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Original Article

Cross-Cultural Adaptation and Measurement of Psychometric Properties of the Filipino version of Victorian Institute of Sports Assessment Ankle Instability (VISA-A) Questionnaire for Achilles Tendinopathy

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Abstract

Background: Achilles Tendinopathy (AT) is common in elite and recreational athletes involved in sports such as running and jumping. The severity of this condition can be assessed using the VISA-A questionnaire. However, this is originally developed in English. This has been translated to several languages, but there is no translation and cross-cultural adaptation yet to Filipino. This study aims to translate, cross-culturally adapt the VISA-A questionnaire to Filipino, and examine its psychometric properties**. Method:** The translation and validation process were in accordance with the guidelines set by Beaton et al., and Sousa et al. The psychometric properties were assessed on n= 8 healthy and n= 8 symptomatic athletes. **Results.:** The VISA-A questionnaire exhibited excellent face validity (100% agreement), content validity (Item-Content Validity Index and Scale-Content Validity Index= 1.00), construct validity (U= 2.50, p= 0.001), and concurrent validity (r= 0.90, p= 0.001). The items have good internal consistency (α= 0.80) and showed excellent reliability (ICC= 0.94; 95% CI: 0.73–0.99). **Conclusion:** The cross-cultural adaptation of the Filipino version of VISA-A (VISA-A-Fil) was successful. Preliminary psychometric testing showed that the VISA-A-Fil questionnaire is a valid and reliable tool that measures the severity of AT. However, there is still a need to explore its full psychometric properties.

Keywords: *Achilles tendinopathy, translation, questionnaire, Filipino*

INTRODUCTION

Overuse injuries are common in elite and recreational athletes. Achilles tendinopathy (AT) is one of the most common lower limb tendinopathies that could potentially affect sports careers and cause disability.[1,2] This condition is prevalent in individuals who participate in distance running, track and field, badminton, volleyball, badminton, soccer, and other sports involving jumping.[3,4] This condition had been estimated to have a 7-9% lifetime incidence, with a 10% prevalence in runners.[2,4] Clinical presentation of this condition includes pain, swelling, and tenderness 2-6 cm proximal to the tendon insertion. The diagnosis of this condition is mostly based on detailed history and clinical examination. [2,5] Physical examination includes quantification of pain, palpation of the musculotendinous unit, inspection of swelling, warmth, ankle stability, and biomechanical faults.[2,3,5]Some diagnostic procedures such as magnetic resonance imaging (MRI) or ultrasound can also be used to verify the condition further and rule out other musculoskeletal disorders.[5] Outcome measure tools such as Lower Extremity Functional Scale (LEFS), Foot and Ankle Disability Index (FADI), American Orthopedic Foot and Ankle Score (AOFAS), Foot and Ankle Outcome Score (FAOS), and the Victorian

Institute of Sports Assessment – Achilles (VISA-A) questionnaire, are also used to gauge the impairment and functional limitation brought by the condition.[2,6] LEFS is a general scale that assesses the functional status of patients with musculoskeletal lower extremity conditions.[7] Both FADI and FAOS are region-specific outcome measures. They are both assessing the ankle and foot region. FADI focuses more on functional assessment, while FAOS, an adaptation of the Knee Injury Osteoarthritis Outcome Score, assesses several symptoms and limitations of the ankle and foot.[8,9] On the other hand, VISA-A is the only valid, reliable, and disease-specific health outcome measure for Achilles tendinopathy.[10]

VISA-A is an easy, simple, self-administered questionnaire that assesses the clinical severity of AT and its impact on physical activity. It has eight questions that assess three domains: namely pain, function, and activity. This tool quantifies the magnitude of the symptoms and functional limitations caused by AT such that lower scores mean that the patient presents with more severe symptoms. It is originally developed in 2001 for the English-speaking population.[11] Since the source language and culture where the original questionnaire was developed is entirely different from the Philippines, where it will be used, cross-cultural adaptation is necessary and required.[12] In this study, cross-cultural adaptation encompasses both the translation and cultural adaptation of the questionnaire.[12] The respondents are supposed to understand the ideas and concepts of the translated questionnaire in the same way as the original version. Cross-cultural adaptation of questionnaires would give the respondents the same opinion, content, and idea about the study across different cultures.[13] Also, cross-cultural adaptation is important to ensure that the concepts of the original version will have similar or at least equivalent meaning in the target population. Several studies were already published on its translation, validation, and cross-cultural adaptation to other languages such as French,[4] German,[10] Italian,[14] Dutch,[16] Swedish,[15] and Turkish.[17] Up to date, there is still no translated and validated version in the Filipino language.

Therefore, the primary objective of this study is to translate and cross-culturally adapt the VISA-A questionnaire to the Filipino for the benefit of the Filipino athletes. Secondarily, this study also examined the psychometric properties of the translated questionnaire.

METHODS

Ethical Considerations. This study was approved by the Ethics Review Committee of the University of Santo Tomas – College of Rehabilitation Sciences (Protocol No. SI 2018-030). This study was conducted in compliance with the Declaration of Helsinki and Good Research Practice guidelines.

Study Design. This quantitative study utilized a psychometric research design to determine the validity and reliability of the translated questionnaire. The translation and cross-cultural adaptation of the questionnaire were based on published guidelines.[12,18]

Participants. In the pilot and psychometric testing stage, the participants were collegiate athletes from Manila aged 18 and above who can understand English and Filipino. Other eligibility criteria used were: (1) must be enrolled in any of the universities in Manila, (2) presence of pain and tenderness 2-6 cm from the insertion of the Achilles tendon, (3) able to understand and write in Filipino and English, and (4) willing to take part in this project and can give a written consent form. Those who are not officially enrolled, non-athletes, foreign participants, and who have musculoskeletal conditions other than AT were excluded from the study. A licensed physical therapist conducted a screening process to determine the eligibility of the participant. In the pilot testing stage, ten (10) participants from the target population were recruited.[18] In the psychometric testing stage, a total of n= 16 participants (8 healthy and 8 symptomatic) participated in the study. There were two different sets of participants in each stage. Purposive sampling was done to recruit participants since the tool is developed for a specific target population.

Setting. The data gathering took place at the Sports Science Laboratory, University of Santo Tomas, for UST athletes. For non-UST athletes, the data gathering took place in their respective universities. The researchers coordinated with

the officer-in-charge (OIC) inside the laboratory and head of the athletics department of participating universities and avoided any conflicts between scheduled training and classes.

Tool. The VISA-A questionnaire is a self-administered outcome measure tool that provides an index of the severity of AT. It is usually conducted using a pen-and-paper method. It correlated well with other valid tools for the severity of AT and has exhibited good test-retest reliability and good stability.[11] The questionnaire consists of 8 questions that assess pain (Questions 1-3), function (Questions 4-6), and activity (Questions 7-8). The first seven questions are scored from 0-10, with 10 being no pain. Question 8 has three different questions which depend on the functional capability of the patient. It asks the capability of the patient to train or practice with or without pain. Only one of these questions will be answered by the patient. The maximum score for this question is 30. The overall score of an asymptomatic healthy person is 100, while those with AT are expected to have lower scores.[11]

Procedures This study underwent a technical and ethical review process. The authors were permitted by the original developer to translate the questionnaire to Filipino. Figure 1 shows the major stages of cross-cultural adaptation.

Stage I: Forward Translation. Two independent translators did the forward translation. One of the translators (FT1) is a Doctor of Medicine graduate. She is familiar with different healthcare terminologies and with the content of the questionnaire. The other translator (FT2) is a Doctor of Philosophy graduate with no clinical background and with no history of education in the medical field. She is familiar with the colloquial and semantic terms used by most of the population. Both translators are native speakers of Filipino and are fluent in English. This stage developed two different Filipino versions of the questionnaire.

Stage II: Synthesis. The two translated questionnaires from the previous stage were merged and revised by the researchers to produce one translated version (FT12). Any discrepancies and differences in the translations were resolved within a discussion among the researchers.

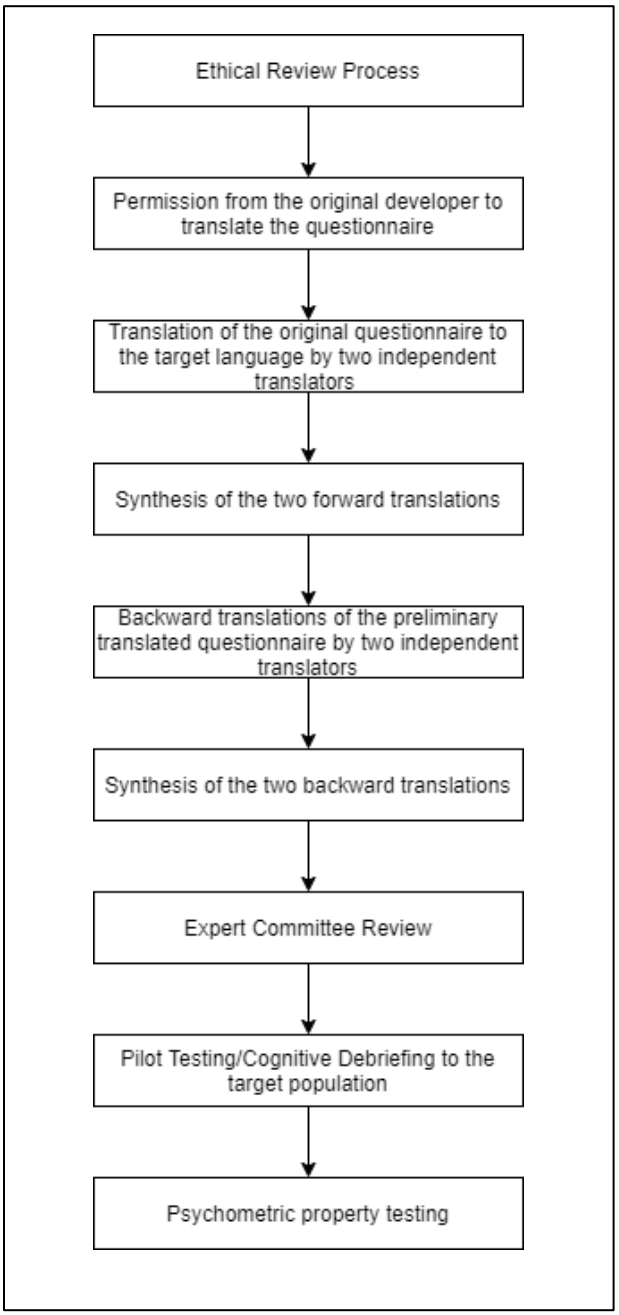

Figure 1. Cross-cultural Adaptation and Psychometric Testing Process

Stage III: Back Translation. Back translation of the synthesized Filipino version of VISA-A was performed by two independent translators fluent in English and Filipino. One of the translators (BT1) is an orthopedic surgeon who is knowledgeable of healthcare jargon and is familiar with the content of the questionnaire. The other translator (BT2) is a linguistic translator with no medical background but

knows the target population's colloquial and semantic words. This step was done to ensure that the translated version will not lose its context from the original version. The two translators resolved discrepancies to come up with a consensus.

Stage IV: Expert Committee Review. An expert committee was formed to consolidate all the questionnaire versions and create an amalgamation that would serve as the pre-final questionnaire for field testing. The committee is composed of the two (2) forward translators, two (2) backward translators, two (2) physiotherapists who are familiar with the tool, two (2) rehabilitation doctors, an anthropologist, a linguist, a research methodologist, and two (2) athletes. A meeting was conducted to assess the face and content validity, resolve ambiguity in the translation, and reach a consensus for the final translated questionnaire. The translations on hand (FT1, FT2, FT12, BT1, BT2) and the original questionnaire were reviewed and revised based on the clarity of instructions, items, and response format using a dichotomous scale (with the choices clear or unclear). The semantic, idiomatic, experiential, and content equivalence of the instrument in the translated language and the source language were further examined. This stage produced the pre-final Filipino version of the questionnaire (VISA-A-Fil).

Stage V: Pilot Testing/Cognitive Debriefing. A pilot test of the pre-final version of the questionnaire was conducted on *n*= 10 participants from the target population. This is the minimum number of participants required in a pilot test as recommended by Sousa et al.[18] The participants were asked to evaluate the clarity and understandability of each question and instruction in the translated questionnaire. A dichotomous scale (clear or unclear) was included in each item to objectify the participants' judgment. An agreement of at least 80% was needed to ensure the clarity and understandability of the tool.[18] The target population assessed the face validity of the questionnaire at this stage. Any comments or ambiguity raised by the participants were incorporated in the questionnaire and approved by the expert committee.

Stage VI: Psychometric Testing. Eight (8) asymptomatic and eight (8) symptomatic athletes did the preliminary psychometric testing of the final version of the instrument. The original and the translated version were administered to the participants with a time interval of 2 hours.[19] The translated version was readministered after 24 hours to test for stability.[19]

Data Analysis. All data were tabulated using MS Excel. Statistical analyses were performed using IBM SPSS Statistics 22. Descriptive statistics, such as mean, standard deviation, and frequency percentage, were used to present the demographics data of the participants.

Face validity. Face validity refers to the assumption of the tool's validity based on its appearance as a reasonable measure of a given variable.[21] This was assessed during the expert review committee meeting and the pilot testing. Percentage agreement of the participants was used in this study to quantify face validity.

Content Validity. Content validity refers to the extent to which the items in the questionnaire represent all the constructs of interest.[15] The most widely used quantification of content validity is the content validity index applied per item and scale level.[20] I-CVI (Item-Content Validity Index) and S-CVI (Scale-level CVI) were computed to assess the content representativeness and relevance of the questions.[20] This was done by asking the expert committee to evaluate the relevance of each question using a four (4) point Likert scale with one (1) being no relevance/difficult to understand, two (2) being little relevance/somewhat difficult to understand, three (3) being easy to understand/ relevant and four (4) being very easy to understand/very relevant. 1= not relevant; 2= unable to assess relevance; 3= relevant but needs minor alteration; 4= very relevant and succinct.[18,20] Items that received a rating of three (3) or four (4) were considered valid.[20] To compute for the I-CVI, the number of experts who rated the item as valid was divided by the total number of experts who assessed the questionnaire. There are several ways to compute for the S-CVI, but in this study, the average of the proportion of items rated as content valid across experts was used.[21]

An I-CVI of 0.78 or above and S-CVA/Ave of 0.90 or above was the minimum acceptable indices.[18] Revisions were made until these indices were reached.

Known group Validity. Known group validity is a type of construct validation where validity is determined by the degree to which the tool can demonstrate different scores for participants known to vary on the variable being measured.[21] Known group validity was measured by comparing the scores of those healthy from the symptomatic participants. Due to the small sample size, Mann-Whitney (*U*) was used to analyze the differences in their scores with the α set at 0.05.

Concurrent Validity. Concurrent validity refers to the extent to which the results of a new measure correlate with a reference standard taken and assessed at the same time frame.[21] To assess this validity, the participants were asked to answer both the translated Filipino version and the original version of the questionnaire. Spearman rho correlation coefficient was used to analyze the relationship of the participants' scores on both questionnaires. For the correlation, the value was interpreted as follows: 0.91–1.00 as very high correlation, 0.71–0.91 as high correlation, 0.51–0.70 as moderate correlation, 0.31–0.50 as low correlation, and 0.00–0.30 as negligible correlation.[22]

Internal Consistency. Internal consistency is a form of reliability that assesses the degree to which the items in the tool all measure the same trait.[21] This ensures the homogeneity of all the items in the questionnaire. Cronbach α was calculated to determine internal consistency. A Cronbach's alpha of at least 0.70 was set to indicate adequate internal consistency.[18]

Test-Retest Reliability. Test-retest reliability refers to the degree of stability of an instrument based on repeated administrations of the test to the same individuals over a specific time interval.[21] To get this, the translated version of the questionnaire was administered to the participants twice at a 24-hour interval. The scores on both occasions were analyzed using intraclass correlation coefficient (ICC). An ICC value of <0.50 was considered poor, 0.50–0.75 as moderate, 0.75–0.90 as good, and >0.90 as excellent reliability.[23]

RESULTS

Forward and Backward Translation. The different stages of cross-cultural adaptation produced the VISA-A-Fil questionnaire (Supplement A). During the forward translation, there were some differences in the two translations in terms of the use of words and grammatical constructions of the questions. These were resolved by using familiar and conventional words that can easily be understood and used by Filipinos. At this stage, only the researchers synthesized the two translations. Although it is recommended that there should be a meeting between the researchers and the two translators to resolve the issue or to look for a third independent translator,[12,18] one study stated that the minimum requirement is the reconciliation made by the person coordinating the translation project and the main contact person managing the process of translation. As part of the qualification, the main contact person should be a native speaker of the target language, fluent in the source language, should come from a medical background, and have experience in translation.[24] The back-translated versions were almost similar to the original version when compared side by side; however, some questions have different syntax and grammatical structure from the original version.

Expert Committee Validation. During the expert review committee meeting, the face validity and content validity of the questionnaire were assessed. Several changes were applied to ensure semantic, idiomatic, content, and experiential equivalence of the questionnaire. Table 1 presents the summary of the modifications done by the expert committee. Figures were also added to some parts of the questions to supplement their context, avoid confusion, and make them more understandable.

Some words such as Achilles Tendon were retained as they do not have direct Filipino translations. Words with several meanings in Filipino were revised to words that specifically contextualize the question.

Table 2 presents the summary of the results of the content validation of the questionnaire. It

Table 1. Modifications from Experts during the Expert Review Committee Meeting

Question	Modifications from the experts
Q1: " May ilang minuto mo nararamdaman ang pagkakaroon ng paninigas sa bahagi ng Achilles kapag ikaw ay unang tatayo?	" May ilang minuto mo nararamdaman" was changed to " Ilang minuto ka nakakaramdam" to make the statement grammatically correct in Filipino and to make it more understandable for the user.
Q2: " Kapag nakapag warm-up ka na sa isangaraw, mayroon bang sakit habang lubos na inuunat ang Achilles tendon sadulo ng hakbang (habang nakadiresto ang tuhod)"	The phrase " nakapag warm-up" was changed to " nakapagunat" because warm-up may confuse the athlete by thinking of " warming-up before a training session". The phrase " sa isang araw" was omitted. The phrase " lubos na inuunat" was changed to " banat na banat" just to be more specific. It was also addressed to put visual representation in this question for the benefit of the end users. The term " sakit" was changed to " pananakit" as this will be more accepted in general terms.
Q3: " Matapos maglakad sa loob ng 30 minuto sa patag nadaan, mayroon bang sakit sa loob ng susunod na dalawang oras?"	The phrase " sa loob ng" was omitted. The phrase " mayroon bang sakit" was was changed to " nakakaramdam ka ba ng pananakit".
Q4: " Mayroon bang sakit habang naglalakad ng pang karaniwang paraan sa pagbaba ng hagdan?"	The term " bang sakit" was changed to " bang pananakit".
Q5: " Mayroon bang sakit habang o pagkatapos gawin ang 10 beses na pagtingkayad gamit ang isang binti sa isang patag na lugar?"	The term " mayroon bang sakit" was changed to " gaano kasakit ang nararamdaman mo" to emphasize on the measurement of the severity of the pain. Illustration was recommended in this question. The term " binti" was changed to " paa" as it is more specific to the movement being done. The phrase " sa isang patag na lugar" was changed to the word " sahig". The numerical number " 10" was changed to the word " sampung".
Q6: " Ilang pagtalon gamit ang isang paa ang kaya mong gawin nang walang sakit?	The word " sakit" was changed to " pananakit".
Q7: " Kasalukuyan ka bang lumalahok ng isport o gumagawa ng anumang pisikal naaktibidad?	The term " gumagawa ng anumang" was changed to " ng iba pang".
Instruction: " Paki kumpleto ang alin man sa A, B, o C sa katanungang ito"	The phrase " paki kumpleto" was changed to " sagutin" The phrase " alin man" was changed to " isa lamang"
" Kung walang sakit habang ginagawa ang mga isports na nagbibigay ng bigat sa Achilles tendon mangyayaring kumpletuhin ang Q8A lamang"	The word " sakit" was changed to " pananakit" The word " mga" was omitted. The phrase " mangyaring kumpletuhin" was changed to " maaaring sagutin".
" Kung may sakit habang ginagawa ang mga isports na nagbibigay ng bigat sa Achilles tendon bagama' t hindi ito sapat upang tapusin ang aktibidad, mangyaring kumpletuhin ang Q8b lamang."	The phrase " may sakit" was changed to " may pananakit". The phrase " tapusin" was changed to " huminto" The term " kumpletuhin", was changed to " sagutin". The term " mga" from " ang mga isports" was also omitted and was changed to " ang isport"
" Kung may sakit na pumipigil sa iyo upang makumpleto ang mga isports na nagbibigay ng bigat sa Achilles tendon, mangyaring kumpletuhin ang Q8c lamang.	The phrase " may sakit" was changed to " may pananakit". The term " mga" from " ang mgaisports" was also omitted and was changed to " ang isport"
Q8A: " Kung walang sakit habang ginagawa ang mga isports na nagbibigay ng bigat sa Achilles tendon, gaano mo katagal kayang magsanay?	The phrase " may sakit" was changed to " may pananakit". The term " mga" from " ang mgaisports" was also omitted and was changed to " ang isport" The term " mag-ensayo" was added as an option to the term " magsanay".
Q8B: " Kung may sakit habang ginagawa ang mga isports nanagbibigay ng bigat sa Achilles tendon bagama' t hindi ito sapat upang huminto ka sa iyong pagsasanay, gaano mo ka tagal kayang magsanay?	The phrase " may sakit" was changed to " may pananakit". The term " ang mga isports" was changed to " ang isport" The term " mag-ensayo" was added as an option to the term " magsanay".
Q8C: " Kung may sakit na pumipigil sa iyo na makumpleto ang mga isports na nagbibigay ng bigat sa Achilles tendon, gaano mo katagal kayang magsanay?	The phrase " may sakit" was changed to " may pananakit". The term " ang mga isports" was changed to " ang isport" The term " mag-ensayo" was added as an option to the term " magsanay". The term " makumpleto" was changed to " matapos".

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Table 2. Summary of the results for content validity per item

	Relevant (ratings >3)	Not Relevant (ratings ≤2)	I-CVI	Interpretation	S-CVI
Item 1	11	0	1.00	Appropriate	
Item 2	11	0	1.00	Appropriate	
Item 3	11	0	1.00	Appropriate	
Item 4	11	0	1.00	Appropriate	
Item 5	11	0	1.00	Appropriate	1.00
Item 6	11	0	1.00	Appropriate	
Item 7	11	0	1.00	Appropriate	
Item 8	11	0	1.00	Appropriate	

Note: I-CVI= item-level content validity index, S-CVI= Scale-level content validity index

showed that all items have an I-CVI and S-CVI of 1.00 after an iterative process of rewording and rephrasing. In the end, the expert panel reached a consensus to approve the pre-final version of the questionnaire.

Pilot Testing. Ten participants assessed the clarity and understandability of the questionnaire. All the participants (100%) from the target population judged the items in the questionnaire to be excellent, clear, and understandable. This exceeded the minimum agreement set of 80%, which means that there is no need for reformulation of the questionnaire.

Psychometric Testing. A total of 16 participants were part of the psychometric testing of the questionnaire. Eight were healthy athletes, and eight were symptomatic athletes. The mean age range and the frequency distribution of the participants according to sex and sports are seen in Table 3.

Known Group Validity. Similar to the results of the Persian version,[25] there was a statistically significant difference between the VISA-A scores of the healthy and symptomatic group (U= 2.50, p= 0.001). The mean scores of the healthy group (*Mean*= 94.88, *SD*= 5.36) were higher compared to the symptomatic group (*Mean*= 78.13, *SD*= 8.10).

Concurrent Validity. Concurrent validity of the translated version yielded a high, positive correlation which was statistically significant (ρ= 0.99, p= 0.001). Table 4 provides the summary of the concurrent validity of each item. All items showed a significantly high correlation.

Reliability. The internal consistency of the VISA-A-Fil was 0.80 as assessed using the Cronbach alpha coefficient. During the test-retest reliability, only 56% of participants took the questionnaire on the second administration. The test-retest reliability coefficient showed to be excellent with an ICC= 0.94 (95% CI: 0.73-0.99) when evaluated on two separate occasions.

DISCUSSION

Translation. This study used several published guidelines and recommendations in the area of translation and cultural adaptation.[12,18] There were few differences in the initial forward translation of the questionnaire. Some words and statements in the questionnaire such as "warmed up," "stretching," "for how many

minutes," and "full competition" were literally translated to Filipino. The translators used

Table 3. Demographic characteristics of participants during the psychometric testing stage

Demographic Variables		Healthy Group (*n*= 8)		Symptomatic Group (*n*= 8)	
		n	**%**	***n***	**%**
Sex					
	Male	6	75	7	87.5
	Female	2	25	1	12.5
Sports					
	Basketball	2	25	-	-
	Football	2	25	2	25
	Swimming	4	50	-	-
	Baseball	-	-	1	12.5
	Fencing	-	-	1	12.5
	Cheer dance	-	-	1	12.5
	Tennis	-	-	1	12.5
	Track and Field	-	-	2	25
Age in (y) (mean ± SD)		18.5 ± 0.54		16.63 ± 1.69	

Note: SD = standard deviation

different but synonymous words also. The words pain, severity, and hop were translated in this manner. During the synthesis, words with clearer and understandable context were adopted in the questionnaire. Similar to the French version, there were minor differences noted during the backward translations.[4] Mostly were on the sentence structure and similar to the forward translation, some words were back-translated using its literal English translation. The expert committee objected to the method of using literal translation. Instead, the free translation method was used by the expert committee to resolve differences in the translation. This means that the translation may or may not follow the form or organization of the original version, but its intended meaning should be retained.[28] In this process, the expert committee played a critical role in ensuring semantic, idiomatic, content, and experiential equivalence of the questionnaire.

Semantic equivalence focuses on the grammar, vocabulary, and the similarity of meaning of each item in the culture of interest.[27] The literal translation method initially used led to

Table 4. *Results of the Concurrent Validity Testing of the VISA-A Scores*

Item	Spearman rho coefficient (Concurrent Validity)
1	0.91*
2	0.95*
3	0.90*
4	0.72*
5	0.82*
6	0.95*
7	0.96*
8	0.90*
Total Score	0.99*

Note:*statistically signicant ($p < 0.05$)

grammatical and syntax errors in the target language. To resolve this, there were words omitted in some questions and arranged to achieve better grammatical structure. Some were replaced with words that give more contextual

emphasis. For example, the word “sakit” (pain) was changed to “pananakit” because the former other meanings in English. Aside from pain, “*sakit*" may mean any medical condition and may encompass physical and emotional aspects. "*Pananakit*” fits more in the context of the question. Another is the statement “*sobra at labis na pananakit*” and “*nakapatinding pananakit*" are similar in intensity, but the latter provides a more descriptive emphasis on pain intensity.

Idiomatic equivalence refers to the equivalent expression in the target version of colloquial terms or idiom in the original version.[12] The word “normal gait cycle” is a medical jargon that does not have a direct Filipino translation. The committee decided to use “*naglalakad pababa ng hagdan*” as this is the closest context that Filipinos can easily understand.

Conceptual equivalence targets the ability of the instrument to assess the same theoretical construct in each culture.[29] To further aid the users in understanding the concept of the questionnaire, the literary description was supplemented with figures. This has not been done in any of the VISA-A translations. This step was adopted from the cross-cultural adaptation of LEFS to Arabic.[7] A figure of the specific part of the Achilles tendon was added at the beginning of the questionnaire. There was also a statement informing the users that all questions on pain refer to the Achilles tendon in the figure. Moreover, pictures describing the statements in Questions 2 and 5 were added since these may be interpreted differently. Words such as modified and full training were also retained because the direct translation may provide a different context. It was agreed that the concept of full training and modified training are encountered and experienced by the athletes and therefore can easily be understood.

Experiential equivalence refers to items that are seeking to capture and experience daily life.[12] This assesses whether a task may or may not be a simple experience in a given country or culture, even if it is translatable. This was observed in the translation of "warm-up" in the questionnaire. For athletes, the word means the set of exercises done before training; however, this refers to simple movements done immediately after waking up, such as stretching. It was agreed to change it to “*paguunat*” (stretching) to bring it closer to the context of the question.

Several patient-reported outcome measures can assess health status, but most of them were developed in the English language. Using this tool in other countries with different languages and cultures may result in systematic errors if the items on the tool are not equivalent to the original.[26] The diversity of beliefs, attitudes, and behavior of people in various countries can affect their interpretation and perception of the item in the questionnaire. There can be items in the tool that does not necessarily fit the customary experience and behavior of the target population. For example, the question about the presence of pain when stretching the Achilles tendon over the edge of a step may not be easily figured out by the respondents as this may not be part of their usual stretching routine. An athlete may have a different concept of warm-up compared to non-athletes. Hence, these outcome measures should not be only literally translated but should also be culturally adapted to maintain their content validity.[27] Cross-culturally adapted and validated outcome measure tools can help clinicians and researchers obtain accurate assessment results since patients can now fully understand the concept and context of the questionnaire. Accurate assessment results can guide clinicians in their clinical reasoning and decision-making when providing comprehensive rehabilitation programs to patients.

Validity Testing. The study found that the VISA-A-Fil questionnaire has good validity properties. The VISA-A-Fil demonstrated good content and face validity similar to the Swedish and German versions.[16] The very high, positive correlation result of the concurrent validity assessment in this study (ρ= 0.98, p= 0.001) is almost close to the correlation value achieved in the German version (ρ= 0.95, p= 0.001).[10] Both results were also significant. This means that the VISA-A-Fil has similar functions to the original and will yield an almost accurate measurement when compared to the original version.[30] However, this study used the original questionnaire for

comparison as the standard reference measure, while the German version used the tendon grading system by Stanish et al.[10]

For the known group validity, the method of comparing the healthy and symptomatic group in this study is similar to the Swedish, Persian, and Turkish versions.[15,17,25] Significant differences were found between the healthy and symptomatic groups, with the latter having lower mean scores. This means that the constructs of the questionnaire can appropriately be used for patients with Achilles tendinopathy.

Reliability Testing. The Cronbach *α* coefficient result showed that the VISA-A-Fil has a good internal consistency close to the range of values (0.77-0.79) reported by the other version.[15,16] This means that the items are homogenous and nonredundant. One major problem encountered during the test-retest reliability testing of this study is the high non-response rate of the participants during the second day of administration. Only 56% of the respondent answered the questionnaire twice. The remaining 44% of the participants were unavailable during the allotted days for the second administration. It is strongly recommended that future studies provide enough surveying periods to resolve issues such as the conflict in schedule. The researchers opted to use 24-hour intervals for a practical reason. Although other versions used 2-7 days intervals,[10,15,16] the interval time used in this study is within the 10 minutes– to 1-month range reported in the literature.[19] Despite this, the questionnaire still showed an excellent test-retest reliability similar to the Dutch and French versions.[4,16] This means that the questionnaire is stable and did not show any variability over time.

CONCLUSIONS

The VISA-A questionnaire was successfully translated and culturally adapted to Filipino. After undergoing psychometric testing, it has been concluded that the Filipino VISA-A questionnaire is a valid and reliable assessment tool that can be used in assessing the clinical severity of AT among Filipino athletes. Its psychometric properties are similar to the original English version and the other translated versions. However, there is still a need to perform a full psychometric study addressing all the limitations encountered in this present study.

Limitation of the study. The study has several limitations that can be addressed in future studies. First, the translation to Filipino limits its use only to fluent patients, particularly in Tagalog. Future studies may explore translating this to other dialects. Second, the sample size used in the psychometric testing of the questionnaire is too small. There is a need to increase it and to account for the non-response rate on the computation. Thirdly, the tendon grading system by Stanish et al. can be used when assessing for concurrent and construct validity since several translated versions utilized this as the standard reference. Lastly, the time interval used in the test-retest was too short. It is recommended that the time interval should be long enough to avoid the recall effect but short enough to decrease significant changes in the condition. Future studies may address these limitations and follow the recommendations to ensure methodological rigor.

Individual author's contributions

K.S., P.R.; Designed and collected data, analyzed data and co-wrote the paper, supervised the research; I.A., T.B., J.B., G.C., C.G., M.S., A.Y.; Collected, analyzed the data and co-wrote the paper.

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Conflicts of interest

The authors of this paper declare no conflicting interest.

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Supplementary Material

Supplementary Material A. Filipino Version of VISA-A.

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