in

mental health and the effectiveness of a multicultural mental health training program. The original instrument (Khawaja et al., 2008) aimed to evaluate a cultural competence training program in the area of mental health, using the tripartite model of Sue, Arredondo and McDavis (1992).

The MMHAS uses a Likert-type scale with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on the MMHAS indicate a greater level of cultural awareness and competence. The MMHAS has been used in research studies to assess the effectiveness of multicultural training programs for mental health professionals, as well as to evaluate the cultural competence of health professionals in clinical settings. It has been found to be a reliable and valid measure of multicultural awareness among mental health professionals.

The MMHAS consists of 35 items that assess knowledge, attitudes, and behaviours related to multicultural mental health. The items are divided into 3 subscales:

Cultural Knowledge: This subscale assesses the health professionals' knowledge of cultural factors that can influence mental health outcomes, such as religion, language, and gender roles;

Cultural Awareness: This subscale evaluates the health professionals' awareness of their own cultural biases and their ability to manage these biases when working with culturally diverse clients.

Cultural skills: This subscale measures the health professionals' ability to apply culturally appropriate counselling skills, such as active listening, empathy, and respect for cultural differences. The Cultural skills subscale also included items related to the professionals' skills/competences to develop a culturally sensitive treatment plan. In addition, items include the degree to which professionals are able to communicate clearly and build effective therapeutic relationships with migrant individuals.

In the original MMHAS study, the instrument revealed a good internal consistency, with a Cronbach's Alpha of 0.910, test-retest reliability (r=0.820), good concurrent validity and discriminant validity. Also in the original study, this scale had three factors, according to the model by Sue et al. (1992), responsible for 70.29% of the variance. Factor 1: Cultural Awareness - 15 items, 59.13% of total variance. Factor 2: Cultural Knowledge - 9 items, 6.89% of the total variance. And Factor 3: Cultural Practical (Skills) - 11 items, 4.27% of the total variance.

3.1.2 Procedures of Adaptation and Translation

After expressing the objectives of the MulticulturalCare Project and the specific requirements of IO3, a request was made to the first author of the original scale, **Multicultural Mental Health Awareness Scale – MAAS** (Khawaja, Gomez, & Turner, 2009), seeking permission to use the scale within the project. The request outlined the purpose of the work and the intention to adapt the scale linguistically and in terms of vocabulary to align with the objectives of the MulticulturalCare Nursing Education Model. The permission to use the MMHAS was granted by the first author, acknowledging the project's objectives and the need for linguistic and vocabulary adaptations. This authorization included the right to translate the scale into the languages of the partner countries involved in the project and to perform a back-translation to ensure accuracy and consistency.

In the subsequent step, the original MMHAS scale underwent linguistic adaptation with a specific focus on multicultural competencies in health as outlined in the MulticulturalCare Nursing Education Model. The adaptation process aimed to ensure that the scale corresponded to the specific objectives established for IO3 within the MulticulturalCare Project. During the linguistic adaptation, careful attention was given to incorporating terminology and concepts related to multicultural competencies in health that were relevant to the nursing education context. This involved modifying the wording and structure of the items to reflect the specific objectives and requirements of the MulticulturalCare Project.

By obtaining permission for the use of the MMHAS scale and conducting linguistic and vocabulary adaptations, the MulticulturalCare Project team was able to leverage an existing instrument and tailor it to the specific context of the Multicultural Nursing Education Model. This ensured that the assessment tool accurately reflected the multicultural competencies in health as outlined in the MulticulturalCare Nursing Education Model and was aligned with the goals of IO3.

The conceptual adaptation of the original MMHAS version (Mental Health vs. Health), were discussed and validated by the panel of international experts of the MulticulturalCare Project team. Throughout this process, the first author of the original scale was consulted to ensure accuracy and consistency.

During the conceptual adaptation, certain idiomatic and linguistic expressions were modified in some items to better align with the objectives of the MulticulturalCare Project. For instance, "*barriers to mental health services*" was adapted to "*barriers to healthcare services*," "*impact on therapy*" was changed to "*impact on treatment and care*" and "*therapeutic relationship*" was adjusted to "*nurse-patient relationship*."

To address conceptual difficulties in adapting linguistic expressions and items, clarification was sought from the first author of the original scale. An example of this was seen in item 3, where the meaning of "*I am familiar with potential community linkages*" was adapted to "*linking with services in the community*" such as Australian non-government organisations, to foster the resettlement of refugees/migrants.

Additionally, the expression "CALD consumers" underwent adaptation to ensure clarity and inclusivity. Alternatives such as "*culturally and linguistically diverse clients*" or "*minority cultural and linguistic groups*" were used in place of "*CALD consumers*".

Following this comprehensive adaptation process, the **Multicultural Health Awareness Scale (MHAS) for Nursing Students** - English Version - was developed. This version of the scale reflected the modifications and adaptations made to accurately assess multicultural competencies in the context of health for nursing students within the MulticulturalCare Project:

Table 1 - Multicultural Health Awareness Scale (MHAS) for Nursing Students

1	My knowledge of various cultures is
2	My knowledge of acculturation is
3	I am familiar with potential community linkages for culturally and linguistically diverse consumers
4	My knowledge of …….'s Immigration Program is
5	I understand …….'s Multicultural Policy
6	My knowledge of the settlement and support services provided to culturally and linguistically diverse consumers is
7	My understanding of the major barriers to healthcare services experienced by culturally and linguistically diverse consumers is
8	I know about the Government policies regarding cultural diversity and service provision
9	My knowledge of frameworks for developing culturally responsive services is
10	My knowledge of implementing culturally responsive services to produce change is
11	I am familiar with the advantages and disadvantages of each healthcare service models for culturally and linguistically diverse consumers
12	I understand how my own cultural background influences my work with culturally and linguistically diverse consumers
13	I am aware of how the culture of culturally and linguistically diverse consumers impacts on his/her health
14	I am familiar of how cultural barriers may impact on treatment and care
15	I am aware of how cultural barriers may impact on the nurse-patient relationship
16	My understanding of how language and culture affect clinical assessment is
17	I am aware of cultural bias inherent in various tools and instruments used in health assessment
18	My understanding of how language and culture affect diagnosis is
19	I am aware of how the assumptions of culturally and linguistically diverse consumers about healthcare and therapy may affect their treatment
20	My awareness of how cultural beliefs impact on treatment is
21	I am aware of how working with traumatised consumers may affect me
22	My understanding of the stressors families experience as a result of post-migration and adaptation is
23	My understanding of the connection between cultural identity and health is
24	I am aware of the difficulties of culturally and linguistically diverse consumers due to their second language proficiency
25	My ability to understand the speech of people with strong accents is
26	My skills in providing clear messages to people who may be struggling with …… are
27	I am able to negotiate with a culturally and linguistically diverse client a shared understanding of each other's beliefs regarding how illness is perceived, what causes it and how it should be treated
28	My ability to develop a culturally appropriate treatment/care plan is

29	I can develop culturally appropriate communication response styles to meet the needs of culturally and linguistically diverse consumers and their families
30	My skills in identifying strategies for promoting health with culturally and linguistically diverse consumers are
31	My skills in identifying strategies for preventing illness with culturally and linguistically diverse consumers are
32	My skills in building nurse-patient relationship with culturally and linguistically diverse consumers are
33	My ability to respond to the needs of torture of culturally and linguistically diverse consumers and trauma survivors is
34	I am able to address the service barriers for culturally and linguistically diverse consumers
35	My skills in working with interpreters are

The items were rated on a 5-point Likert scale ranging from 1 (Lacking) to 5 (Excellent).

This harmonised English Version of the tool was translated to Portuguese (APPENDIX 1), Spanish (APPENDIX 2) and Flemish (APPENDIX 3), using the Back-translation system, following the steps, according Beaton et al. (2007):

Step1: translation of the original instrument into the target language (forward translation or one-way translation);

Step 2: comparison of the two translated versions of the instrument.

Step 3: blind back-translation (blind backward translation or blind double translation) of the preliminary initial translated version of the instrument

Step 4: comparison of the two back-translated versions of the instrument.

Step 5: pilot testing of the pre-final version of the instrument in the target language with a monolingual sample: cognitive debriefing.

The 3 linguistic versions of the **Multicultural Health Awareness Scale (MHAS) for Nursing Students** were used. In addition, sociodemographic variables were collected.

3.1.3 Participants and Data collection

A multi-center study was carried out between September and December 2022.

Data collection was performed through the application of online questionnaires to undergraduate nursing students. Inclusion criteria for the study required that students were at least 18 years old, enrolled in a bachelor's degree program in nursing science, and proficient in writing in the language version of the questionnaire in each country.

A convenience total sample of 741 undergraduate nursing students was recruited from three European higher education institutions: Escola Superior de Enfermagem de Coimbra, Portugal (n = 311), Faculty of Nursing of the UCLM, Spain (n = 231), and Faculty of Nursing of the UCLL, Belgium (n = 199) .

3.1.4 Ethical Considerations

The research proposal bearing number P743 12/2020 was authorised by the Ethics Committee of the Health Sciences Research Unit of the Nursing School of Coimbra. Participants were provided with comprehensive information about the study objectives, as well as data collection procedures and analysis methods. To ensure participant confidentiality and anonymity, the data collection instruments were available online, promoting a secure and ethical research environment. Additionally, participants were informed of their right to withdraw from the study at any time.

4. RESULTS

4.1 Sociodemographic characterization of Sample

In this section, we will present the sociodemographic characteristics of each of the three samples under study. This information was collected and analysed to provide a comprehensive overview of the study participants. Subsequently, we will provide a brief descriptive comparison of some relevant results obtained from this characterization.

4.1.1 Portuguese sample (n = 311)

The participants in the study were undergraduate nursing students from ESEnfC (Escola Superior de Enfermagem de Coimbra), Portugal. The age range of the participants was between 18 and 48 years, with a mean age of 19.61 years (SD = 4.3).

The majority of respondents identified as female, with 263 subjects (84.6% of respondents), while 43 subjects identified as male (13.8%). It is worth noting that 5 participants (1.6%) did not identify with the binary, biological gender definitions or chose not to disclose their gender, emphasising the importance of considering and respecting gender diversity within the nursing profession. In terms of nationality, the vast majority of respondents, 299 participants (96.1% of the total sample), were of Portuguese nationality. Only 12 students surveyed (3.9%) represented other nationalities.

When considering the year of nursing degree attended by the participants, a significant percentage of respondents were in their first year (71.7%), indicating a larger representation of first-year students in the sample. The representation of third-year students and final-year students was relatively low.

Regarding language proficiency, only 9 students (2.9% of the sample) reported Portuguese not being their mother tongue, suggesting that the majority of participants were fluent in Portuguese.

Regarding previous training in multicultural competencies and/or provision of healthcare in a multicultural context, a significant portion of participants, 281 (90,4%) reported never having received training in this area. Additionally, 18 participants (5.8%) reported having 10 hours or less of training in multicultural competencies.

As for previous higher education, 23 participants (7.4%) reported previous training, mainly in courses in the health area, and 288 (92.6%) had as their only academic training higher than attending the undergraduate nursing course (Table 2).

Table 2 - Sociodemographic characteristics of Portuguese Sample (N=311)

Variables		
Age (years) Min. = 18; Máx. = 48	M = 19,61 SD = 4,31	
	N	**%**
Sex		
Female	263	84,6
Male	43	13,8
Don´t want to answer	2	0,6
Other	3	1,0
Nationality		
Portuguese	299	96,1
Other	12	3,9
Is Portuguese your mother tongue?		
Yes	302	97,1
No	9	2,9
Year of nursing degree attended		
1	223	71,7
2	73	23,5
3	14	4,5
4	1	0,3
Previous training in multicultural competencies?		
yes, 10 hours or less	18	5,8
yes, between 11h and 20h	4	1,3
yes, between 21h and 30h	1	0,3
Yes, between 31 hours and 40 hours	-	-
yes, more than 40 hours	7	2,3
no	281	90,4
Previous higher education		
Yes	23	7,4
No	288	92,6

4.1.2 Spanish sample (N = 231)

The participants in the study were undergraduate nursing students from UCLM (Universidad de Castilla-La Mancha), Spain. The age range of the participants was between 18 and 50 years, with a mean age of 20.94 years (SD = 5.426).

In terms of gender distribution, the majority of respondents identified as female, with 190 participants (82.3% of respondents). There were 39 male participants (16.9%). It is worth noting that 2 students (0.9%) chose not to disclose their gender, indicating a small percentage of participants who preferred not to answer about gender definitions.

Concerning nationality, the overwhelming majority of respondents, 226 participants (97.8% of the total sample), were of Spanish nationality. Only 5 students (2.1%) represented other nationalities. Regarding language proficiency, only 4 students (1,7 % of the sample) reported Spanish not being their mother tongue, indicating that the majority of participants were fluent in Spanish. When considering the year of nursing degree attended by the participants, a notable proportion of respondents were in their first year

(35.1%), followed by the second year (28.1%). The largest number of students, 84 participants (36.4%), were in their third year, while the representation of final-year students was relatively low. Regarding previous training in multicultural competencies and/or provision of healthcare in a multicultural context, a significant portion of participants (47.6%) reported never having received training in this area. Additionally, 55 participants (23.8%) reported having 10 hours or less of training in multicultural competencies. In terms of previous higher education, the majority of participants (79.7%) reported not having any prior higher education experience. However, a notable portion (20.3%) indicated having previous higher education in areas other than nursing (Table 3).

Table 3 - Sociodemographic characteristics of spanish sample (N = 231)

Variable		
Age (years) Min. = 18; Máx. = 50 M = 20,94 SD = 5,426		
	N	**%**
Sex		
Female	190	82,3
Male	39	16,9
Don´t want to answer	2	0,9
Other	-	-
Nationality		
Spanish	226	97,8
Moroccan	1	0,4
Mexican	3	1,3
Pakistani	1	0,4
Is Spanish your mother tongue?		
Yes	227	98,3
No	4	1,7
Year of nursing degree attended		
1	81	35,1
2	65	28,1
3	84	36,4
4	1	0,4
Previous training in multicultural competencies?		
yes, 10 hours or less	55	23,8
yes, between 11h and 20h	27	11,7
yes, between 21h and 30h	9	3,9
Yes, between 31 hours and 40 hours	6	2,6
yes, more than 40h	24	10,4
no	110	47,6
Previous higher education		
Yes	47	20,3
No	184	79,7

4.1.3 Belgian Sample (N = 199)

The participants in the study were undergraduate nursing students from UCLL, Belgium. The age range of the participants was between 18 and 48 years, with a mean age of 25.39 years (SD = 8.017). In terms of gender distribution, the majority of respondents identified as female, with 163 participants (74.8% of respondents). There were 22 male participants (13.8%). This reflects the traditional feminization of the

nursing profession, where female students make up a significant portion of the nursing student population. Concerning nationality, the majority of respondents, 182 participants (92.2% of the total sample), were of Belgian nationality. Only 17 students (7.8%) represented other nationalities.

Regarding language proficiency, 12 students (5.5% of the sample) reported Dutch (Flemish) not being their mother tongue, suggesting that the majority of participants were fluent in Dutch (Flemish)

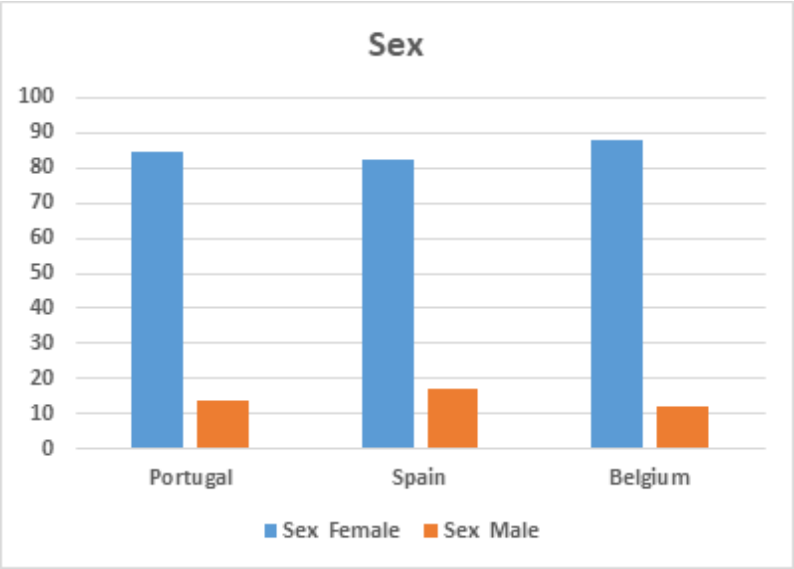
When considering the year of nursing degree attended by the participants, a substantial percentage of respondents were in their first year (38.5%). The representation of final-year students was relatively low (3.7%) Regarding previous training in multicultural competencies, a significant proportion of participants (43.1%) reported never having received training in this area. Additionally, 68 participants (31.2%) reported having 10 hours or less of training in multicultural competencies. In terms of previous academic training, the majority of participants (54.1%) reported no prior academic training in areas other than nursing (Table 4.).

Table 4 - Socio Demographic characterization of Belgian Sample (N = 199)

Variable		
Age (years) Min. = 18; Máx. = 41 M =25,39 SD = 8,017		
Variable	**N**	**%**
Sex (N=185)		
Female	163	74,8
Male	22	10,1
Don´t want to answer	-	-
Other	-	-
Nationality		
Belgian	182	**92.2**
Greek	1	**0.4**
Iraqi	2	**0.9**
Dutch	13	**6.1**
Russian	1	**0.4**
Is Flemish your mother tongue? (N=185)		
Yes	173	79,4
No	12	5,5
Year of nursing degree attended (N = 180)		
1	84	38,5
2	47	21,6
3	41	18,8
4	8	3,7
Previous training in multicultural competencies? (N=180)		
yes, 10 hours or less	68	31,2
yes, between 11h and 20h	13	6,0
yes, between 21h and 30h	1	0,5
Yes, between 31 hours and 40 hours	1	0,5
yes, more than 40 hours	3	1,4
no	94	43,1
Previous higher education		
Yes	62	28,4
No	118	54,1

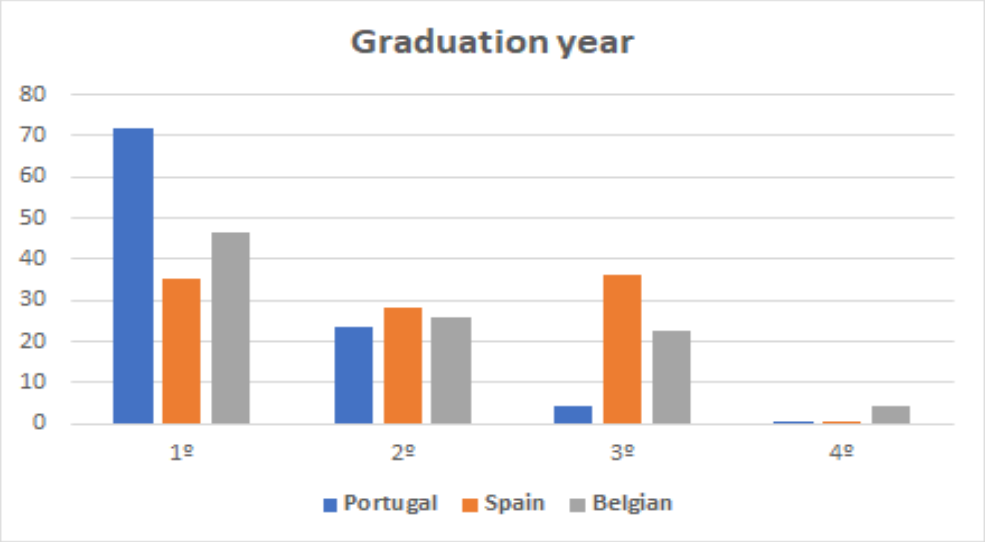
4.1.4 A brief descriptive comparative total sample characterization

Analysing the distribution by sex, we note that the three samples have a significant majority of female students, this number being higher in Belgium Nursing students (Graphic 1). This reflects the traditional feminization of the nursing profession, where female students make up a significant portion of the nursing student population. This finding aligns with the broader European and global trend of a significant female representation in nursing education.



Graphic 1 - Total Sample distribution by sex

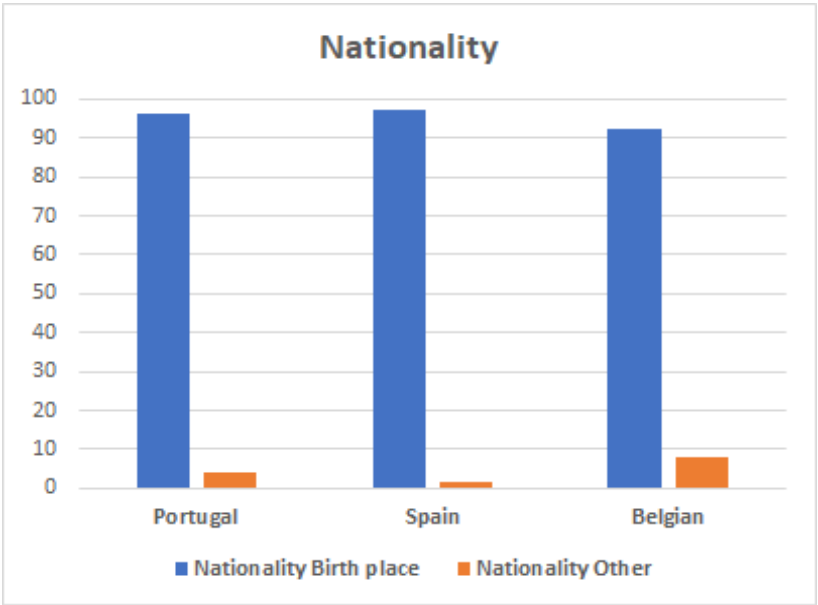
The analysis of questionnaire responses from nursing students in three partner nursing schools has revealed similar patterns in the distribution of respondents across different academic years. A trend emerged, indicating that a majority of participants were in their first year of undergraduate nursing studies, with Portugal particularly standing out in this regard. In contrast, the number of respondents decreased in the third and fourth years, reaching an exceptionally low level in the final year across all three countries. This phenomenon can be attributed to the challenges faced by final-year students. In the final year of nursing programs, students are often dispersed across various clinical teaching fields, gaining specialised experience in diverse healthcare settings. This distribution poses challenges in terms of accessing participants (Graphic 2).



Graphic 2 - Total Sample distribution by graduation year

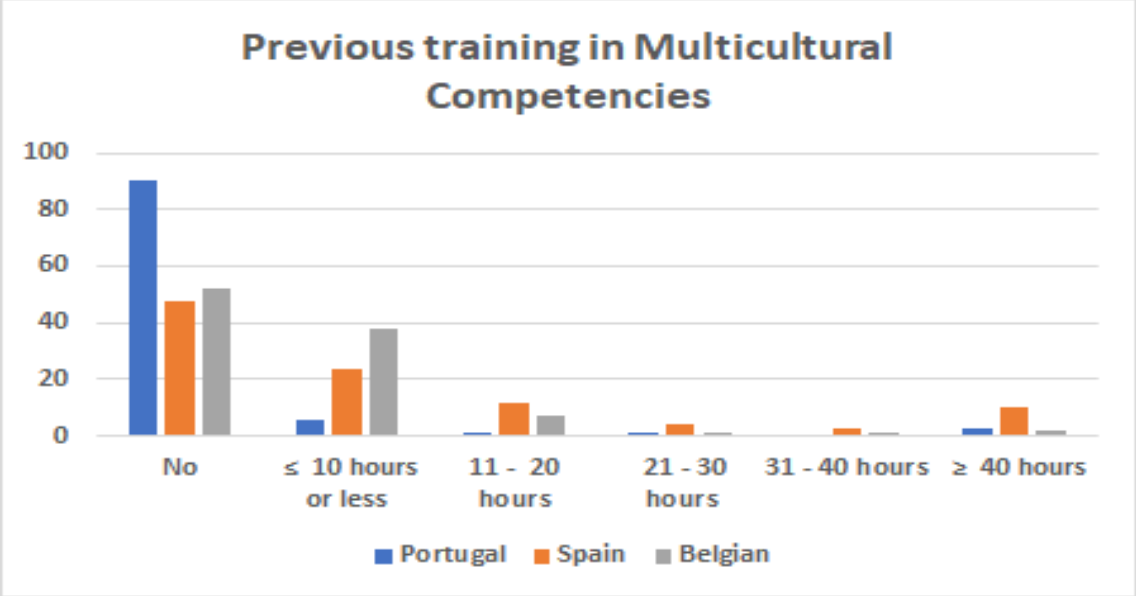
In terms of nationality, the majority of students from the three partner countries (Portugal, Spain, and Belgium) held the nationality of the country in which they were studying. This indicates that the nursing courses in the partner institutions of the MulticulturalCare project primarily attracted domestic students.

The number of foreign students attending the nursing course was relatively low. The distribution of students' nationalities is depicted in Graph 3, which illustrates the dominance of domestic students in each country (Graphic 3).



Graphic 3 - Total sample distribution by nationality

The analysis of nursing students in three countries partner's reveals a significant lack of training in multicultural competencies among the majority of participants. Portugal stands out significantly, with fewer students reporting any form of training compared to the other countries (Graphic 4).



Graphic 3 - Total sample distribution by training in Multicultural Competencies

4.2 Psychometric Study of the Multicultural Health Awareness Scale (MHAS) for Nursing Student

In the validation study conducted, the factorial procedure and type of rotation used in the original scale's validation study were adopted. The authors used varimax rotation, to examine the factorial structure of the adapted scale.

To confirm the predicted structure of the scale, several analyses were conducted. The scree plot, which displays the eigenvalues of the factors, was examined. The variance explained by each factor was also analysed to assess its contribution to the overall structure. Furthermore, the interpretability of the meaning and theoretical construct of each factor was considered, as cultural variations may lead to different factorial solutions. To assess the sample adequacy, the Kaiser-Meyer-Olkin (KMO) was calculated. Additionally, Bartlett's sphericity test was conducted. The internal consistency of the scale was evaluated using Cronbach's Alpha coefficient. All these calculations and analyses were performed using the SPSS version 27.0.

4.2.1 Exploratory factor analysis of *Multicultural Health Awareness Scale (MHAS)* to nursing students.

4.2.1.1 MHAS Portuguese version psychometric study

In the study assessing the psychometric characteristics of the Portuguese version of the MHAS, a total of 313 questionnaires were considered. After carefully examining the omitted cases and evaluating both the subjects and the items, two cases were excluded from the analysis. These cases had a percentage of omitted responses to the MHAS scale greater than 10%. Specifically, case number 3 had a 43%

omission rate, and case number 296 had a 46% omission rate. The decision to eliminate these cases was based on established guidelines for handling missing data (Hair & Anderson, 2010). After excluding the two cases, a total of 311 usable protocols remained for further analysis. The overall percentage of missing values across all the protocols was 0.414%. To assess the pattern of missing values, the Little's Missing Completely at Random (MCAR) chi-square test was performed. The test results indicated that the absence of statistical significance (X2 = 1075.493, p = 0.923) suggests that the missing values occurred completely at random. By addressing the missing data issue and ensuring the quality and completeness of the dataset, the researchers were able to maintain a robust sample size of 311 participants for the psychometric analysis of the Portuguese version of the MHAS.

a) **Reliability study**

The total coefficient of internal consistency obtained by Cronbach's Alpha for the set of items in the Portuguese version of the MHAS for nursing students was alpha = 0.945.

There is no item whose elimination would contribute to improving the global value of internal consistency (Annex 1). Regarding the Pearson coefficient of each of the variables (items) with the rest, all items on the scale have a correlation greater than 0.426, thus being adequate.

From the observation of the mean of the items and their respective standard deviations, we can conclude their relative centrality (Annex 2).

The consistency of the two parts of the scale was also examined. The split-half reliability values were quite high (Annex 3).

b) **Factor analysis study**

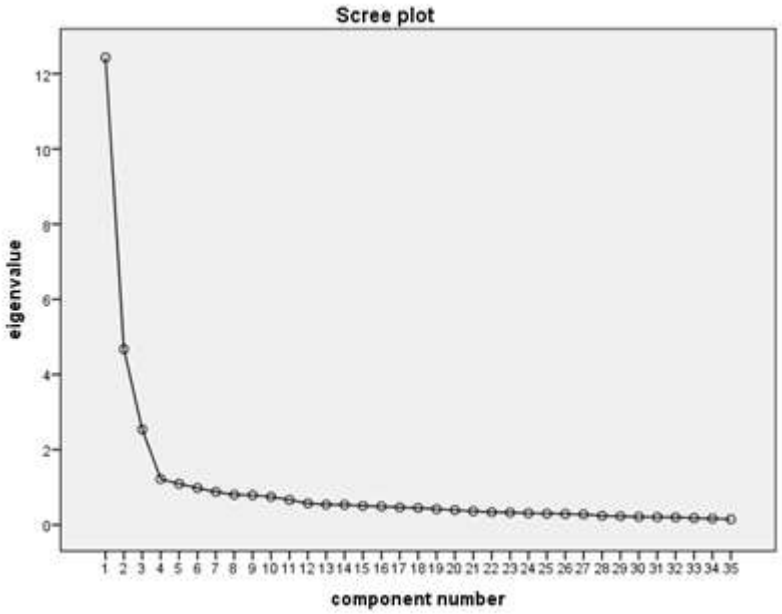
Exploratory Factor Analysis Kaiser-Meyer-Olkin Measure and Bartlett's chi square tests were checked for the appropriateness of data for factor analysis and both the adequacy of the sample and the use of factor analysis on the data were confirmed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.934, exceeding the benchmark value of 0.600. The Bartlett's Test of Sphericity ($p < .001$) was statistically significant, supporting the factorability of the correlation matrix. Factor analysis was forced into three components, taking into account the structure of the original scale.

The commonalities can be accepted, according to commonalities (Annex 4).

The factorial structure of the adapted scale was examined after a forced extraction of three factors. This approach was based on the recommendations of the original scale's author and the authors of its adaptation to the Portuguese language. The results of the extraction procedure revealed the total variance explained by each factor in the adapted scale. The total variance explained by the three factors is 56.126%. Factor 1 explains the highest variance, contributing 35.518% to the overall explanation. Factor 2 and Factor 3 explain 13.360% and 7.248% of the variance, respectively (Annex 5).

These findings highlight the effectiveness of the factorial structure in capturing the underlying constructs and provide a foundation for further analysis and interpretation of the adapted scale's results.

The scree plot graphs the eigenvalue against the factor number. You can see these values in the first two columns of the graphic immediately above. From the third factor on, you can see that the line is almost flat, meaning that each successive factor is accounting for smaller and smaller amounts of the total variance.



Graphic 4 - Scree plot analysis of **MHAS Portuguese Version**

A principal component analysis (PCA) (Annex 6) with orthogonal varimax procedure (Annex 7) was employed to rotate the factors to a simple structure in order to determine the number of factors to retain and. The tems with a loading of greater than 0.45 were retained for a specific factor. Split items were retained to factors if the square of the loadings for a factor was > 45% that of its loading on any other factor (Table 5).

Table 5 - Loadings (item-component correlations) obtained by Varimax with Kaiser Normalization Rotation Method after Principal Component Analysis Extraction Method and internal consistency in Portuguese version.

HAS – PT version	Dimensions		
Itens	**Awareness**	**Knowledge**	**Skills**
1. O meu conhecimento sobre outras culturas é:		**.474**	
2. O meu conhecimento sobre processos de aculturação é:		**.549**	
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo. associações de imigrantes, ONGs).		**.579**	
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) é:		**.780**	
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.		**.766**	
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários é:		**.811**	
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários é:		**.692**	
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.		**.828**	
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos é:		**.762**	
10. O meu conhecimento sobre implementação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança é:		**.731**	
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.		**.767**	
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.	**.702**		
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.	**.755**		
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.	**.743**		
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.	**.825**		
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica é:	**.808**		
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.	**.590**		
18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem é:	**.691**		

19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.	**.781**		
20. A minha consciência sobre o impacto das crenças culturais no tratamento é:	**.698**		
21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.	**.582**		
22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação é:	**.499**		
23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde e:	**.379**		**.366**
24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.	**.620**		
25. A minha capacidade para compreender o discurso de pessoas que falam Português com sotaques muito pronunciados é:	**.365**		**.352**
26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa é:			**.478**
27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percecionada, sobre as causas da doença e sobre a forma com esta deve ser tratada.			**.660**
28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado é:			**.763**
29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.			**.781**
30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:			**.761**
31. As minhas competências na identificação de estratégias para a prevenção de doença em utentes de grupos culturais minoritários são:			**.768**
32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários é:			**.741**
33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritários sobreviventes de situações de trauma e tortura é:			**.781**
34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.			**.663**
35. As minhas competências no trabalho com intérpretes/mediadores culturais são:			**.737**
Cronbach's α coefficients			
0.945 (35 itens)	**0.918 (13 itens)**	**0.916 (11 itens)**	**0.927 (11 itens)**

The Cronbach's alpha does not increase with the removal of any of the items (Annex 8, 9 and 10).

Items 23 and 25 saturate similarly in two factors. Due to their content analysis and according to the proposal of the authors of the scale, we decided to keep the items according to the original study, item 23 to the "Awareness" Factor and item 25 to the "Skills" Factor. We will analyze later the behavior of these items in this dimension.

Reliability of dimensions (FACTORS) of MHAS Portuguese version

Cronbach's α for the total scale is **0.945 (35 items).** Cronbach's Alpha was determined for each of the three dimensions obtained in the factorial analysis (Table 5).

The alphas are good and would not be incremented by removing any of the items.

Factor 1 - Awareness (13 items): 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24; Cronbach's α = 0.918. The alpha does not increase with the removal of any of the items (Annex 8).

Factor 2- Knowledge (11 items): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11; Cronbach's Alpha = 0.916.

The Cronbach's alpha does not increase with the removal of any of the items (Annex 9).

Factor 3 - Cultural Skills (11 items): 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35; Alpha de Cronbach = 0.927. The Cronbach's alpha does not increase with the removal of any of the items (Annex 10).

4.2.1.2 MHAS Spanish version psychometric study

The MHAS Spanish version psychometric study began with the determination of reliability followed by factor analysis and reliability of the factors found, as was performed in the study of the Portuguese version, described above.

The total coefficient of internal consistency obtained by Cronbach's Alpha for the set of items of the Spanish version of the Multicultural Health Awareness Scale (MHAS) for nursing students was 0.946.

The Cronbach's alpha does not increase with the removal of any of the items. (Annex 11).

Considering these results, the 35 proposed items are considered and it will be with these items that we will advance to the factor analysis of the scale.

Factor analysis of MHAS Spanish Version

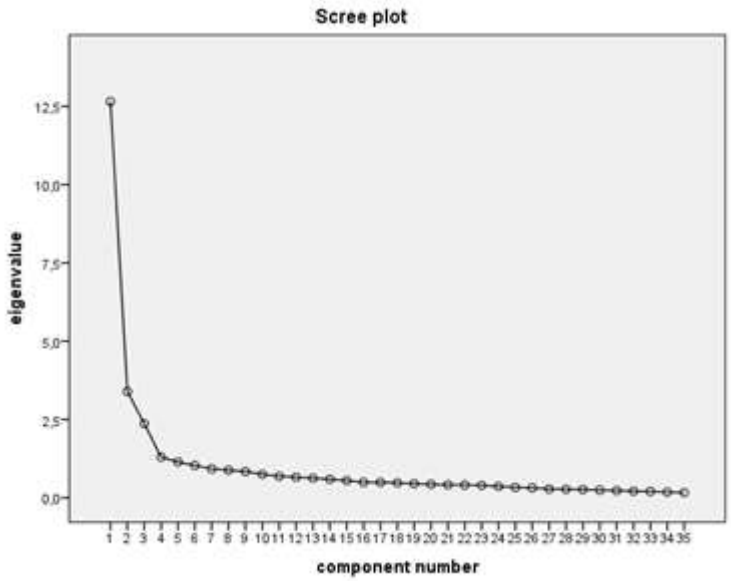
A Factor Analysis of principal components was performed with varimax rotation forced to three factors, according to the original scale, and following the methodology used in the study of the Portuguese version.

KMO values are adequate (0.928) and Bartlett's Test of Sphericity is significant (p = .000) (Annex 12).

The analysis of the Communalities, according to Annex 13, shows adequate results, allowing the extraction to continue.

The total variance explained by the three factors after extraction is 52,605%. Factor 1 has an explained variance of 36,144%, factor 2 has a variance of 9,698% and factor 3 has a variance of 6,763% (Annex 14).

The Scree Plot confirms the adequacy of forced extraction to three factors, as can be seen in Graphic 6.



Graphic 5 - Scree plot analysis of **MHAS Spanish Version**

We present the results of the PCA (Annex 15) and the varimax rotation rotated matrix (Annex 16). We found that the three factors coincide with a single overlap of factor weights in item 22, according to the results presented below (Table 6).

Table 6 - Loadings (item-component correlations) obtained by Varimax with Kaiser Normalization Rotation Method after Principal Component Analysis Extraction Method and internal consistency in Spanish version.

MHAS – SP version	**Dimensions**		
Itens	**Awareness**	**Knowledge**	**Skills**
1. Mi conocimiento sobre las diferentes culturas es:		.440	
2. Mi conocimiento sobre la aculturación es		.498	
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo, asociaciones de inmigrantes, ONGs).		.605	
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:		.780	
5. Entiendo la política multicultural del Gobierno de España		.611	
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:		.726	
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:		.662	
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.		.766	
9. Mi conocimiento de los marcos teoricos para el desarrollo de una atención sanitaria culturalmente sensible es:		.652	
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:		.609	
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.		.592	
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	.579		
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	.754		
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	.730		
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	.824		
16. Mi comprensión de como afectan el lenguaje y la cultura a la evaluación clínica es:	.696		
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	.674		
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	.765		

19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	.808		
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	.739		
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	.540		
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es:	.480		
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	.506		
24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda Lengua	.649		
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:			.490
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:			.599
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, cuál es la causa y cómo debe a tratarse.			.609
28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:			.677
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.			.708
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:			.622
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:			.649
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:			.707
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:			.690
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.			.693
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:			.646
Cronbach's α coefficients			
0.946 (35 items)	**0.928 (13 items)**	**0.880 (11 items)**	**0.905 (11 items)**

Reliability of dimensions synthesis of MHAS Spanish Version:

Cronbach's Alpha was determined for each of the three dimensions obtained in the factorial analysis. Total **Cronbach's α = 0.946** (Table 16)

Factor 1 - Awareness (13 items): 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24); Alpha de Cronbach = 0.928 (Table 16).

The alpha is good and would not be incremented by removing any of the items (Annex 17).

Factor 2 - Knowledge (11 items): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11; Cronbach's Alpha = 0.880 (Table 16).

The Cronbach's alpha does not increase with the removal of any of the items (Annex 18).

Factor 3 - Cultural Skills (11 items): 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35; Cronbach's Alpha = 0.905. The alphas are good and would not be incremented by removing any of the items (Annex 19).

4.2.1.3 MHAS Belgian version psychometric study of *Multicultural Awareness Health Scale (MAHS)* for nursing students

a) **Reliability study**

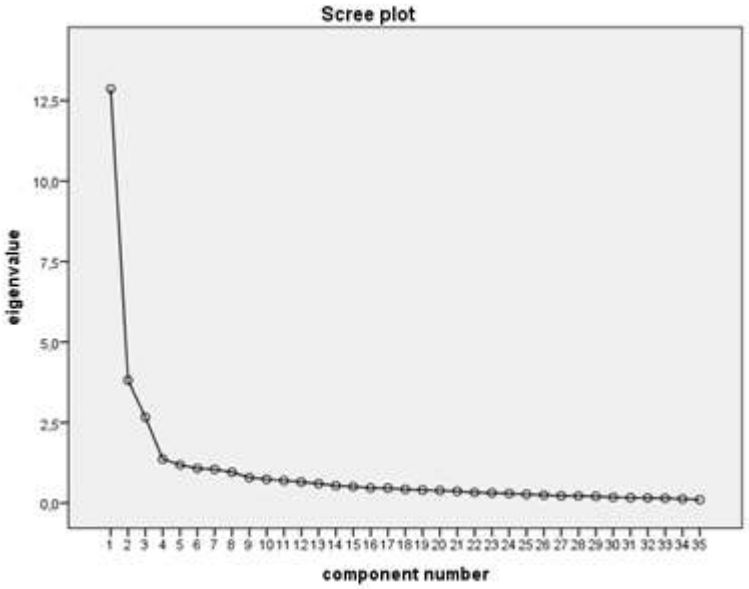
The total coefficient of internal consistency obtained by Cronbach's Alpha for the set of items in the Flemish version of the MHAS for nursing students was alpha = 0.947. There is no item whose elimination would contribute to improving the global value of internal consistency (Annex 20). Regarding the Pearson coefficient of each of the variables (items) with the rest, all items on the scale have a greater correlation.

b) **Factor analysis study**

Exploratory Factor Analysis Kaiser-Meyer-Olkin Measure and Bartlett's chi square tests were checked for the appropriateness of data for factor analysis and both the adequacy of the sample and the use of factor analysis on the data were confirmed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.907. The Bartlett's Test of Sphericity ($p < .001$) was statistically significant, supporting the factorability of the correlation matrix (Annex 21). And the commonalities can be accepted (Annex 22).

Factor analysis was forced into three components, considering the structure of the original scale. The Total variance explained by the three factors after extraction is 55.258%. Factor 1 has an explained variance of 36.752%, factor 2, 10.89% and factor 3, has a variance of 7.616% (Annex 23).

The Screen Plot confirms the adequacy of forced extraction to three factors, as can be seen in Graphic 7.



Graphic 6 - Scree plot analysis of **MHAS Flemish Version**

We present the results of the PCA (Annex 24) and the matrix rotated by varimax rotation (Annex 25). The three factors coincide, with a single overlap of factor weights in item XX, according to the results presented below (Table 7).

Item 17 in this sample does not coincide with the Portuguese sample, moving to another factor of unequivocal form.

Table 7 - Loadings (item-component correlations) obtained by Varimax with Kaiser Normalization Rotation Method after Principal Component Analysis Extraction Method and internal consistency in Flemish version.

MHAS – Flemish version	Dimensions		
Itens	**Awareness**	**Knowledge**	**Skills**
1. Mijn kennis over verschillende culturen is...		**.474**	
2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.		**.549**	
3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten		**.579**	
4. Mijn kennis over het Belgische migratiebeleid is...		**.780**	
5. Ik begrijp het multiculturele beleid in België		**.766**	
6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is.		**.811**	
7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten		**.692**	
8. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.		**.828**	
9. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...		**.762**	
10. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...		**.731**	
11. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.		**.767**	
12. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	**.702**		
13. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	**.755**		
14. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	**.743**		
15. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	**.825**		
16. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	**.808**		
17. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	**.590**		
18. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	**.691**		

19. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	**.781**			
20. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	**.698**			
21. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	**.582**			
22. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van post migratie en aanpassing is....	**.499**			
23. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	**.379**			**.366**
24. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	**.620**			
25. Mijn vermogen om personen met een sterk accent te begrijpen is...	**.365**			**.352**
26. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….				**.478**
27. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.				**.660**
28. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…				**.763**
29. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen				**.781**
30. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…				**.761**
31. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...				**.768**
32. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...				**.741**
33. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt is ...				**.781**
34. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken				**.663**
35. Mijn vaardigheden om met tolken te werken zijn…				**.737**
	Cronbach's α coefficients			
0.947 (35 itens)		**0.909 (9 itens)**	**0.912 (12 itens)**	**0.918 (14 itens)**

The dimensions found in the Belgian study are slightly different in terms of the factorial weights of the items and their allocation. Then, these items are presented, reliability analysis and item-total are made for each dimension found. **Total Cronbach's α = 0.947** (Table 7).

Reliability of dimensions of Flemish Version MHAS

Cronbach's Alpha was determined for each of the three dimensions obtained in the factorial analysis. The alpha values are good and not affected by removing any of the items

FACTOR 1 - Awareness dimension (9 items): 12, 13, 14, 15, 16, 18, 19, 20, 21; α=0.909. Cronbach's alpha does not increase with the removal of any of the items (Annex 26).

FACTOR 2 - Knowledge dimension (12 items): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17; α= 0.912. Cronbach's alpha does not increase with the removal of any of the items (Annex 27).

FACTOR 3 - Skills dimension (14 items): 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35); α= 0.918. Cronbach's alpha does not increase with the removal of any of the items (Annex 28).

Next, in table 8, we present the psychometric results of the Multicultural Mental Health Awareness Scale Original study MMHAS (2008), the Portuguese Multicultural Mental Health Awareness Scale (2016) and the Multicultural Health Awareness Scale (2022), in Portuguese, Spanish and Flemish versions.

Table 8 - Sample Distribution by Analysis of Results

FACTORS	**Multicultural Mental Health Awareness Scale**		**Multicultural Health Awareness Scale, 2022**		
	Original study MMHAS (2008)	Portuguese Validation Nurses Mental Health **(2016)**	Portuguese Nursing students **(n=311)**	Spanish Nursing Students **(n=231)**	Belgian Nursing Students(Flanders) **(n=199)**
1 **AWARENESS**	**15 items** **1, 2, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24** α = 0.89 59.13% explained variance	**13** items 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 α= 0.94 42.3% explained variance	**13** items 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 α=0. 92	**13** items 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 α=0.93	**9** items 12, 13, 14, 15, 16, 18, 19, 20, 21 α=0.91
2. **KNOWLEDGE**	**9 items** **3, 4, 5, 6, 7, 8, 9, 10, 11** α=0.92 6.89% explained variance	**11** items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 α=0.93 20.5% explained variance	**11** items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 α= 0.916	**11** items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 α= 0.88	**12** items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17 α= 0.91
3. **SKILLS**	**11 items** **25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35** **α=0.90** 4.27% explained variance	**11** items 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 α=0.92 6.6% explained variance	**11** items 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 α= 0.93	**11** items 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 α= 0.91	**14** items 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 α= 0.92

5. CONFIRMATORY FACTORIAL ANALYSIS OF THE MHAS

5.1 Validation of the questionnaires

In order to validate the adapted translations of the questionnaire, several factor analyses were run which compared the factor structure of the adapted questionnaires to the factor structure of the original questionnaire. Additionally, fit indices and modification indices were followed to optimize the statistical fit of the model and thus the validity of the adapted questionnaires. Rules of thumb were used for the fit indices as defined by Hu & Bentler (1999): RMSEA ≤ 0.06, CFI and TLI ≥ 0.95, and SRMR < 0.08.

5.1.1 Belgium (N = 199)

First, the data were fit to correspond with the factor structure of the original questionnaire (Khawaja, Gomez & Turner, 2009 - see appendix for the original factor structure) using confirmatory factor analysis (CFA; See Model 1 in Table 9). The fit indices indicated a poor fit of this model. The modification indices suggested to remove items 1 and 2. Hence, a second CFA was run without these two items (See Model 2 in Table 9). This second model improved the fit, but still did not show a good fit. The modification indices suggested removing items 7 and 17 and to include several inter-item correlations within factors. Hence, a third CFA was run without items 1, 2, 7 and 17 and with inter-item correlations between items 5 and 4, items 12 and 13, items 23 and 24 and items 22 and 23 (See Model 3 in Table 9). The fit of this third model was good, but not good enough. Specifically, the RMSEA was still slightly too high. The modification indices suggested to remove items 22 and 23. Hence, a fourth model was run without items 1, 2, 7, 17, 22, and 23, and with inter-item correlations between items 5 and 4, items 12 and 13 and items 13 and 14. Please note that two inter-item correlations were removed from the model as a direct consequence from removing items 22 and 23 from the model (See Model 4 in Table 9). This fourth model showed excellent fit.

Table 9 - Confirmatory factor analyses Belgian sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
1	0.087	0.094	0.916	0.910	Remove items 1 and 2
2	0.078	0.083	0.939	0.934	Remove items 7 and 17 and add inter-item correlations
3	0.064	0.072	0.963	0.960	Remove items 22 and 23
4	0.056	0.064	0.975	0.972	/

Because the CFA's suggested the removal of in total 6 items, an exploratory factor analysis (EFA) was run to confirm whether the removal of these items was the right decision, or whether another solution with more factors could be a good fit for the data. The results of this EFA are shown in Table 10. A model with 1 or 2 factors, both showed a bad fit. A model with 3 factors had a better fit, but it was still not good. A model with 4 factors showed good fit. However, when inspecting the factor loadings, the model with 4 factors did not make a lot of sense content-wise and the fourth factor was almost a completely empty factor. Hence, we thought the solution with 3 factors was the best solution.

Nevertheless, when inspecting the factor loadings, some of the items loaded high on all factors and some of the items loaded high on another factor as in the original scale (See Table 11).

Table 10 - Exploratory factor analysis Belgian sample

Number of factors	RMSEA	SRMR	CFI	TLI
1	0.131	0.156	0.808	0.796
2	0.094	0.095	0.907	0.895
3	0.070	0.062	0.951	0.941
4	0.061	0.054	0.966	0.957

Table 11 - Factor loadings of the 3 factor solution of the EFA Belgian sample

Item	Factor 1: Awareness	Factor 2: Knowledge	Factor 3: Skills
1	0.315	**0.517**	0.353
2	0.200	**0.603**	0.367
3	0.117	**0.687**	**0.516**
4	0.197	**0.812**	0.374
5	0.220	**0.796**	0.355
6	0.157	**0.838**	0.458
7	0.408	**0.564**	0.335
8	0.083	**0.818**	0.421
9	0.071	**0.929**	**0.561**
10	0.125	**0.875**	**0.543**
11	0.058	**0.814**	**0.459**
12	**0.710**	0.196	0.203
13	**0.759**	0.220	0.157
14	**0.853**	0.199	0.275
15	**0.813**	0.230	0.341
16	**0.745**	0.301	**0.526**
17	0.332	**0.539**	**0.543**
18	**0.753**	0.253	**0.543**
19	**0.778**	0.202	**0.526**
20	**0.820**	0.184	**0.524**
21	**0.569**	0.138	0.497
22	0.352	0.210	**0.686**
23	0.475	0.329	**0.737**

24	**0.596**	0.218	**0.592**
25	0.177	0.301	**0.637**
26	0.239	0.308	**0.757**
27	0.290	0.432	**0.808**
28	0.110	0.394	**0.736**
29	0.218	0.490	**0.805**
30	0.221	**0.522**	**0.844**
31	0.172	**0.515**	**0.889**
32	0.382	0.412	**0.700**
33	0.140	0.419	**0.779**
34	0.171	**0.505**	**0.803**
35	0.300	0.348	**0.495**

To further explore the results of the EFA, a next series of CFA's was run in which we step by step intended to implement the changes as suggested in the EFA. Hence, a first model was run with adaptations in the first factor. Two items (1 and 2) were not modeled to load on the first factor, but on the second factor instead, given their low factor loadings for Factor 1 and their higher factor loadings for Factor 2 (See Model 5 in Table 12). This first model showed a better fit compared to the CFA testing the original factor structure in the Belgian sample. Nonetheless, the fit is not good enough yet and some modification indices suggested changes to the model. Hence, a next model was fit with item 17 removed (see Model 6 in Table 12). This model still did not meet all the fit criteria for a good fit and the modification indices suggested the removal of item 7 and the addition of several inter-item correlations within a factor. Hence, Model 7 was run without items 7 and 17 and with inter-item correlations between items 1 and 2, items 4 and 5, items 12 and 13, items 13 and 14 and items 22 and 23 (see Model 7 in Table 12). This model showed an overall good fit, but the RMSEA was still slightly too high. Additionally, the modification indices suggested the removal of items 22 and 23. Hence, a next model was fit without items 7, 17, 22 and 23 and with inter-item correlations between items 1 and 2, items 4 and 5, items 12 and 13, and items 13 and 14 (see Model 8 in Table 12). Please note one inter-item correlation was removed from the model as a direct consequence from removing items 22 and 23 from the model. This eighth model showed excellent fit. Additionally, this model matches the suggestions of the EFA. Hence, this model was selected as the final solution for the Belgian sample.

Table 12 - Confirmatory factor analyses after EFA Belgian sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
5	0.076	0.085	0.936	0.931	Remove item 17
6	0.072	0.081	0.946	0.942	Remove item 7 and add inter-item correlations
7	0.063	0.074	0.960	0.957	Remove items 22 and 23
8	0.057	0.068	0.971	0.968	/

5.1.2 Portugal (N = 311)

First, the data were fitted to correspond with the factor structure of the original questionnaire (Khawaja, Gomez & Turner, 2009 - see appendix for the original factor structure) using confirmatory factor analysis (CFA; See Model 1 in Table 13). The fit indices indicated a poor fit of this model. The modification indices suggested to remove items 1 and 2. Hence, a second CFA was run without these two items (See Model 2 in Table 13). This second model improved the fit, but still did not show a good fit. The modification indices suggested to remove items 17 and 23. Hence, a third CFA was run without items 1, 2, 17 and 23 (see Model 3 in Table 13). The fit of this third model was still not good. The modification indices suggested to remove item 7. Hence, a fourth model was run without items 1, 2, 7, 17, and 23 (See Model 4 in Table 13). The fit of the model improved slightly, but was still not good enough. The modification indices suggested adding inter-item correlations within a factor, hence in the fifth model inter-item correlations between items 13 and 14, items 14 and 15, items 21 and 22, and items 25 and 26 were added (See Model 5 in Table 13). The model fit improved with three out of four fit indices indicating good fit of the model. Although the RMSEA was still too high, no further modifications were made, given that the modifications as suggested by the modification indices would not have improved the fit greatly.

Table 13 - Confirmatory factor analyses Portuguese sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
1	0.100	0.089	0.896	0.889	Remove items 1 and 2
2	0.087	0.073	0.928	0.923	Remove items 17 and 23
3	0.080	0.066	0.946	0.941	Remove item 7
4	0.080	0.064	0.949	0.944	Add inter-item correlations
5	0.073	0.061	0.958	0.954	/

Because the CFA's suggested the removal of in total 6 items, an exploratory factor analysis (EFA) was run to confirm whether the removal of these items was the right decision, or whether another solution with more factors could be a good fit for the data. The results of this EFA are shown in Table 14. A model with 1 or 2 factors, both showed a bad fit. A model with 3 factors had a better fit, but it was still not good. A model with 4 factors showed good fit according to two fit indices. However, when inspecting

the factor loadings, the model with 4 factors did not make a lot of sense content-wise and the fourth factor was almost a completely empty factor. Hence, we thought the solution with 3 factors was the best solution. Nevertheless, when inspecting the factor loadings, some of the items loaded high on all factors and some of the items loaded high on another factor as in the original scale (See Table 15).

Table 14 - Exploratory factor analysis Portuguese sample

Number of factors	RMSEA	SRMR	CFI	TLI
1	0.170	0.176	0.695	0.676
2	0.113	0.087	0.873	0.856
3	0.079	0.047	0.941	0.929
4	0.073	0.041	0.954	0.941

Table 15 - Factor loadings of the 3 factor solution of the EFA Portuguese sample

Item	Factor 1: Awareness	Factor 2: Knowledge	Factor 3: Skills
1	0.132	**0.573**	0.424
2	0.140	**0.586**	0.371
3	0.010	**0.582**	0.375
4	-0.176	**0.820**	0.419
5	-0.057	**0.792**	0.422
6	-0.028	**0.860**	0.439
7	0.191	**0.735**	0.447
8	-0.106	**0.868**	0.460
9	0.043	**0.824**	0.472
10	0.074	**0.813**	0.474
11	0.038	**0.816**	0.490
12	**0.680**	0.359	0.341
13	**0.782**	0.346	0.386
14	**0.797**	0.271	0.331
15	**0.863**	0.220	0.329
16	**0.814**	0.167	0.418
17	**0.567**	0.472	**0.543**
18	**0.709**	0.179	0.457
19	**0.793**	0.140	0.403
20	**0.728**	0.090	0.459
21	**0.603**	0.093	0.410

22	**0.513**	0.224	**0.509**
23	0.386	0.403	**0.537**
24	**0.631**	0.184	0.490
25	0.363	0.347	**0.527**
26	0.392	0.305	**0590**
27	0.272	0.455	**0.763**
28	0.168	0.495	**0.875**
29	0.182	**0.539**	**0.917**
30	0.190	**0.515**	**0.901**
31	0.179	**0.530**	**0.858**
32	0.258	0.354	**0.782**
33	0.220	0.442	**0.839**
34	0.250	0.425	**0.729**
35	0.153	0.468	**0.792**

To further explore the results of the EFA, a next series of CFA's was run in which we step by step intended to implement the changes as suggested in the EFA. Hence, a first model was run with adaptations in the first factor. Two items (1 and 2) were not modeled to load on the first factor, but on the second factor instead, given their low factor loadings for Factor 1 and their higher factor loadings for Factor 2 (See Model 6 in Table 16). This first model showed a better fit compared to the CFA testing the original factor structure in the Portuguese sample. Nonetheless, the fit is not good enough yet and some modification indices suggested changes to the model. Hence, a next model was fit with item 23 removed (see Model 7 in Table 16). This model still did not meet all the fit criteria for a good fit and the modification indices suggested the removal of item 17. Hence, Model 8 was run without items 17 and 23 (See Table 16). This model still did not fit the data well enough and the modification indices suggested the addition of several inter-item correlations within a factor. Hence, a next model was fit without items 17 and 23 and with inter-item correlations between items Three out of four fit indices indicate a good model fit for Model 9, however the RMSEA is still slightly too high and the modification indices suggest the removal of items 4 and 7. Hence, a next model was fit without items 4, 7, 17 and 23 and with inter-item correlations between items 1 and 2, items 13 and 14, items 21 and 22, and items 25 and 26 (see Model 10 in Table 16). Please note that one inter-item correlation was removed from the model as a direct consequence from removing item 4 from the model. This tenth model showed good fit, however the RMSEA was still slightly too high. Nonetheless, the modification indices did not suggest any changes that would improve the model fit significantly. Hence, this model was selected as the final solution for the Portuguese sample.

Table 16 - Confirmatory factor analyses after EFA Portuguese sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
6	0.083	0.074	0.927	0.922	Remove item 23
7	0.080	0.070	0.936	0.932	Remove item 17
8	0.076	0.066	0.946	0.942	Add inter-item correlations
9	0.070	0.064	0.955	0.951	Remove items 4 and 7
10	0.069	0.060	0.959	0.955	/

5.1.3 Spain (N = 231)

First, the data were fitted to correspond with the factor structure of the original questionnaire (Khawaja, Gomez & Turner, 2009 - see appendix for the original factor structure) using confirmatory factor analysis (CFA; See Model 1 in Table 17). The fit indices indicated a poor fit of this model. The modification indices suggested to remove items 1 and 2. Hence, a second CFA was run without these two items (See Model 2 in Table 17). This second model improved the fit, but still did not show a good fit. The modification indices suggested the addition of several inter-item correlations within a factor. Hence, a third CFA was run without items 1 and 2 and with inter-item correlations between items 3 and 6, items 4 and 6, and items 25 and 26 (see Model 3 in Table 17). The fit of this third model was still not good enough. The modification indices suggested to remove item 4. Hence, a fourth model was run without items 1, 2, and 4 and with inter-item correlations between items 3 and 6 and items 25 and 26 (See Model 4 in Table 17). Please note the removal of one inter-item correlation as a direct consequence of the removal of item 4. The fit of the model improved slightly, but was still not good enough. The modification indices suggested adding an inter-item correlation within a factor, hence in the fifth model the inter-item correlation between items 6 and was added (See Model 5 in Table 17).

The model fit improved with three out of four fit indices indicating good fit of the model. Although the RMSEA was still slightly too high, no further modifications were made, given that the modifications as suggested by the modification indices would not have improved the fit greatly.

Table 17 - Confirmatory factor analyses Spanish sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
1	0.075	0.077	0.927	0.922	Remove items 1 and 2
2	0.068	0.067	0.946	0.942	Add inter-item correlations
3	0.065	0.064	0.952	0.948	Remove item 4
4	0.064	0.061	0.955	0.952	Add inter-item correlations
5	0.061	0.059	0.959	0.956	/

Because the CFA's suggested the removal of in total 3 items, an exploratory factor analysis (EFA) was run to confirm whether the removal of these items was the right decision, or whether another solution with more factors could be a good fit for the data. The results of this EFA are shown in Table 18. A model with 1 or 2 factors, both showed a bad fit. A model with 3 factors had a good fit. Nevertheless, when inspecting the factor loadings, some of the items loaded high on all factors and some of the items loaded high on another factor as in the original scale (See Table 19).

Table 18 - Exploratory factor analysis Spanish sample

Number of factors	RMSEA	SRMR	CFI	TLI
1	0.122	0.128	0.808	0.796
2	0.086	0.079	0.910	0.898
3	0.057	0.049	0.962	0.955

Table 19 - Factor loadings of the 3 factor solution of the EFA Spanish sample

Item	Factor 1: Awareness	Factor 2: Knowledge	Factor 3: Skills
1	0.223	0.482	0.370
2	0.129	0.499	0.293
3	0.197	0.614	0.299
4	0.108	0.804	0.251
5	0.209	0.639	0.317
6	0.222	0.750	0.314
7	0.390	0.689	0.324
8	0.342	0.822	0.415
9	0.401	0.728	0.466
10	0.456	0.694	0.423
11	0.417	0.664	0.457
12	0.680	0.448	0.474
13	0.796	0.351	0.410
14	0.803	0.390	0.445
15	0.901	0.250	0.435
16	0.789	0.276	0.469
17	0.744	0.382	0.498
18	0.843	0.227	0.466
19	0.862	0.200	0.523
20	0.786	0.076	0.454
21	0.652	0.132	0.601

22	0.618	0.191	0.620
23	0.630	0.397	0.566
24	0.727	0.238	0.565
25	0.362	0.148	0.526
26	0.317	0.248	0.601
27	0.465	0.389	0.705
28	0.485	0.413	0.789
29	0.510	0.448	0.827
30	0.472	0.531	0.776
31	0.473	0.580	0.714
32	0.477	0.381	0.790
33	0.389	0.437	0.754
34	0.417	0.353	0.769
35	0.401	0.283	0.677

To further explore the results of the EFA, a next series of CFA's was run in which we step by step intended to implement the changes as suggested in the EFA. Hence, a first model was run with adaptations in the first factor. Two items (1 and 2) were not modeled to load on the first factor, but on the second factor instead, given their low factor loadings for Factor 1 and their higher factor loadings for Factor 2 (See Model 6 in Table 20). This first model showed a better fit compared to the CFA testing the original factor structure in the Spanish sample. Nonetheless, the fit is not good enough yet and some modification indices suggested changes to the model. Hence, a next model was fit with item 23 removed (see Model 7 in Table 20). This model still did not meet all the fit criteria for a good fit and the modification indices suggested the removal of item 4 and the addition of two inter-item correlations within a factor. Hence, Model 8 was run without items 4 and 23 and with inter-item correlations between items 1 and 2 and items 25 and 26 (see Model 8 in Table 20). This eighth model showed excellent fit. Hence, this model was selected as the final solution for the Spanish sample.

Table 20 - Confirmatory factor analyses after EFA Spanish sample

Model	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
6	0.065	0.066	0.948	0.944	Remove item 23
7	0.064	0.065	0.951	0.947	Remove item 4 and add inter-item correlations
8	0.058	0.059	0.961	0.958	/

5.2 A common model for the three countries

The validation analyses for each of the countries separately yielded different results, but with some remarkable similarities:

- In all three datasets items 1 and 2 should load on the second factor (i.e., Knowledge) instead of on the first factor (i.e., Awareness)
- In all three datasets item 23 was removed
- In two out of three datasets (Belgium and Portugal) item 7 and 17 was removed
- In two out of three datasets (Portugal and Spain) item 4 was removed
- Several inter-item correlations within the same factor were added in the models for all three datasets

Therefore, we conducted additional analyses to have a final model that fits the data of all three countries well.

First, we fitted a model with items 4, 7, 17 and 23 removed as these were items that were removed in the models for more than one country. Additionally, items 1 and 2 load on Factor 2. In this first model, all inter-item correlations that were in each final model per country were included as well. Hence, Model 1 excluded items 4, 7, 17 and 23, loaded items 1 and 2 on Factor 2 and included inter-item correlations between items 1 and 2, items 12 and 13, items 13 and 14, items 14 and 15, items 21 and 22, and items 25 and 26 (see Table 21). For Belgium and Portugal, this first model showed a good fit, but the RMSEA was still slightly too high. Modification indices suggested to remove item 22 in both analyses. For Spain, this model showed an excellent fit. However, the modification indices suggested that also for the Spanish dataset the removal of item 22 could improve the model.

Hence, a second model removing item 22 was fitted in all three datasets. So, Model 2 excluded items 4, 7, 17, 22 and 23, loaded items 1 and 2 on Factor 2 and included inter-item correlations between items 1 and 2, items 12 and 13, items 13 and 14, items 14 and 15, and items 25 and 26 (see Table 21). Please note that one inter-item correlation was removed as a direct consequence from removing item 22. This second model showed an excellent fit for Belgium and Spain. For Portugal, the fit of the model improved, but was still not good enough. Nonetheless, the modification indices did not suggest anything that would imply a significant improvement of the model. Hence, no further adaptations to the model were made for any of the datasets and Model 2 was decided to be the final model for all countries. Table 22 shows the standardized factor loadings for this final model per dataset.

Table 21 - Confirmatory factor analyses after EFA Spanish sample

Model	Country	RMSEA	SRMR	CFI	TLI	Suggestions by modification indices
1	Belgium	0.061	0.071	0.965	0.962	Remove item 22
	Portugal	0.068	0.059	0.960	0.956	Remove item 22
	Spain	0.060	0.059	0.960	0.956	Remove item 22
2	Belgium	0.056	0.067	0.972	0.969	/
	Portugal	0.067	0.058	0.963	0.960	/
	Spain	0.060	0.058	0.962	0.958	/

Table 22 - Factor loadings per country

Item	Factor 1: Awareness			Factor 2: Knowledge			Factor 3: Skills		
	BE	PT	SP	BE	PT	SP	BE	PT	SP
12	0.623	0.730	0.749						
13	0.585	0.798	0.792						
14	0.736	0.720	0.786						
15	0.771	0.809	0.855						
16	0.853	0.839	0.787						
18	0.859	0.784	0.830						
19	0.854	0.816	0.852						
20	0.886	0.792	0.758						
21	0.681	0.641	0.698						
24	0.743	0.721	0.743						
1				0.591	0.618	0.532			
2				0.625	0.586	0.442			
3				0.765	0.593	0.565			
5				0.715	0.776	0.592			
6				0.832	0.837	0.645			
8				0.795	0.843	0.801			
9				0.949	0.831	0.792			
10				0.909	0.829	0.791			
11				0.802	0.825	0.749			
25							0.595	0.574	0.489
26							0.723	0.631	0.553
27							0.833	0.784	0.723
28							0.721	0.867	0.801
29							0.835	0.915	0.845
30							0.867	0.900	0.825
31							0.887	0.857	0.859
32							0.760	0.779	0.787
33							0.766	0.830	0.751
34							0.823	0.734	0.747
35							0.573	0.782	0.661

5.2.1 Reliability analyses

After defining the final model for all three countries, the reliability of the questionnaire with the defined factor structure (and in total 5 items removed) was assessed by means of Cronbach's α per factor (subscale). Please note that these reliabilities were calculated using the validated factor structure as shown in Table 22. The Cronbach's α per country are shown in Table 23. All subscales show good reliability in each country.

Table 23 - Reliability (α) of the different subscales per country

Awareness			Knowledge			Skills		
BE	**PT**	**SP**	**BE**	**PT**	**SP**	**BE**	**PT**	**SP**
0.913	0.912	0.917	0.898	0.896	0.849	0.931	0.927	0.905

The items removed were items 4, 7, 17, 22 and 23. The best version of the scale for assessing multicultural competencies in nursing students in the three countries, Portugal, Spain and Belgium, consists of 30 items, distributed across the three dimensions, according to table 22.

The awareness dimension consists of items 12, 13, 14, 15, 16, 18, 19, 20, 21, 24. The Knowledge dimension consists of items 1, 2, 3, 5, 6, 8, 9, 10, 11. The Skills dimension consists of items 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35. Thus, the scale to be used is shown in Table 24.

Table 24 - INDEX A

Appendix: Original factor structure of MMHAS (N = 221) (Khawaja, Gomez & Turner, 2009)

Item	**Factor 1: Awareness**	**Factor 2: Knowledge**	**Factor 3: Skills**
1. Knowledge of various cultures	.41		
2. Knowledge of acculturation	.38		
12. Understanding of how my own cultural background influences my work with CALD consumers	.57		
13. Aware of how a CALD consumer's culture impacts on his/her mental health	.48	.40	
14. Familiarity of how cultural barriers impact on therapy	.80		
15. Awareness of how cultural beliefs impact on the therapeutic relationship	.90		
16. Understanding of how language and culture affect clinical assessment	.83		
17. Understanding of effects of language and culture on diagnosis	.82		
18. Aware of cultural bias inherent in tools and instruments	.96		
19. Aware how CALD consumers' assumptions about therapy may affect treatment	.90		
20. Awareness of how cultural barriers impact on treatment	.83		
21. Aware of how working with traumatized clients may affect me	.66		

22. Understanding of the stressors that families experience as a result of post-migration and adaptation	.52		
23. Understanding of the connection between cultural identity and mental health	.66		
24. Aware of CALD consumers' difficulties due to second language proficiency	.59		
3. Familiarity with potential community linkages for CALD consumers		.66	
4. Knowledge of Australia's immigration program		.70	
5. Understanding of Australia's multicultural policy		.89	
6. Knowledge of settlement and support services provided to CALD consumers		.85	
7. Understanding of the major barriers to mental health services experiences by CALD consumers		.63	
8. Knowledge about the Government policies regarding cultural diversity and service provision		.84	
9. Knowledge of frameworks for developing culturally responsive services		.72	
10. Knowledge of implementing culturally responsive services to produce change		.64	
11. Familiarity with the advantages and disadvantages of each mental health service model for CALD consumers		.68	
25. Ability to understand speech of people with strong accents			.77
26. Skills in providing clear messages			.74
27. Ability to negotiate with a CALD patient a shared understanding of each other's beliefs regarding how mental illness is perceived			.67
28. Ability to develop culturally appropriate treatment plan			.61
29. Ability to develop culturally appropriate response styles to meet the needs of CALD consumers and their families			.71
30. Skills in identifying strategies for promoting mental health with CALD consumers			.70
31. Skills in identifying strategies for preventing mental illness with CALD consumers			.69
32. Skills in building rapport with CALD consumers			.53
33. Ability to respond to the needs of CALD torture and trauma survivors			.58
34. Ability to address the service barriers for CALD individuals		.33	.71
35. Skills in working with interpreters		.32	.65

After Confirmatory Analysis

Table 25 - MAHS - The best version of the scale for assessing multicultural competencies in nursing students in the three countries, Portugal, Spain and Belgium, after Confirmatory Analysis

1	**My knowledge of various cultures is**
2	My knowledge of acculturation is
3	I am familiar with potential community linkages for culturally and linguistically diverse consumers
~~4~~	~~My knowledge of …….'s Immigration Program is~~
5	I understand …….'s Multicultural Policy
6	My knowledge of the settlement and support services provided to culturally and linguistically diverse consumers is
~~7~~	~~My understanding of the major barriers to healthcare services experienced by culturally and linguistically diverse consumers is~~
8	I know about the Government policies regarding cultural diversity and service provision
9	My knowledge of frameworks for developing culturally responsive services is
10	My knowledge of implementing culturally responsive services to produce change is
11	I am familiar with the advantages and disadvantages of each healthcare service models for culturally and linguistically diverse consumers
12	I understand how my own cultural background influences my work with culturally and linguistically diverse consumers
13	I am aware of how the culture of culturally and linguistically diverse consumers impacts on his/her health
14	I am familiar of how cultural barriers may impact on treatment and care
15	I am aware of how cultural barriers may impact on the nurse-patient relationship
16	My understanding of how language and culture affect clinical assessment is
~~17~~	~~I am aware of cultural bias inherent in various tools and instruments used in health assessment~~
18	My understanding of how language and culture affect diagnosis is
19	I am aware of how the assumptions of culturally and linguistically diverse consumers about healthcare and therapy may affect their treatment
20	My awareness of how cultural beliefs impact on treatment is
21	I am aware of how working with traumatized consumers may affect me
~~22~~	~~My understanding of the stressors families experience as a result of post-migration and adaptation is~~
~~23~~	~~My understanding of the connection between cultural identity and health is~~
24	I am aware of the difficulties of culturally and linguistically diverse consumers due to their second language proficiency
25	My ability to understand the speech of people with strong accents is
26	My skills in providing clear messages to people who may be struggling with …… are
27	I am able to negotiate with a culturally and linguistically diverse client a shared understanding of each other's beliefs regarding how illness is perceived, what causes it and how it should be treated
28	My ability to develop a culturally appropriate treatment/care plan is
29	I can develop culturally appropriate communication response styles to meet the needs of culturally and linguistically diverse consumers and their families

30	My skills in identifying strategies for promoting health with culturally and linguistically diverse consumers are
31	My skills in identifying strategies for preventing illness with culturally and linguistically diverse consumers are
32	My skills in building nurse-patient relationship with culturally and linguistically diverse consumers are
33	My ability to respond to the needs of torture of culturally and linguistically diverse consumers and trauma survivors is
34	I am able to address the service barriers for culturally and linguistically diverse consumers
35	My skills in working with interpreters are

The items were rated on a 5-point Likert scale ranging from 1 (Lacking) to 5 (Excellent).

Table 26 - Final Model of Multicultural Health Awareness Scale (MHAS) for Nursing Students, english version after confirmatory analysis (MULTICULTURALCARE PROJECT TEAM, 2023)

1	My knowledge of various cultures is
2	My knowledge of acculturation is
3	I am familiar with potential community linkages for culturally and linguistically diverse consumers
4	I understand …….'s Multicultural Policy
5	My knowledge of the settlement and support services provided to culturally and linguistically diverse consumers is
6	I know about the Government policies regarding cultural diversity and service provision
7	My knowledge of frameworks for developing culturally responsive services is
8	My knowledge of implementing culturally responsive services to produce change is
9	I am familiar with the advantages and disadvantages of each healthcare service models for culturally and linguistically diverse consumers
10	I understand how my own cultural background influences my work with culturally and linguistically diverse consumers
11	I am aware of how the culture of culturally and linguistically diverse consumers impacts on his/her health
13	I am familiar of how cultural barriers may impact on treatment and care
13	I am aware of how cultural barriers may impact on the nurse-patient relationship
14	My understanding of how language and culture affect clinical assessment is
15	My understanding of how language and culture affect diagnosis is
16	I am aware of how the assumptions of culturally and linguistically diverse consumers about healthcare and therapy may affect their treatment
17	My awareness of how cultural beliefs impact on treatment is
18	I am aware of how working with traumatized consumers may affect me
19	I am aware of the difficulties of culturally and linguistically diverse consumers due to their second language proficiency
20	My ability to understand the speech of people with strong accents is
21	My skills in providing clear messages to people who may be struggling with …… are

22	I am able to negotiate with a culturally and linguistically diverse client a shared understanding of each other's beliefs regarding how illness is perceived, what causes it and how it should be treated
23	My ability to develop a culturally appropriate treatment/care plan is
24	I can develop culturally appropriate communication response styles to meet the needs of culturally and linguistically diverse consumers and their families
25	My skills in identifying strategies for promoting health with culturally and linguistically diverse consumers are
26	My skills in identifying strategies for preventing illness with culturally and linguistically diverse consumers are
27	My skills in building nurse-patient relationship with culturally and linguistically diverse consumers are
28	My ability to respond to the needs of torture of culturally and linguistically diverse consumers and trauma survivors is
29	I am able to address the service barriers for culturally and linguistically diverse consumers
30	My skills in working with interpreters are

6. DISCUSSION OF RESULTS

In this study we analyze the psychometric properties of the Portuguese, Spanish and Flemish versions of the MHAS, in a sample of European nursing undergraduate students over 18 years of age, and we found a model for all countries.

A convenience sample of 741 undergraduate nursing students was recruited from three European higher education institutions: Escola Superior de Enfermagem de Coimbra, Portugal (n = 311), Faculty of Nursing of the UCLM, Spain (n = 231), and Faculty of Nursing of the UCLL, Belgium (n = 199) . In the total sample, female students (n = 616; 83.13%) outnumbered male students (n = 104; 14.09%). In terms of age, students were between 18 and 50 years. The average age of the entire sample is 21.98 years.

Concerning their academic course year, most participants were in their first-year (n = 388, 52.36%), followed by second (n = 185, 25%), third year (n = 139, 18.76%), and fourth-year (n = 10, 1.35%).

The analysis of the distribution by sex in the three nursing student samples confirms the significant majority of female students, with Belgian nursing students displaying a pronounced gender disparity. This finding reflects the traditional feminization of the nursing profession, where women have historically comprised a substantial portion of nursing students. To promote gender diversity and equality in nursing, it is essential to challenge societal stereotypes, encourage broader career choices, and create inclusive environments that attract and support students of all genders.

In the 3 countries, the higher representation of domestic students aligns with the usual enrollment patterns in nursing programs, where students often pursue their studies in their home country. The presence of few foreign students in the nursing courses may have implications for the multicultural perspective and diversity within the nursing education environment. The limited representation of international students could impact the breadth of cultural perspectives and experiences brought into the classroom and clinical settings.

However, it is essential to acknowledge that the sample used in the study might not be fully representative of the overall nursing student population in the partner institutions or the respective countries. The findings reflect the specific participants who responded to the questionnaire and may not capture the complete diversity within the nursing programs in the 3 institutions. The academic and training environment of European nursing students in academic institutions with little cultural, ethnic, and national diversity, leading to a culturally homogeneous environment, can have significant implications for their training in MulticulturalCare. The analysis of nursing students in three partner countries indicates a significant lack of training in multicultural competencies among the majority of participants in this study. Particularly, Portugal stands out as having fewer students reporting any form of training compared to the other countries involved. This finding highlights the lack of training in multicultural competencies among nursing students and suggests potential challenges in delivering culturally competent care in multicultural settings. Nursing students who have not received adequate

training may struggle to understand and address the unique healthcare needs and cultural perspectives of patients from diverse backgrounds. This can lead to misunderstandings, ineffective communication, and suboptimal care outcomes. The specific emphasis on Portugal as having fewer students reporting any form of training in multicultural competencies compared to the other countries raises concerns about the educational curriculum and resources available in the Portuguese nursing education system. It highlights the need for further investigation into the factors contributing to this disparity, such as curriculum design, faculty training, and institutional support for multicultural education.

Firstly, exposure to a culturally homogeneous environment limits the opportunity for nursing students to develop a deep understanding of different cultural perspectives, values, and practices. Without exposure to diverse cultures, nursing students may lack the necessary knowledge and cultural sensitivity required to address the unique healthcare needs of individuals from diverse backgrounds. Furthermore, a culturally homogeneous environment can perpetuate stereotypes, biases, and assumptions. Without first-hand experiences or interactions with individuals from diverse cultures, nursing students may rely on generalizations or stereotypes, which can lead to misunderstandings and ineffective care practices. It is important for nursing students to have exposure to diverse cultural contexts to challenge and overcome these biases, ensuring they provide equitable and patient-centered care. To address these limitations, it is crucial for European nursing education institutions to actively foster cultural diversity within their academic and training environments. By creating inclusive and diverse academic and training environments, European nursing students can enhance their cultural competence, communication skills, and understanding of diverse healthcare practices. Further research and initiatives could explore strategies to attract and support a more diverse student body, including increasing the participation of foreign students, as it can contribute to a richer multicultural learning environment and enhance the cultural competence development of nursing students.

As for reliability of the scale, the Portuguese version, the Spanish Version and the Flemish version of the MHAS showed excellent internal consistency. The Factor Analysis, whether exploratory or confirmatory, demonstrated this is a robust measure for assessing multicultural competences in the three countries, with the withdrawal of 5 items from the original scale. Thus, we conclude the cross-cultural study, with a good model that can be used for the purposes it intended to achieve.

Some methodological limitations to consider when interpreting the results include convenience sampling, which limits the generalizability of the results; the use of a cross-sectional design, which makes it impossible to analyze the temporal reliability of the MHAS (Multicultural Health Awareness Scale) for Nursing Students and the fact that other measures of autonomy were not used to assess the convergent validity of the instrument, in the 3 linguistic versions that were studied. Despite these limitations, the MHAS proved to be a valid and reliable instrument for the assessment of multicultural competences in European nursing students.

This study has other limitations that need to be addressed. Firstly, the participants were recruited in a non-randomized manner, which could limit the generalizability of the findings. Likewise, our model

analysis did not consider the potential differences in undergraduate students' multicultural competencies during the advancement of their studies.

7. CONCLUSIONS

The IO3 - MulticulturalCare Competencies of Nursing Students was designed to comprehensively assess a wide range of skills, considering different pedagogical strategies, learning contexts, and the social diversity of the students involved and using the MulticulturalCare Nursing Educational Model, and the MulticulturalCare e-book and Simulation Scenarios (Monteiro, Melgar de Corral & Ugarte-Gurrutxaga, 2023). The evaluation of multicultural nursing students' skills is essential to ensure the delivery of culturally competent care. Assessing attitudes, knowledge, and skills, within a multicultural context enables educators and institutions to identify areas for improvement and provide targeted interventions. By fostering cultural competence among nursing students, we can enhance the quality of healthcare provided to individuals from diverse backgrounds, promoting better health outcomes and patient satisfaction (Camarneiro, Xavier, Cunha-Oliveira, Monteiro, Melgar de Corral & Ugarte-Gurrutxaga (2023).

The validation studies conducted in Portugal, Spain, and Belgium revealed that the MHAS possesses sound psychometric properties and is suitable for use in each of the three countries where it has been validated, rendering it a useful tool in assessing nursing students' multicultural competencies. Moreover, given its structure, content, and nature, future researchers may want to explore the MHAS for assessing multicultural competencies in health among students from different backgrounds, such as medicine, physiotherapy, and pharmacy and healthcare professionals, according to the MulticulturalCare Nursing Education Model principles.

The final version of the MHAS included 30 items, organized into **3 factors** overlapping the findings of the original scale from which this measurement instrument was constructed. Conceptually, according to the model by Sue et al., multicultural health competence is a multidimensional construct that includes cultural awareness, cultural knowledge and practical skills for culturally sensitive health care. These dimensions are considered in multiple theoretical models for the characterization of multicultural competencies in nursing (Campinha-Bacote, 2002) and are part of the core competencies expected for students in the Multicultural Nursing Education Model (Multiculturalcare Projec Brochuret, 2022).

The combination of these three dimensions in a global index constitutes a good indicator of the acquisition of multicultural competencies for nursing care. Additionally, the relevance that each of these dimensions assumes in the learning process may vary according to the student's development stage throughout the degree and the specific learning in these areas provided by the nursing curricula, in an academic, clinical and community context.

8. FURTHER RECOMMENDATIONS

The development of comprehensive assessment instruments for implementing the results of MULTICULTURAL CARE NURSING EDUCATION MODEL (2022) should encompass both qualitative and quantitative assessments of multicultural competencies in nursing students.

Quantitative assessment

Multicultural Health Awareness Health (MHAS) *for nursing students, 30 items. Assess three competencies: Cultural Awareness, Cultural Knowledge and Cultural Skills (Table 24).*

Qualitative assessment

Qualitative assessment of multicultural competencies in nursing students involves evaluating their abilities, knowledge, and other skills related to providing culturally competent care to diverse patient populations: *Openness to Others; Cultural Encounter, Intercultural Communication; Dealing with Cultural Ambiguity; Digital Health Skills; Socio-Political Knowledge and Social Transformative Leadership.*

Here are some approaches and methods that can be used for qualitative assessment in this context:

- **Reflective journals**: Ask nursing students to maintain reflective journals throughout their clinical experiences. These journals provide a platform for students to express their thoughts, feelings, and reflections on their encounters with culturally diverse patients. By reviewing these journals, educators can gain insights into students' understanding of cultural differences, their self-awareness, and their ability to adapt their care practices accordingly.

- **Case studies and scenario-based assessments:** Present nursing students with case studies or scenarios that involve culturally diverse patients. Ask them to analyze and provide responses, considering cultural factors that may influence patient care. This assessment method helps evaluate students' ability to recognize and address cultural needs, identify potential biases, and apply culturally appropriate interventions.

- **Pedagogical scenario analysis and discussion**: Develop a detailed checklist or observation sheet that can be used during the viewing of pedagogical scenarios. Educators can take notes and fill in the checklist to analyze and discuss the observed practices, strategies, and outcomes related to cross-cultural interactions.

- **Group discussions and debriefings:** Organize group discussions or debriefings after clinical experiences or simulation exercises that involve multicultural scenarios. These discussions allow students to share their perspectives, challenges encountered, and strategies used to provide culturally competent care. Facilitators can guide the discussions to explore students' cultural sensitivity, communication skills, and critical thinking in managing cross-cultural situations.

- **Cultural immersion experiences:** Offer students opportunities to engage in cultural immersion experiences, such as community visits or interactions with diverse cultural groups. Afterward, conduct focus group discussions to elicit students' reflections, learning outcomes, and personal growth regarding cultural competence. This approach allows for rich qualitative data collection on students' cultural awareness, empathy, and cultural knowledge acquisition.

- **Observations and preceptor feedback:** Encourage nursing teachers and clinical instructors to observe nursing students' interactions with culturally diverse patients. These observations can provide valuable insights into students' communication skills, respect for cultural differences, and their ability to provide patient-centered care. Solicit feedback from preceptors to gain a comprehensive understanding of students' multicultural competencies.

- **Personal narratives and storytelling**: Invite nursing students to share personal narratives or stories related to their experiences with multicultural patients. This can be in the form of written narratives, verbal presentations, or multimedia projects. This assessment method allows students to reflect on their cultural encounters, explore their biases and assumptions, and demonstrate their growth in cultural competence through storytelling.

- **Open-ended questionnaires:** Design open-ended questionnaires to gather qualitative feedback from teachers, peers, and students. These questionnaires students can explore their experiences, perceptions, and suggestions regarding the multicultural care competencies, allowing for rich qualitative data collection.

- **Interviews in small groups:** Conducting interviews with teachers, students, and other stakeholders in small groups provides an opportunity for in-depth discussions about their experiences, challenges, and insights related to cross-cultural interactions. These interviews can be semi-structured to allow flexibility and explore individual perspectives.

- **Individual and group student reflections (self-reflection)**: Encourage students to reflect individually and in groups on their experiences and interactions with migrant populations. This can be done through structured reflection prompts or questions, allowing for quantitative data collection on their growth, learning outcomes, and attitudes towards cultural diversity.

- **Creation of logbooks:** Students can create logbooks to record their interactions, experiences, and reflections during their engagement with migrant populations. These logbooks can be presented and discussed among peers and the pedagogical team, providing quantitative insights into the progress and development of students' cross-cultural competencies.

By incorporating a combination of qualitative and quantitative multicultural competencies assessment methods, such as those mentioned above, it is possible assessment can provide a comprehensive understanding of the effectiveness, impact challenges, and areas for improvement within the Multicultural Care Nursing Education Model. It enables educators and stakeholders to evaluate the

outcomes, identify successful practices, and make informed decisions for further enhancements and adjustments to the model.

9. REFERENCES

American Psychological Association. Ethical Principles of Psychologists and Code of Conduct.

Beaton, D., Bombardier, C., Guillemin, F., Ferraz, M. F. (2007). *Recommendations for the Cross-Cultural Adaptation of the DASH & QuickDASH Outcome Measures*. Institute for Work & Health.

Camarneiro, A.P., Xavier, B., Cunha-Oliveira, A., Monteiro, A.P., Melgar de Corral, G. & Ugarte-Gurrutxaga, M.I (2023). Key Principles of The Multiculturalcare Nursing Education Model. In A.P. Monteiro, G. Melgar de Corral & M. I. Ugarte-Gurrutxaga (Coords.), E-book: MulticulturalCare project: Educating students through innovative learning methods to intervene in multicultural complex contexts (2020-1-PT01-KA203-078530) (pp. 9–38). Nursing School of Coimbra; University of Castilla - La Mancha; UC Leuven - Limburg.

Campinha-Bacote J. (2011). Delivering Patient-Centered Care in the Midst of a Cultural Conflict: The Role of Cultural Competence. OJIN: The Online Journal of Issues in Nursing. 16 (2): 5.DOI 10.3912/OJIN.Vol16No02Man05.

de Almeida Vieira Monteiro, A. P., & Fernandes, A. B. (2016). Cultural competence in mental health nursing: validity and internal consistency of the Portuguese version of the Multicultural Mental Health Awareness Scale-MMHAS. BMC Psychiatry, 16, 149. https://doi.org/10.1186/s12888-016-0848-z.

Hair, J. F., & Anderson, R. E. (2010). Multivariate Data Analysis. Scientific Research an Academic Publisher, (7).

Hill, M., & Hill, A. (2008). Investigação por Questionário (2ª Ed). Edições Sílabo.

Hu, Li-Tze., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6:1, 1-55, DOI: 10.1080/10705519909540118.

Khawaja, N.G.; Gomez, I., & Turner, G. (2009). Development of the Multicultural Mental Health Awareness Scale. Australian Psychologist, June 2009; 44(2): 67–77.

Monteiro, A P., Melgar de Corral, G. Ugarte-Gurrutxaga, M. I. (Coords.) (2023). E-Book - MulticulturalCare Project: Educating students through innovative learning methods to intervene in multicultural complex contexts (2020-1-PT01-KA203-078530). Nursing School of Coimbra; University of Castilla-La Mancha; UC Leuven-Limburg - E-Book.

Monteiro, A., & Fernandes, A. (2015). Cultural Validation of the Portuguese Version of the Multicultural Mental Health Awareness Scale – MMHAS. European Psychiatry, 30(S1), 1-1. doi:10.1016/S0924-9338(15)30232-7.

MulticulturalCare Project - Educating students through innovative learning methods to intervene in complex multicultural contexts (2022). MultiCulturalCare Model for Nursing Education [Brochure]. desdobrável - en-direitos (esenfc.pt)

Sue, D. W., Arredondo, P., & McDavis, R. J. (1992). Multicultural counseling competencies and standards: A call to the profession. Journal of Counseling & Development, 70(4), 477–486. https://doi.org/10.1002/j.1556-6676.1992.tb01642.x

APPENDIX

APPENDIX 1 - MHAS translated to Portuguese - **Portuguese version**

MHAS – PT version
Itens
1. O meu conhecimento sobre outras culturas é:
2. O meu conhecimento sobre processos de aculturação é:
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo. associações de imigrantes, ONGs).
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) é:
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários é:
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários é:
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos é:
10. O meu conhecimento sobre implementação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança é:
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica é:
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.

18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem é:

19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.

20. A minha consciência sobre o impacto das crenças culturais no tratamento é:

21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.

22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação é:

23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde e:

24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.

25. A minha capacidade para compreender o discurso de pessoas que falam Português com sotaques muito pronunciados é:

26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa é:

27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percecionada, sobre as causas da doença e sobre a forma com esta deve ser tratada.

28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado é:

29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.

30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:

31. As minhas competências na identificação de estratégias para a prevenção de doença em utentes de grupos culturais minoritários são:

32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários é:

33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritários sobreviventes de situações de trauma e tortura é:

34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.

35. As minhas competências no trabalho com intérpretes/mediadores culturais são:

APPENDIX 2 - MHAS translated to Spanish - **Spanish version**

MHAS – SP version
Itens
1. Mi conocimiento sobre las diferentes culturas es:
2. Mi conocimiento sobre la aculturación es
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo, asociaciones de inmigrantes, ONGs).
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:
5. Entiendo la política multicultural del Gobierno de España
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.
9. Mi conocimiento de los marcos te√≥ricos para el desarrollo de una atención sanitaria culturalmente sensible es:
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente
16. Mi comprensión de c√≥mo afectan el lenguaje y la cultura a la evaluación clínica es:
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.
20. Soy consciente de que las creencias culturales influyen en el tratamiento.
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es:
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:

24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda
Lengua

25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:

26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:

27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, cuál es la causa y cómo debe a tratarse.

28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:

29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.

30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:

31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:

32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:

33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:

34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.

35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:

APPENDIX 3 - MHAS translated to Flemish - **Flemish version**

MHAS – Flemish version
Itens
1. Mijn kennis over verschillende culturen is...
2. Mijn kennis over acculturatie is...Acculturatie   is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.
3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten
4. Mijn kennis over het Belgische migratiebeleid is...
5. Ik begrijp het multiculturele beleid in België
6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..
7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten
8. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.
9. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...
10. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...
11. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.
12. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt
13. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden
14. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg
15. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie
16. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...
17. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.
18. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…
19. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.

20. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...

21. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden

22. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....

23. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…

24. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.

25. Mijn vermogen om personen met een sterk accent te begrijpen is...

26. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….

27. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.

28. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…

29. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen

30. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…

31. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...

32. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...

33. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt. is ...

34. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken

35. Mijn vaardigheden om met tolken te werken zijn…

ANNEX

The Portuguese version of the Multicultural Health Awareness Scale (MHAS)

Annex 1. Reliability study of items from the Portuguese version of the Multicultural Health Awareness Scale (MHAS) (Cronbach's α coefficient 35 items is 0.945)

Item-total stats				
Item	Average scale if item is deleted	Scale variance if item is excluded	Total item correlation	Cronbach's alpha if item is deleted
1.	110.30	323.234	0.461	0.945
2.	110.75	319.907	0.461	0.945
3.	110.65	320.116	0.426	0.945
4.	111.46	318.892	0.471	0.945
5.	111.01	317.451	0.512	0.944
6.	111.03	315.948	0.555	0.944
7.	110.56	314.651	0.592	0.944
8.	111.09	316.360	0.536	0.944
9.	110.97	314.774	0.574	0.944
10.	110.83	315.437	0.577	0.944
11.	110.82	312.825	0.586	0.944
12.	109.89	315.032	0.552	0.944
13.	109.59	315.783	0.576	0.944
14.	109.65	317.253	0.518	0.944
15.	109.57	318.148	0.521	0.944
16.	109.64	318.592	0.534	0.944
17.	110.21	312.991	0.660	0.943
18.	109.76	318.922	0.527	0.944
19.	109.71	318.658	0.513	0.944
20.	109.70	319.382	0.496	0.944
21.	109.58	321.833	0.425	0.945
22.	109.94	319.120	0.501	0.944
23.	110.27	316.941	0.551	0.944
24.	109.79	319.134	0.509	0.944
25.	109.74	319.579	0.501	0.944
26.	109.92	318.412	0.532	0.944

27.	110.15	314.784	0.650	0.943
28.	110.47	312.684	0.666	0.943
29.	110.35	311.445	0.716	0.943
30.	110.48	312.326	0.698	0.943
31.	110.53	313.486	0.685	0.943
32.	110.23	314.657	0.597	0.944
33.	110.44	313.018	0.659	0.943
34.	110.13	315.850	0.612	0.944
35.	110.51	313.938	0.619	0.943

Annex 2. Item Statistics of of MHAS Portuguese Version

Item Statistics			
Item	**M**	**SD**	**N**
1.	3.22	0.681	311
2.	2.77	0.868	311
3.	2.87	0.919	311
4.	2.07	0.907	311
5.	2.51	0.915	311
6.	2.49	0.922	311
7.	2.96	0.927	311
8.	2.43	0.930	311
9.	2.55	0.948	311
10.	2.69	0.912	311
11.	2.71	1.019	311
12.	3.63	0.970	311
13.	3.93	0.898	311
14.	3.87	0.915	311
15.	3.95	0.865	311
16.	3.88	0.824	311
17.	3.31	0.907	311
18.	3.76	0.817	311
19.	3.81	0.852	311
20.	3.82	0.840	311
21.	3.94	0.818	311
22.	3.58	0.846	311
23.	3.25	0.880	311
24.	3.73	0.833	311
25.	3.78	0.821	311
26.	3.60	0.836	311
27.	3.37	0.845	311
28.	3.05	0.911	311
29.	3.17	0.899	311
30.	3.04	0.887	311
31.	2.99	0.856	311
32.	3.29	0.920	311
33.	3.08	0.906	311
34.	3.39	0.846	311
35.	3.01	0.921	311

Annex 3. Reliability statistics of the two parts of the of MHAS Portuguese Version

Reliability statistics			
Cronbach's alpha	**Part 1**	**Value**	0.907
		N itens	18[a]
	Part 2	**Value**	0.925
		N itens	17[b]
	N total items		35
Correlation			0.678
Spearman–Brown coefficient	**Equal length**		0.808
	Unequal length		0.808
Guttman coefficient			0.808

Annex 4. Commonalities of MHAS Portuguese Version. Principal Component Analysis Extraction Method.

	Commonalities	
Itens	**Initial**	**Extraction**
1. O meu conhecimento sobre outras culturas é:	1.000	.300
2. O meu conhecimento sobre processos de aculturação é:	1.000	.354
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo. associações de imigrantes, ONGs).	1.000	.366
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) é:	1.000	.649
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.	1.000	.612
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários e:	1.000	.685
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários é:	1.000	.560
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.	1.000	.723
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos é:	1.000	.630
10. O meu conhecimento sobre implantação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança é:	1.000	.593
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.	1.000	.647
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.	1.000	.565
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.	1.000	.623
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.	1.000	.575
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.	1.000	.693
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica é:	1.000	.676
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.	1.000	.535
18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem é:	1.000	.536
19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.	1.000	.635
20. A minha consciência sobre o impacto das crenças culturais no tratamento é:	1.000	.560
21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.	1.000	.398
22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação é:	1.000	.371

23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde é:	1.000	.346
24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.	1.000	.475
25. A minha capacidade para compreender o discurso de pessoas que falam Portugues com sotaques muito pronunciados é:	1.000	.300
26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa é	1.000	.386
27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percecionada. sobre as causas da doença e sobre a forma com esta deve ser tratada.	1.000	.566
28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado é:	1.000	.681
29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.	1.000	.740
30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:	1.000	.699
31. As minhas competências na identificação de estratégias para a prevencao de doenca em utentes de grupos culturais minoritários são:	1.000	.706
32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários é:	1.000	.613
33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritarios sobreviventes de situacoes de trauma e tortura é:	1.000	.692
34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.	1.000	.538
35. As minhas competências no trabalho com intérpretes/mediadores culturais são:	1.000	.622

Annex 5. Total variance explained by extraction forced of MHAS Portuguese Version.

Total variance explained									
Component	Initial eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% variance	% cumulative	Total	% variance	% cumulative	Total	% de variance	% cumulative
1	12.431	35.518	35.518	12.431	35.518	35.518	6.801	19.431	19.431
2	4.676	13.360	48.878	4.676	13.360	48.878	6.507	18.593	38.024
3	2.537	7.248	56.126	2.537	7.248	56.126	6.336	18.102	56.126
4	1.221	3.489	59.615						
5	1.092	3.121	62.736						
6	.980	2.800	65.536						
7	.878	2.509	68.045						
8	.802	2.292	70.337						
9	.792	2.261	72.599						
10	.748	2.136	74.735						
11	.664	1.897	76.632						
12	.573	1.638	78.270						
13	.540	1.541	79.811						
14	.534	1.526	81.337						
15	.507	1.448	82.785						
16	.490	1.401	84.186						
17	.464	1.326	85.512						
18	.450	1.286	86.797						
19	.418	1.195	87.992						
20	.394	1.126	89.118						
21	.364	1.039	90.157						
22	.340	.973	91.130						
23	.328	.937	92.067						
24	.312	.893	92.960						
25	.299	.856	93.816						
26	.291	.832	94.648						
27	.279	.797	95.445						
28	.242	.692	96.137						
29	.229	.653	96.790						
30	.215	.613	97.403						
31	.207	.592	97.995						
32	.201	.574	98.569						
33	.181	.517	99.086						
34	.168	.479	99.565						
35	.152	.435	100.000						
Extraction Method: Principal Component Analysis									

Annex 6. Principal component analysis (PCA) of MHAS Portuguese Version

Matrix component[a]			
	Component		
	1	2	3
1. O meu conhecimento sobre outras culturas é:	.484	-.224	.116
2. O meu conhecimento sobre processos de aculturação é:	.482	-.255	.233
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo, associações de imigrantes, ONGs).	.449	-.377	.154
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) e:	.495	-.608	.187
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.	.532	-.521	.244
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários é:	.568	-.530	.283
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários é:	.609	-.314	.302
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.	.557	-.602	.224
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos é:	.593	-.470	.239
10. O meu conhecimento sobre implementação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança é:	.598	-.425	.234
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.	.608	-.483	.214
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.	.566	.317	.379
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.	.604	.394	.320
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.	.550	.436	.293
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.	.549	.535	.322
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica é:	.563	.558	.220
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.	.685	.179	.182
18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem é:	.561	.459	.111
19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.	.545	.541	.210
20. A minha consciência sobre o impacto das crenças culturais no tratamento é:	.532	.522	.057
21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.	.458	.432	.034
22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação e:	.535	.289	-.027
23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde e:	.582	.075	-.011
24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.	.545	.421	.025
25. A minha capacidade para compreender o discurso de pessoas que falam Portugues com sotaques muito pronunciados e:	.537	.102	-.030
26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa é:	.572	.177	-.168
27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percepcionada, sobre as causas da doença e sobre a forma com esta deve ser tratada.	.692	.001	-.296
28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado é:	.713	-.096	-.406
29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.	.758	-.108	-.391

30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:	.741	-.068	-.381
31. As minhas competências na identificação de estratégias para a prevenção de doença em utentes de grupos culturais minoritários são:	.729	-.120	-.398
32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários é:	.648	.045	-.436
33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritários sobreviventes de situações de trauma e tortura é:	.705	-.040	-.437
34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.	.656	-.007	-.327
35. As minhas competências no trabalho com intérpretes/mediadores culturais são:	.666	-.110	-.408
Extraction Method: Principal Component Analysis			
a. 3 components extraction.			

Annex 7. Orthogonal varimax with Kaiser Normalization of PCA of MHAS Portuguese Version

	Component		
	1	2	3
1. O meu conhecimento sobre outras culturas é:	.161	**.474**	.219
2. O meu conhecimento sobre processos de aculturação é:	.185	**.549**	.127
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo. associações de imigrantes, ONGs).	.047	**.579**	.173
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) é:	-.079	**.780**	.186
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.	.027	**.766**	.160
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários é:	.057	**.811**	.153
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários é:	.243	**.692**	.154
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.	-.025	**.828**	.195
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos é:	.096	**.762**	.200
10. O meu conhecimento sobre implementação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança é:	.129	**.731**	.206
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.	.085	**.767**	.229
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.	**.702**	.266	.040
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.	**.755**	.205	.106
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.	**.743**	.133	.093
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.	**.825**	.077	.064
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica é:	**.808**	.022	.153
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.	**.590**	.334	.274
18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem é:	**.691**	.038	.241
19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.	**.781**	.019	.150
20. A minha consciência sobre o impacto das crenças culturais no tratamento é:	**.698**	-.047	.263
21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.	**.582**	-.035	.239
22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação é:	**.499**	.078	.340
23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde é:	**.379**	.259	**.366**
24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.	**.620**	.016	.300
25. A minha capacidade para compreender o discurso de pessoas que falam Português com sotaques muito pronunciados é:	**.365**	.208	**.352**
26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa é:	.382	.109	**.478**

27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percepcionada, sobre as causas da doença e sobre a forma com esta deve ser tratada.	.271	.237	**.660**
28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado é:	.169	.265	**.763**
29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.	.191	.305	**.781**
30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:	.214	.272	**.761**
31. As minhas competências na identificação de estratégias para a prevenção de doença em utentes de grupos culturais minoritários são:	.164	.294	**.768**
32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários é:	.221	.118	**.741**
33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritários sobreviventes de situações de trauma e tortura é:	.192	.208	**.781**
34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.	.233	.209	**.663**
35. As minhas competências no trabalho com intérpretes/mediadores culturais são:	.131	.248	**.737**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a] aConverged rotation in 5 iterations.			

Annex 8. item-total stats of AWARENESS dimension of MHAS Portuguese Version

item-total stats				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
12. Eu compreendo como o meu próprio contexto cultural influencia o meu trabalho com utentes de diversos grupos culturais minoritários.	44.83	54.042	.634	.912
13. Eu estou consciente do modo como a cultura de um utente de um grupo cultural minoritário tem impacto na sua saúde.	44.53	53.902	.708	.909
14. Eu estou familiarizado sobre a forma como as barreiras culturais têm impacto nas terapêuticas e nos cuidados.	44.58	54.032	.682	.910
15. Eu estou consciente do modo como as barreiras culturais podem ter impacto na relação terapêutica entre enfermeiro e utente.	44.50	53.819	.747	.908
16. A minha compreensão sobre o modo como a linguagem e a cultura afetam a avaliação clínica e:	44.57	54.160	.759	.907
17. Eu estou consciente de que existe um enviesamento cultural inerente a vários instrumentos de medição e avaliação em saúde.	45.14	54.654	.640	.912
18. A minha compreensão sobre a forma como a linguagem e a cultura influenciam o diagnóstico de enfermagem e:	44.70	55.221	.672	.911
19. Eu estou ciente da forma como as ideias prévias de utentes de grupos culturais minoritários acerca dos cuidados de saúde podem afetar o seu tratamento.	44.64	54.195	.728	.908
20. A minha consciência sobre o impacto das crenças culturais no tratamento é:	44.64	55.083	.663	.911
21. Eu estou consciente do modo como o trabalho com utentes com traumas emocionais me pode afetar.	44.52	56.386	.570	.914
22. A minha compreensão sobre os fatores de stress experienciados pelas famílias em resultado dos processos de pós-migração e adaptação é:	44.88	56.250	.558	.915
23. A minha compreensão sobre a associação existente entre Identidade Cultural e Saúde é:	45.21	56.954	.476	.918
24. Eu estou consciente das dificuldades sentidas por utentes de grupos culturais e linguísticos minoritários relacionados com a proficiência numa segunda língua.	44.72	55.658	.620	.913

Annex 9. item-total stats of KNOWLEDGE dimension of MHAS Portuguese Version

item-total stats				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
1. O meu conhecimento sobre outras culturas e:	26.06	49.322	.480	.917
2. O meu conhecimento sobre processos de aculturação e:	26.51	47.412	.520	.916
3. Eu estou familiarizado com os potenciais recursos comunitários existentes no apoio a grupos culturais minoritários (por exemplo, associações de imigrantes, ONGs).	26.41	46.720	.542	.915
4. O meu conhecimento sobre o Plano Estratégico para as Migrações (Portugal) e:	27.22	44.763	.723	.906
5. Eu compreendo as políticas portuguesas para a Multiculturalidade.	26.77	44.841	.710	.907
6. O meu conhecimento sobre serviços de integração e apoio a utentes de grupos culturais e linguísticos minoritários e:	26.79	44.082	.771	.904
7. O meu conhecimento sobre as principais barreiras no acesso aos cuidados de saúde por utentes de grupos culturais e linguísticos minoritários e:	26.32	45.127	.673	.909
8. Eu estou informado sobre as políticas do governo português em matéria de diversidade cultural e prestação de serviços de saúde a grupos culturais e linguísticos minoritários.	26.85	43.894	.780	.903
9. O meu conhecimento sobre referenciais teóricos para desenvolver cuidados de saúde culturalmente responsivos e:	26.73	44.146	.740	.905
10. O meu conhecimento sobre implementação de serviços de saúde culturalmente adequados, capazes de dar respostas eficazes e produzir mudança e:	26.59	44.895	.708	.907
11. Estou familiarizado com as vantagens e desvantagens dos vários modelos de serviços de saúde para populações de grupos culturais e linguísticos minoritários.	26.58	43.270	.750	.905

Annex 10. Item-total stats of SKILLS dimension of MHAS Portuguese version

item-total stats				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
25. A minha capacidade para compreender o discurso de pessoas que falam Português com sotaques muito pronunciados è:	32.00	48.190	.459	.931
26. A minha capacidade para transmitir mensagens claras a pessoas com dificuldades na língua portuguesa e:	32.18	47.116	.548	.927
27. Eu sou capaz de negociar com um utente de um grupo cultural minoritário uma compreensão partilhada das crenças de cada um sobre a forma como a doença é percecionada, sobre as causas da doença e sobre a forma com esta deve ser tratada.	32.41	45.390	.701	.921
28. A minha competência para desenvolver um plano de tratamento/plano de cuidados culturalmente adequado e:	32.73	43.933	.772	.917
29. Eu consigo desenvolver estilos de resposta culturalmente adequados às necessidades de utentes de grupos culturais minoritários e suas famílias.	32.61	43.633	.811	.916
30. As minhas competências na identificação de estratégias para a promoção da saúde de pessoas de grupos culturais minoritários são:	32.74	44.005	.790	.917
31. As minhas competências na identificação de estratégias para a prevenção de doença em utentes de grupos culturais minoritários são:	32.78	44.421	.784	.917
32. A minha capacidade de construir uma relação terapêutica entre enfermeiro-utente com pessoas de grupos culturais e linguísticos minoritários e:	32.49	44.493	.714	.920
33. A minha capacidade para responder as necessidades dos utentes de grupos culturais minoritários sobreviventes de situações de trauma e tortura e:	32.70	44.034	.768	.918
34. Eu considero-me capaz de lidar com as barreiras existentes nos serviços de saúde para indivíduos de grupos culturais e linguísticos minoritários.	32.39	45.665	.675	.922
35. As minhas competências no trabalho com intérpretes/mediadores culturais são:	32.76	44.530	.710	.920

Annex 11. Item-Total stats of MHAS Spanish Version (Cronbach's Alpha for the MHAS Spanish version, 35 items, is 0.946).

	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
1. Mi conocimiento sobre las diferentes culturas es:	110.87	332.780	.401	.946
2. Mi conocimiento sobre la aculturación es	111.56	331.004	.349	.946
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo, asociaciones de inmigrantes, ONGs).	111.40	326.807	.429	.946
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:	112.17	327.831	.424	.946
5. Entiendo la política multicultural del Gobierno de España	111.76	326.689	.450	.945
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:	111.50	325.668	.497	.945
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:	111.14	323.920	.537	.945
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.	111.71	321.756	.599	.944
9. Mi conocimiento de los marcos teoricos para el desarrollo de una atención sanitaria culturalmente sensible es:	111.34	321.033	.607	.944
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:	111.33	322.562	.593	.944
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.	111.36	322.554	.580	.944
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	110.84	317.558	.637	.944
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	110.45	321.509	.615	.944
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	110.58	320.784	.648	.944
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	110.26	322.578	.620	.944
16. Mi comprensión de cómo el lenguaje y la cultura afectan a la evaluación clínica es:	110.37	323.904	.585	.944
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	110.91	318.706	.639	.944

18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	110.41	324.739	.594	.944
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	110.40	322.119	.633	.944
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	110.09	327.735	.508	.945
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	110.32	325.706	.536	.945
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es:	110.67	324.404	.558	.944
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	110.86	323.097	.623	.944
24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda lengua	110.44	322.448	.607	.944
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:	110.27	330.345	.388	.946
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:	110.63	329.121	.436	.945
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, cuál es la causa y cómo debe a tratarse.	110.69	325.633	.581	.944
28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:	111.02	322.617	.639	.944
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.	110.91	323.179	.676	.944
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:	111.00	322.065	.665	.944
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:	111.01	320.174	.704	.943
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:	110.74	324.297	.626	.944
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:	111.04	322.616	.602	.944
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.	110.84	325.150	.579	.944
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:	110.82	325.825	.512	.945

Annex 12. KMO and Bartlett tests of the MHAS Spanish version

KMO and Bartlett tests		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.928
Bartlett's Test of Sphericity	Approx. Chi-square	4624.313
	gl	595
	Sig.	.000

Annex 13. Commonalities of MHAS Spanish Version. Principal Component Analysis Extraction Method.

Communalities		
	Initial	Extraction
1. Mi conocimiento sobre las diferentes culturas es:	1.000	.262
2. Mi conocimiento sobre la aculturación es:	1.000	.279
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo. asociaciones de inmigrantes, ONGs).	1.000	.393
4. Mi conocimiento del Programa de Atención a la Inmigracion del Gobierno de España es:	1.000	.614
5. Entiendo la política multicultural del Gobierno de España	1.000	.405
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:	1.000	.550
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:	1.000	.518
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.	1.000	.650
9. Mi conocimiento de los marcos teóricos para el desarrollo de una atención sanitaria culturalmente sensible es:	1.000	.542
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:	1.000	.508
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.	1.000	.473
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	1.000	.502
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	1.000	.637
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	1.000	.634
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	1.000	.716
16. Mi comprensión de cómo el lenguaje y la cultura afectan a la evaluación clínica es:	1.000	.545
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	1.000	.568
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	1.000	.631
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	1.000	.716
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	1.000	.587
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	1.000	.478

22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es:	1.000	.462
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	1.000	.449
24. Soy consciente de las dificultades de los grupos culturalesminoritarios relacionadas con su dominio de una segunda lengua	1.000	.538
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:	1.000	.280
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:	1.000	.379
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, que la causa, y cómo debería tratarse.	1.000	.477
28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:	1.000	.579
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.	1.000	.637
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:	1.000	.574
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:	1.000	.641
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:	1.000	.596
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:	1.000	.577
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.	1.000	.551
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:	1.000	.464
Extraction Method: Principal Component Analysis.		

Annex 14. Total variance explained of the MHAS Spanish version

Total variance explained									
Component	Initial eigenvalues			Extracts of loads squared			Rotation sums of loads squared		
	Total	% variance	% cumulative	Total	% variance	% cumulative	Total	% variance	% cumulative
1	12.650	36.144	36.144	12.650	36.144	36.144	6.870	19.629	19.629
2	3.394	9.698	45.842	3.394	9.698	45.842	5.909	16.882	36.511
3	2.367	6.763	52.604	2.367	6.763	52.604	5.633	16.093	52.604
4	1.300	3.714	56.318						
5	1.141	3.261	59.579						
6	1.034	2.954	62.533						
7	.924	2.641	65.174						
8	.880	2.514	67.688						
9	.838	2.395	70.083						
10	.747	2.134	72.217						
11	.686	1.961	74.178						
12	.656	1.874	76.052						
13	.627	1.792	77.844						
14	.591	1.689	79.533						
15	.551	1.574	81.106						
16	.493	1.408	82.515						
17	.490	1.399	83.914						
18	.477	1.363	85.277						
19	.447	1.277	86.554						
20	.431	1.230	87.784						
21	.413	1.180	88.964						
22	.407	1.163	90.127						
23	.397	1.134	91.261						
24	.362	1.035	92.296						
25	.330	.944	93.240						
26	.317	.906	94.146						
27	.282	.805	94.950						
28	.273	.780	95.730						
29	.264	.753	96.484						
30	.246	.703	97.187						
31	.228	.652	97.839						
32	.210	.599	98.438						
33	.204	.582	99.020						
34	.180	.514	99.534						
35	.163	.466	100.000						
Extraction Method: Principal Component Analysis.									

Annex 15. Principal component analysis (PCA) of MHAS Spanish Version

Matrix component			
	Component		
	1	2	3
1. Mi conocimiento sobre las diferentes culturas es:	.414	.301	.011
2. Mi conocimiento sobre la aculturación es:	.362	.377	.076
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo. asociaciones de inmigrantes, ONGs).	.437	.421	.160
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:	.425	.601	.269
5. Entiendo la política multicultural del Gobierno de España	.458	.409	.168
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:	.499	.481	.262
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:	.552	.311	.342
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.	.609	.454	.270
9. Mi conocimiento de los marcos teóricos para el desarrollo de una atención sanitaria culturalmente sensible es:	.628	.340	.180
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados. capaces de dar respuestas eficaces y producir cambio es:	.619	.244	.255
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.	.604	.283	.167
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	.669	-.118	.201
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	.653	-.319	.331
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	.685	-.267	.304
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	.667	-.444	.272
16. Mi comprensión de cómo el lenguaje y la cultura afectan a la evaluación clínica es:	.626	-.352	.169
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	.678	-.234	.232
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	.639	-.434	.185
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	.682	-.477	.154
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	.559	-.510	.117
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	.586	-.339	-.138
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es	.603	-.258	-.178
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	.659	-.107	.053
24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda lengua	.650	-.337	.039
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:	.421	-.086	-.308
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:	.465	.067	-.398
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad. que la causa, y cómo debería tratarse.	.619	.060	-.299

28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:	.677	.064	-.342
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.	.711	.082	-.354
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:	.701	.143	-.249
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:	.735	.191	-.254
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:	.665	.041	-.389
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:	.637	.166	-.378
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.	.618	.082	-.403
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:	.554	.018	-.396
Extraction Method: Principal Component Analysis.			

Annex 16. Orthogonal varimax with Kaiser Normalization of PCA of MHAS Spanish Version

Rotating component matrix[a]			
	Component		
	1	2	3
1. Mi conocimiento sobre las diferentes culturas es:	.062	.255	**.440**
2. Mi conocimiento sobre la aculturación es:	.005	.177	**.498**
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo, asociaciones de inmigrantes, ONGs).	.056	.156	**.605**
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:	-.028	.074	**.780**
5. Entiendo la política multicultural del Gobierno de España	.080	.161	**.611**
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:	.095	.115	**.726**
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:	.274	.069	**.662**
8. Conozco las politicas del gobierno en materia de diversidad cultural y prestación de servicios de salud.	.185	.170	**.766**
9. Mi conocimiento de los marcos teóricos para el desarrollo de una atención sanitaria culturalmente sensible es:	.238	.246	**.652**
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:	.326	.174	**.609**
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.	.256	.239	**.592**
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	**.579**	.222	.343
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	**.754**	.094	.243
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	**.730**	.138	.286
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	**.824**	.141	.132
16. Mi comprensión de cómo el lenguaje y la cultura afectan a la evaluación clínica es:	**.696**	.207	.134
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	**.674**	.194	.275
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	**.765**	.195	.088
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	**.808**	.243	.064
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	**.739**	.198	-.039

21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	**.540**	.432	-.010
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es:	**.480**	**.479**	.041
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	**.506**	.336	.282
24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda lengua	**.649**	.327	.101
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:	.199	**.490**	.018
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:	.088	**.599**	.114
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, que la causa, y cómo debería tratarse.	.229	**.609**	.232
28. Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:	.246	**.677**	.245
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.	.250	**.708**	.270
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:	.245	**.622**	.356
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:	.232	**.649**	.407
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:	.235	**.707**	.202
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:	.138	**.690**	.284
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.	.173	**.693**	.202
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:	.178	**.646**	.125

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

Annex 17. Item-total statistics of AWARENESS of the MHAS Spanish version

Item-total statistics					
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Multiple correlation squared	Cronbach's alpha if the item is deleted
12.Comprendo cómo mi propio bagaje cultural influye en mi trabajo con grupos culturales minoritarios.	44.26	62.680	.623	.431	.925
13. Soy consciente de cómo la cultura de los grupos culturales minoritarios influye en su salud.	43.86	62.807	.722	.578	.921
14. Estoy familiarizada/o con la forma en que las barreras culturales pueden influir en el tratamiento y los cuidados	44.00	63.030	.719	.589	.921
15. Soy consciente de cómo las barreras culturales pueden influir en la relación enfermera-paciente	43.68	62.845	.770	.688	.919
16. Mi comprensión de cómo afectan el lenguaje y la cultura a la evaluación clínica es:	43.79	64.142	.680	.547	.923
17. Soy consciente del sesgo cultural inherente en varias herramientas e instrumentos utilizados en la evaluación de la salud.	44.33	62.222	.692	.541	.922
18. Mi comprensión de cómo el lenguaje y la cultura afectan al diagnóstico enfermero es:	43.83	64.152	.726	.609	.921
19. Soy consciente de cómo las ideas previas de los grupos culturales minoritarios sobre la atención sanitaria y la terapia pueden afectar a su tratamiento.	43.81	62.561	.789	.644	.919
20. Soy consciente de que las creencias culturales influyen en el tratamiento.	43.51	65.086	.675	.544	.923
21. Soy consciente de cómo me puede afectar el trabajar con personas usuarias traumatizadas.	43.74	65.439	.593	.466	.925
22. Mi comprensión de los factores de estrés que experimentan las familias como resultado de la post-migración y adaptación es	44.09	65.288	.581	.466	.926
23. Mi comprensión de la conexión entre la Identidad Cultural y la Salud es:	44.27	65.338	.601	.438	.925
24. Soy consciente de las dificultades de los grupos culturales minoritarios relacionadas con su dominio de una segunda lengua	43.86	63.671	.684	.503	.922

Annex 18. Item-total statistics KNOWLEDGE of the MHAS Spanish version

Item-total statistics				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
1. Mi conocimiento sobre las diferentes culturas es:	26.41	42.348	.432	.879
2. Mi conocimiento sobre la aculturación es:	27.10	40.925	.429	.880
3. Estoy familiarizada/o con los recursos comunitarios existentes de apoyo a grupos culturales minoritarios (por ejemplo, asociaciones de inmigrantes, ONGs).	26.94	38.918	.544	.873
4. Mi conocimiento del Programa de Atención a la Inmigración del Gobierno de España es:	27.71	38.111	.658	.865
5. Entiendo la política multicultural del Gobierno de España	27.29	39.156	.548	.873
6. Mi conocimiento de los servicios de acogida y apoyo que se ofrecen a grupos culturales minoritarios es:	27.04	38.107	.670	.864
7. Mi comprensión de las principales barreras de acceso a los servicios sanitarios que experimentan los grupos culturales minoritarios es:	26.68	38.429	.621	.868
8. Conozco las políticas del gobierno en materia de diversidad cultural y prestación de servicios de salud.	27.24	37.211	.731	.860
9. Mi conocimiento de los marcos teóricos para el desarrollo de una atención sanitaria culturalmente sensible es:	26.87	37.841	.654	.865
10. Mi conocimiento de la implementación de servicios de salud culturalmente adecuados, capaces de dar respuestas eficaces y producir cambio es:	26.87	38.696	.613	.868
11. Conozco las ventajas y desventajas que tiene cada uno de los modelos de atención sanitaria para los grupos culturales minoritarios.	26.90	38.812	.586	.870

Annex 19. Item-total statistics of SKILLS of the MHAS Spanish version

Item-total statistics					
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Multiple correlation squared	Cronbach's alpha if the item is deleted
25. Mi capacidad para entender el discurso de personas que hablan castellano con acentos fuertes es:	32.98	38.917	.436	.288	.907
26. Mis habilidades para transmitir mensajes claros a personas con dificultades en la lengua castellana son:	33.34	38.209	.518	.398	.903
27. Soy capaz de negociar con una persona usuaria de un grupo cultural minoritario un entendimiento compartido de las creencias de cada una respecto a cómo se percibe la enfermedad, que la causa, y cómo debería tratarse.	33.40	37.571	.617	.447	.897
28.Mi capacidad para desarrollar un tratamiento/plan de cuidados culturalmente apropiado es:	33.73	36.199	.710	.556	.892
29. Puedo desarrollar estilos de respuesta culturalmente apropiados para satisfacer las necesidades de los grupos culturales minoritarios y de sus familias.	33.62	36.550	.740	.602	.891
30. Mis habilidades para identificar estrategias de promoción de la salud con grupos culturales minoritarios son:	33.71	36.509	.686	.590	.894
31. Mis habilidades para identificar estrategias de prevención de enfermedades con grupos culturales minoritarios son:	33.72	35.838	.730	.625	.891
32. Mis habilidades para construir una relación enfermera-paciente con grupos culturales minoritarios son:	33.45	36.736	.707	.553	.893
33. Mi capacidad para responder a las necesidades de grupos culturales minoritarios supervivientes a situaciones de tortura y trauma es:	33.75	35.969	.687	.513	.893
34. Soy capaz de afrontar las barreras del servicio de salud para grupos culturales minoritarios.	33.55	36.892	.668	.564	.895
35. Mis habilidades para trabajar con intérpretes/mediadores/as culturales son:	33.53	36.928	.605	.424	.898

Annex 20. Item-Total stats of MHAS Flemish Version (Cronbach's Alpha for the MHAS Flemish version, 35 items, is 0.947).

	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
9.1. Mijn kennis over verschillende culturen is...	102.27	275.894	.429	.947
9.2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.	102.94	272.302	.452	.947
9.3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten	102.80	267.729	.564	.946
9.4. Mijn kennis over het Belgische migratiebeleid is...	102.97	268.471	.585	.945
9.5. Ik begrijp het multiculturele beleid in België	102.86	268.656	.558	.946
9.6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..	102.94	268.391	.611	.945
9.7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten	102.35	271.273	.519	.946
10.1. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.	103.08	271.910	.541	.946
10.2. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...	103.07	269.097	.629	.945
10.3. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...	103.06	268.729	.634	.945
10.4. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.	102.93	267.365	.579	.946
10.5. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	101.88	273.712	.393	.947
10.6. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	101.96	273.960	.381	.947
10.7. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	101.73	269.075	.517	.946
11.1. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	101.66	269.664	.525	.946
11.2. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	101.80	266.557	.659	.945
11.3. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	102.52	266.098	.601	.945

11.4. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	101.89	266.262	.641	.945
11.5. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	102.00	268.854	.592	.945
11.6. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	101.85	269.335	.607	.945
11.7. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	101.79	269.631	.501	.946
12.1. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....	102.26	268.091	.543	.946
12.2. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	102.09	267.985	.643	.945
12.3. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	101.98	268.452	.593	.945
12.4. Mijn vermogen om personen met een sterk accent te begrijpen is...	102.25	271.655	.465	.946
12.5. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….	102.20	270.770	.558	.946
12.6. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.	102.30	267.143	.680	.945
12.7. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…	102.59	269.083	.557	.946
13.1. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen	102.29	268.806	.643	.945
13.2. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…	102.61	268.035	.684	.945
13.3. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...	102.53	268.799	.681	.945
13.4. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...	102.25	268.967	.634	.945
13.5. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt. is ...	102.56	268.350	.596	.945
13.6. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken	102.51	267.424	.644	.945
13.7. Mijn vaardigheden om met tolken te werken zijn…	102.34	268.823	.492	.946

Annex 21. KMO and Bartlett tests of the MHAS Flemish version

KMO and Bartlett tests		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .		**.907**
Bartlett's Test of Sphericity	**Approx. Chi-square**	**3661.143**
	gl	**595**
	Sig.	**.000**

Annex 22. Principal Component Analysis Communalities of the MHAS Flemish version

Communalities		
	Inicial	Extração
9.1. Mijn kennis over verschillende culturen is...	1.000	.249
9.2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.	1.000	.420
9.3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten	1.000	.511
9.4. Mijn kennis over het Belgische migratiebeleid is...	1.000	.583
9.5. Ik begrijp het multiculturele beleid in België	1.000	.580
9.6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..	1.000	.697
9.7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten	1.000	.428
10.1. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.	1.000	.638
10.2. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...	1.000	.697
10.3. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...	1.000	.703
10.4. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.	1.000	.671
10.5. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	1.000	.491
10.6. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	1.000	.564
10.7. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	1.000	.712
11.1. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	1.000	.612
11.2. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	1.000	.645

11.3. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	1.000	.418
11.4. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	1.000	.648
11.5. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	1.000	.648
11.6. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	1.000	.665
11.7. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	1.000	.456
12.1. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....	1.000	.440
12.2. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	1.000	.479
12.3. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	1.000	.503
12.4. Mijn vermogen om personen met een sterk accent te begrijpen is...	1.000	.367
12.5. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….	1.000	.509
12.6. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.	1.000	.619
12.7. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…	1.000	.556
13.1. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen	1.000	.585
13.2. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…	1.000	.617
13.3. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...	1.000	.663
13.4. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...	1.000	.487
13.5. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt, is ...	1.000	.575
13.6. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken	1.000	.623
13.7. Mijn vaardigheden om met tolken te werken zijn…	1.000	.285
Extraction Method: Principal Component Analysis.		

Annex 23. Total variance explained the MHAS Flemish version

Total variance explained									
	Initial eigenvalues			Extracts of loads squared			Rotation sums of loads squared		
Component	Total	% variance	% cumulative	Total	% variance	% cumulative	Total	% variance	% cumulative
1	12.863	36.752	36.752	12.863	36.752	36.752	7.151	20.430	20.430
2	3.812	10.890	47.642	3.812	10.890	47.642	6.429	18.370	38.800
3	2.665	7.616	55.258	2.665	7.616	55.258	5.760	16.457	55.258
4	1.368	3.908	59.166						
5	1.187	3.393	62.559						
6	1.075	3.072	65.631						
7	1.045	2.985	68.616						
8	.956	2.731	71.347						
9	.794	2.269	73.616						
10	.739	2.111	75.726						
11	.697	1.991	77.718						
12	.651	1.860	79.578						
13	.604	1.725	81.303						
14	.538	1.536	82.838						
15	.511	1.459	84.297						
16	.466	1.331	85.629						
17	.465	1.328	86.957						
18	.424	1.211	88.168						
19	.403	1.152	89.319						
20	.388	1.110	90.429						
21	.365	1.044	91.473						
22	.327	.935	92.409						
23	.315	.899	93.308						
24	.294	.841	94.148						
25	.269	.769	94.918						
26	.249	.711	95.628						
27	.223	.637	96.265						
28	.220	.629	96.894						
29	.205	.586	97.481						

30	.178	.508	97.989						
31	.166	.473	98.463						
32	.159	.454	98.917						
33	.148	.422	99.338						
34	.127	.363	99.701						
35	.105	.299	100.00						
Extraction Method: Principal Component Analysis.									

Annex 24. Principal Component Analysis of the MHAS Flemish version

Matrix componenta			
	Component		
	1	2	3
9.1. Mijn kennis over verschillende culturen is...	.447	-.104	.195
9.2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.	.483	-.327	.282
9.3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten	.601	-.380	.068
9.4. Mijn kennis over het Belgische migratiebeleid is...	.617	-.325	.310
9.5. Ik begrijp het multiculturele beleid in België	.590	-.339	.342
9.6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..	.643	-.442	.297
9.7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten	.543	-.059	.360
10.1. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.	.578	-.474	.282
10.2. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...	.668	-.460	.199
10.3. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...	.671	-.432	.258
10.4. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.	.622	-.485	.220
10.5. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	.401	.418	.394
10.6. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	.390	.467	.439
10.7. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	.526	.554	.359
11.1. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	.538	.485	.295
11.2. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	.671	.428	.105
11.3. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	.637	-.083	.073
11.4. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	.660	.457	.055
11.5. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	.608	.524	.068
11.6. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	.621	.524	.070

11.7. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	.527	.416	-.071
12.1. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....	.582	.108	-.299
12.2. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	.671	.109	-.127
12.3. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	.618	.344	-.053
12.4. Mijn vermogen om personen met een sterk accent te begrijpen is...	.504	-.042	-.333
12.5. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….	.598	.041	-.387
12.6. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.	.716	-.011	-.326
12.7. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…	.606	-.121	-.417
13.1. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen	.688	-.067	-.327
13.2. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…	.727	-.076	-.289
13.3. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...	.727	-.107	-.351
13.4. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...	.669	.097	-.173
13.5. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt, is ...	.643	-.087	-.392
13.6. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken	.693	-.132	-.355
13.7. Mijn vaardigheden om met tolken te werken zijn…	.527	.019	-.087
Extraction Method: Principal Component Analysis.			
a. 3 extracted components			

Annex 25. Varimax rotated factor matrix of the MHAS Flemish version

Rotating component matrix[a]			
	Component		
	1	2	3
9.1. Mijn kennis over verschillende culturen is...	.153	**.422**	.217
9.2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.	.116	**.630**	.098
9.3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten	.356	**.619**	.027
9.4. Mijn kennis over het Belgische migratiebeleid is...	.184	**.719**	.176
9.5. Ik begrijp het multiculturele beleid in België	.142	**.729**	.165
9.6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..	.214	**.802**	.093
9.7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten	.092	**.534**	.366
10.1. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.	.183	**.777**	.031
10.2. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...	.304	**.776**	.051
10.3. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...	.261	**.791**	.098
10.4. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.	.258	**.777**	.019
10.5. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	-.038	.168	**.679**
10.6. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	-.080	.155	**.730**
10.7. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	.068	.135	**.830**
11.1. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	.126	.152	**.757**
11.2. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	.358	.165	**.700**
11.3. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	.370	**.453**	.275
11.4. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	.387	.114	**.696**
11.5. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	.341	.049	**.728**
11.6. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	.348	.057	**.735**

11.7. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	.394	-.002	**.548**
12.1. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....	**.607**	.106	.244
12.2. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	**.538**	.246	.359
12.3. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	**.442**	.105	.545
12.4. Mijn vermogen om personen met een sterk accent te begrijpen is...	**.584**	.139	.076
12.5. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….	**.685**	.112	.164
12.6. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.	**.719**	.244	.206
12.7. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…	**.717**	.204	.030
13.1. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen	**.703**	.263	.149
13.2. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…	**.700**	.310	.177
13.3. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...	**.747**	.298	.128
13.4. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...	**.571**	.229	.330
13.5. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt, is ...	**.722**	.216	.085
13.6. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken	**.728**	.293	.090
13.7. Mijn vaardigheden om met tolken te werken zijn…	**.414**	.242	.235

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Converged rotation in 6 iterations.

Annex 26. Item-total statistics of awareness dimension of the MHAS Flemish version

Item-total statistics				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
10.5. Ik begrijp dat mijn eigen culturele achtergrond mijn werk met cultureel diverse en anderstalige patiënten beïnvloedt	28.48	26.251	.615	.903
10.6. Ik begrijp hoe de cultuur van cultureel diverse en/of anderstalige patiënten hun gezondheid kan beïnvloeden	28.57	26.213	.609	.904
10.7. Ik begrijp hoe culturele barrières een impact kunnen hebben op behandeling en zorg	28.31	24.757	.747	.894
11.1. Ik ben me er van bewust hoe culturele barrières een impact kunnen hebben op de patiënt-verpleegkundige relatie	28.25	25.419	.712	.896
11.2. Mijn begrip van hoe taal en cultuur klinisch verpleegkundig onderzoek kunnen beïnvloeden, is...	28.41	25.507	.719	.896
11.4. Mijn begrip van hoe taal en cultuur een diagnose kunnen beïnvloeden is…	28.49	24.918	.748	.894
11.5. Ik ben me ervan bewust hoe de perceptie van cultureel diverse en/of anderstalige patiënten over gezondheidszorg hun behandeling kunnen beïnvloeden.	28.61	25.597	.725	.896
11.6. Mijn besef dat culturele overtuigingen de behandeling kunnen beïnvloeden, is...	28.44	25.616	.767	.893
11.7. Ik ben me er van bewust hoe het werken met getraumatiseerde patiënten mij kan beïnvloeden	28.40	26.253	.559	.908

Annex 27. Item-total statistics of Knowledge dimension of the MHAS Flemish version

Item-total statistics				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
9.1. Mijn kennis over verschillende culturen is...	27.67	42.257	.447	.913
9.2. Mijn kennis over acculturatie is...Acculturatie is een proces waarbij een groep individuen culturele of sociale kenmerken van een andere groep individuen overneemt.	28.31	39.603	.582	.908
9.3. Ik ben vertrouwd met de verschillende diensten voor cultureel diverse en/of anderstalige patiënten	28.17	38.542	.618	.907
9.4. Mijn kennis over het Belgische migratiebeleid is...	28.38	38.637	.676	.904
9.5. Ik begrijp het multiculturele beleid in België	28.28	38.427	.672	.904
9.6. Mijn kennis over de verschillende ondersteunende diensten voor integratie die worden aangeboden voor cultureel diverse en/of anderstalige patiënten is..	28.35	38.180	.770	.900
9.7. Ik begrijp de grootste drempels tot gezondheidszorg voor cultureel diverse en/of anderstalige patiënten	27.77	40.533	.526	.910
10.1. Ik heb kennis van het overheidsbeleid inzake culturele diversiteit en de diensten die zij aanbieden.	28.49	39.346	.720	.902
10.2. Mijn kennis van denkkaders voor de ontwikkeling van cultuursensitieve diensten is...	28.47	38.627	.771	.900
10.3. Mijn kennis over het implementeren van cultuursensitieve diensten om verandering te verkrijgen is...	28.46	38.438	.771	.900
10.4. Ik ben vertrouwd met de voor- en nadelen van alle zorgmodellen voor cultureel diverse en/of anderstalige patiënten.	28.33	37.341	.752	.900
11.3. Ik ben me bewust van de inherente culturele bias in verschillende tools en instrumenten die in medisch onderzoek worden gebruikt.	27.94	39.213	.529	.912

Annex 28. Item-total statistics of skills dimension of the MHAS Flemish version

Item-total statistics				
	Scale average if item is deleted	Scale variance if item is deleted	Corrected total item correlation	Cronbach's alpha if the item is deleted
12.1. Mijn begrip van de stressoren die gezinnen ondergaan ten gevolge van postmigratie en aanpassing is....	39.57	51.290	.593	.914
12.2. Mijn begrip van het verband tussen culturele identiteit en gezondheid is…	39.40	52.155	.628	.912
12.3. Ik ben me bewust van de moeilijkheden van cultureel diverse en anderstalige patiënten vanwege hun vaardigheden in de landstaal.	39.27	52.597	.546	.915
12.4. Mijn vermogen om personen met een sterk accent te begrijpen is...	39.56	52.732	.536	.915
12.5. Mijn vaardigheden om duidelijke boodschappen over te brengen naar mensen die moeite hebben met de Nederlandse taal zijn….	39.50	52.177	.658	.911
12.6. Ik ben in staat om met cultureel diverse en/of anderstalige patiënten tot begrip te komen over elkaars opvattingen over wat 'ziekte' is, wat de oorzaak is en hoe deze behandeld moet worden.	39.62	51.058	.733	.908
12.7. Mijn vermogen om een cultureel gepast behandelplan op te stellen is…	39.91	51.612	.624	.912
13.1. Ik ben in staat om op cultureel aangepaste manier te communiceren om te voldoen aan de behoeften van cultureel diverse en/of anderstalige patiënten en hun gezinnen	39.61	51.767	.704	.910
13.2. Mijn vaardigheden om strategieën te identificeren voor gezondheidspromotie bij cultureel diverse en/of anderstalige patiënten zijn…	39.92	51.528	.732	.909
13.3. Mijn vaardigheden om strategieën te identificeren voor de preventie van ziekten bij cultureel diverse en/of anderstalige patiënten zijn...	39.82	51.676	.749	.908
13.4. Mijn vaardigheden om een patiënt-verpleegkundige relatie op te bouwen met cultureel diverse en/of anderstalige patiënten zijn...	39.56	52.546	.624	.912
13.5. Mijn vermogen om te beantwoorden aan de behoeften van cultureel diverse en/of anderstalige patiënten die marteling of trauma hebben meegemaakt, is ...	39.86	51.186	.686	.910
13.6. Ik ben in staat om de beperkte toegang tot diensten voor cultureel diverse en/of anderstalige patiënten aan te pakken	39.81	51.059	.704	.909
13.7. Mijn vaardigheden om met tolken te werken zijn…	39.65	52.341	.480	.919