A Translation and Cross-Cultural Adaptation to a North American Context of the 51-Item Swedish Flodén Attitudes Toward Organ Donor Advocacy Instrument (Flodén ATODAI)

Anne Flodén (anne.floden@vgregion.se)
Institute of health and care sciences https://orcid.org/0000-0002-4072-8552
Maria Stadtler
Association of Organ Procurement Organizations
Stephanie E Jones Collazo
Mount Saint Mary's University
Tom Mone
OneLegacy
Rick Ash
OneLegacy
Bengt Fridlund
Linneuniversitet - Vaxjo

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Abstract

Background: Intensive and critical-care nurses are the key to successful donor management in the critical-care setting. No studies measuring attitudes toward organ donor advocacy existed before 2011, when the 51-item Swedish “Attitudes Toward Organ Donor Advocacy Scale” was developed. The aim of this study was to translate, adapt and establish the psychometric properties of the North American version of the Flodén ATODAI (Attitudes Toward Organ Donor Advocacy Instrument) in terms of validity and reliability. Methods: A multi-step approach was used: Initial translation; Back-translation; Review and synthesis of these translations; Expert panel (N=7) rated the prefinal version of the instrument for content validity index (CVI); International panel made adjustments guided by the expert panel . Reliability testing with test and retest of the adjusted 46-item version was conducted using intraclass correlation coefficient (ICC), weighted kappa (ϰ Weight), sign test, and Cronbach’s alpha coefficient (α), (N=50); and finally Delphi technique procedure with a preselected Delphi panel (N=15). Results: The CVI was determined to be greater than the 0.05 significance level. Item level (I-CVI) ranged 0.82-1.0, with a mean of 0.97. Scale level (S-CVI) on the entire instrument was 0.97. Test-retest procedure was performed to estimate stability. In total, 34 of the items had good-to-high ICC. Accepting an ICC of > 0.70 resulted in a total of 24 items. Homogeneity reliability was estimated by α and was calculated for these items where α=0.90. In total, 20 of the items had a substantial or almost perfect ϰ Weight and 23 showed a moderate ϰ Weight . None of the items showed systematical differences. The Delphi technique procedure was used on the 22 items with ICC <0.70 resulted in adjustments establishing that consensus was achieved. Conclusions: Undertaking this multi-step, cross-cultural adaptation procedure has effectively ensured that the 46-item Flodén ATODAI [North America version] produces valid and reliable measurements.

Background

Organ donor advocacy (ODA) attitudes among intensive care unit (ICU) nurses are crucial when championing and respecting the donor’s and donor’s family’s end-of-life decision to donate. ICU-nurses’ awareness, knowledge, skill and competence, i.e. role has an impact upon the organ donation and by that the organ transplantation process. The care by specialist nurses is the key to successful donor management in the critical-care (CC) setting since their actions and behavior are significantly associated with authorization to, or decline of, organ donation (OD) (1-12). In addition, ICU nurses’ attitudes have an impact on the availability of organs for individuals who need life-saving organ transplant treatment (5,8-9).

No studies measuring attitudes toward organ donor advocacy (ATODA) in a clinical context existed before 2011. One reason for this is the absence of validated measuring instruments. In 2011, with the intent to gain an understanding of nurses’ behavior, and their level of ability to advocate for their patients who are either potential or actual organ donors, Flodén *et al.* (13) developed the 51-item Swedish instrument “Attitudes Toward Organ Donor Advocacy Scale” (ATODAS) to measure ATODA among ICU and CC nurses. This instrument measures ATODA by describing nurses’ actions while caring for potential organ donors and throughout the donation procedure and evaluates changes in organizational structure,

guidelines, and educational interventions. The ATODAS is validated in the Swedish context by its application on more than 1,200 ICU nurses, i.e. ≥50% of all ICU nurses in Sweden. This ATODAS instrument is limited to the Swedish context since it only exists in the Swedish language. Today the ATODAS is to our knowledge the only established instrument within the context of measuring organ donor advocacy, and there is a need for a universal translation among different cultures and countries. Currently, the Flodén ATODAI [North American version] is in use in several countries and continents, and the process of developing a Spanish version has started.

Since specific behavior by ICU personnel is significantly associated with the frequency of referral and OD consent, it is of crucial importance to understand the reasons behind ODA. The concept of ODA in the situation of OD is defined by Flodén *et al.* (5) as respecting the potential or actual organ donor's rights, representing, or speaking up for his/her wishes, as well as the family's points of view, in the OD decision-making process. According to the International Council of Nurses' Code of Ethics, a nurse's primary professional responsibility is to people requiring nursing care. Thus, nurses' behavior and their level of ability to advocate for their patients' desires applies to potential and actual organ donors (14). In regard to nurses' professional ethics in situations when the possibility of OD arises, nurses should represent and defend their patients' wishes regarding ODA (15). The relative rarity of OD in any hospital or country makes it important to reach out to an international clinical context to establish developmental changes, i.e. professional and/or organizational. After reviewing the roles and practices of ICU and CC nurses in North America, it became clear that the Swedish ATODAS needed to be adjusted to be used in North America (16). Therefore, the aim of this study was to translate, adapt, and establish the psychometric properties of the Swedish ATODAS to one which would be equally valid and reliable in North America. As part of the instrument development in this study, the name of the instrument changed from ATODAS, the 51-item Swedish scale, to Flodén ATODAI (Attitudes Toward Organ Donor Advocacy Instrument), the North American English version.

Methods

Design

The study used a methodological design comprising of a cross-cultural adaptation procedure to effectively translate the 51-item Swedish ATODAS instrument for use in other cultural and language settings. Specifically, the study considered Brislin's multi-step approach as best practice (18). An additional Delphi technique procedure was performed on the Flodén ATODAI [North American version] as a complementary adaption approach to secure higher scientific certainty of the instrument with regard to validity and reliability by testing the items for content relevance, clarity, and domain coverage.

Description of the ATODAS [Swedish version]

Flodén *et al.* (13) developed the Swedish 51-item ATODAS as a means of psychometric evaluation of measuring ICU nurses' ATODA, including validation and reliability testing. In addition to the demographic data, the instrument contains three dimensions covering statements about attitudes toward: actions to

safeguard the wishes of the potential organ donor; actions for supporting the family of the potential organ donor; and actions that promote OD at an organizational or structural level.

Translation and cross-cultural adaption of the Flodén ATODAI [North American version]

The procedure to transfer the Swedish ATODAS instrument into an international arena was guided by Brislin's (18) multi-step back-translation approach, complemented by a Delphi technique procedure (Figure 1).

The first step was for a professional and native American English-speaking interpreter and bilingual Swedish translator to translate the Swedish ATODAS instrument into American-English. *The second step* comprised of back-translation into American-English, as performed by another expert—a native Swedish-speaking bilingual translator. The translation was performed blindly, i.e. without access to the original version of the Swedish ATODAS.

Step three constituted cross-language testing by the *international committee,* consisting of three OD specialists; one representing Sweden (PI), and two representing the United States of America (OneLegacy).

"Review and synthesis of the translations" was performed to provide consensus regarding the most accurate and easily understood items. Working from the original instrument, as well as the translated versions, a synthesis of these translations was conducted to produce a consolidated instrument. This validity-checking procedure ensured the translated version reflected the same item content as the original. A written report thoroughly documented the synthesis procedure by addressing each of the issues and how they were resolved. The consensus included the translated version of the instrument and the introduction and instruction to the instrument, resulting in the prefinal version of the Flodén ATODAI [North American version]. The described procedure included achieving equivalence between the original version and the translated version.

Study Populations: Steps Four to Six

Step four:

Seven designated ICU or CC nurses in the greater Los Angeles with experiential knowledge of caring for at least one organ donor formed an *expert panel*. The panel evaluated the content validity of the items, with reference to Lynn's criteria (17). All seven nurses on the panel were female, aged between 29-55 years with a mean age of 44.2 years, and their work experience in the ICU and/or Emergency Department ranged between 5-31 years. The panel represented nurses from trauma, education, and teaching hospitals: Three worked in the ICU; three in the Emergency Department; and one in the Education Department. Three of the experts were managers/charge nurses, one was a clinical nurse specialist, one a nurse educator, and two were bedside nurses.

Step five:

In total, 50 ICU nurses from two hospitals—one university-affiliated hospital (with different types of ICUs) and one county or community hospital (one ICU) (Table 1)—in the greater Los Angeles area participated in the test and retest. The inclusion criteria were: Being an ICU or CC nurse; experiential knowledge of caring for at least one organ donor; and currently working in a clinical setting with OD. The exclusion criteria were: Being a nurse who was not currently working and/or being a nurse without experience of caring for organ donors.

Step six:

A preselected panel of 15 nurses in the United States of America, with extensive experiential knowledge of caring for organ donors, comprised the *Delphi panel* for the purpose of completing the additional Delphi technique procedure (Table 2).

Data Collections and Analysis: Steps Four to Six

Step four: First data collection

The first data collection required testing the prefinal version of the Flodén ATODAI [North American version]. The *expert panel* was given a rating form with the theoretical definition and a delineation of the three dimensions, objectives, and items. They were asked to review the prefinal 51-item version of the Flodén ATODAI [North American version] for content relevance, clarity, and domain coverage and to rate each item on a 4-point scale (from 1=*not relevant* to 4=*very relevant*) (17,19).

Step four: First data analysis

Content Validity

The *expert panel* was formed to estimate the content validity (with reference to Lynn's criteria (17)) of the items. Content was considered valid when an item was rated as either 3 (relevant and needs little revision) or 4 (very relevant) by at least six evaluators (>86%) and, thus, was included in the new scale (17).

The *international committee* analyzed the content validity rating by the *expert panel* and weighted the scores, which resulted with the prefinal 51-item instrument being reduced to 46 items. Of the remaining 46 items, five items were re-worded, as guided by the recommendations of the *expert panel*. A content validity index (CVI) was calculated to indicate the extent of expert agreement, both for the item CVI (I-CVI) and for the scale CVI (S-CVI). An I-CVI was determined by the number of experts who rated an item content as valid (giving it a rating of 3 or 4) divided by the total number of experts, resulting in a proportion of agreement for each item. The S-CVI was determined by the averages of the I-CVIs (17,19).

Step five: Second data collection

The study performed a test-retest procedure to estimate stability (reliability testing) of the adjusted version of the prefinal 46-item version of the Flodén ATODAI [North American version], as developed from the data analysis performed in step four. Fifty ICU nurses agreed to participate by answering the instrument on two occasions, with two weeks in between.

Step five: Second data analysis

Test-Retest Reliability

The intraclass correlation coefficient (ICC) was used to measure the strength of agreement between the test and retest, using ordered categorial data (20). The level of agreement was confirmed via the weighted form of kappa coefficients (κ_{Weight}) (21).

Moreover, the sign test tested for whether systematical differences occur in either direction, described by exact agreement. The test was two-sided and conducted at the 0.05 significance level. The ICC, the κ_{Weight}, and the sign test analyses were performed using SAS software version 9.4 (SAS Institute Inc., Cary, NC, USA).

Homogeneity and Stability Reliability

Homogeneity reliability was estimated using Cronbach's alpha coefficient (α) via SPSS 18.0. According to the conventional rule by Nunnally, this coefficient should at least exceed 0.70 (22).

Step six: Third data collection

An additional Delphi technique procedure of the Flodén ATODAI [North American version] was performed to test the items for content relevance, clarity, and domain coverage. The Delphi technique is evidently dependent on the experiential knowledge of its *expert panel* (i.e. the Delphi panel). In this step, the *Delphi panel* only reviewed and judged the 22 items which were identified in step five as having an ICC $\leq$0.70. The preselected *Delphi panel* (N=15) was used to further improve the feasibility of the instrument (23). The *Delphi panel* members were asked to individually review and judge these 22 items in the Flodén ATODAI [North American version] in two occasions, referred to as "round I" and "round II". The nurses rated each item using a 4-point rating scale (1=not relevant; 2=unable to estimate relevance without item revision or item in need of such revision that it would no longer be relevant; 3=relevant but needs minor alteration; 4=very relevant and succinct) (17). In round II, the *Delphi panel* members reviewed the adjusted version of the Flodén ATODAI [North American version] after round I.

Step six: Third data analysis

After round I, this study's primary investigator (PI) summarized and analyzed all participants' recommendations. The *Delphi panel* rated all 22 items as either "relevant but needs minor alteration [3]", or "very relevant and succinct [4]". Four of the items were recommended to be kept as they were. The PI, in consultation with the co-investigators, adjusted and re-worded the remaining 18 items, guided by the

Delphi panel members' recommendations. After round II, the PI, in consultation with the co-investigators, summarized, analyzed, and adjusted the Flodén ATODAI [North American version], again guided by the recommendations of the panel.

Results

Content Validity

The first data collection comprised of the *expert panel* rating the prefinal version of the Flodén ATODAI [North American version]. The *international committee* then analyzed this data for CVI by calculating both the I-CVI and the S-CVI. The I-CVI ranged from 0.82 to 1.0, with a mean of 0.97, while the S-CVI averaged 0.97. This meant the CVI was ≥0.78 and, therefore, content validity was established beyond the 0.05 significance level, which is the required criterion according to Lynn (17) and Polit and Beck (19). This resulted in a reduction of the number of instrument items from 51 to 46. Of the remaining 46 items, five were re-worded using the recommendations of the *expert panel.*

Test-Retest Reliability

The strength of agreement between the test and retest was calculated both by ICC and by κ_{Weight}. Also, the sign test was used to identify whether any systematical differences had occurred. The 46-item Flodén ATODAI [North American version] showed an ICC between 0.268 – 0.911 (Table 3). In total, 34 of the items had a good or excellent ICC (Good n=18 (0.60-0.74); Excellent n=16 (≥0.75)). Accepting an ICC ≥0.70 (24) yielded a total of 24 items. The level of agreement was confirmed by κ_{Weight}, varying between 0.25 – 0.87 (Table 4). In total, 20 of the items had a substantial or almost perfect κ_{Weight} (Substantial n=17 (0.61-0.80); Almost Perfect n=3 (0.81-0.99)). Moderate κ_{Weight} (0.41-0.60) was shown for 23 items. Only three items (2, 4, and 37) showed a κ_{Weight} with fair agreement (0.21-0.40). However, these three items had a high exact agreement that ranged between 75.5%-84.0%. Exact agreement between test and retest for all items varied between 52.1% - 97.9%. None of the items showed statistically significant systematic changes. The retest values were systematically higher for most of the items. The ICC values were, as is to be expected, very similar to those of κ_{Weight} (25).

Homogeneity and Stability Reliability

Homogeneity reliability was estimated using α for the 24 items identified with an ICC ≥0.70 was α =0.90. None of the items had a greater α coefficient "if item was deleted", meaning that none of the items would substantially affect reliability if they were removed. Furthermore, all items had a "corrected item-total correlation" of 0.30 or above. Calculating the Cronbach's alpha of the retest gave an α coefficient of 0.913. Analysis of the results of the test and retest established a reasonable degree of both stability and homogeneity for the 24 items in the Flodén ATODAI [North American version] with an ICC ≥0.70 for test-retest reliability. Out of the remaining 22 items, 10 had an ICC ≥0.60 (i.e. good correlation), 9 had a fair ICC (0.40-0.59), while 3 had a poor ICC (<0.40). All items had been rated as "relevant and succinct" or

“relevant but needed minor alteration” by the *expert panel*. The majority of the 22 items with ICC <0.70 needed minor alterations as part of the Swedish to North American cross-cultural adaption. These alterations were performed using a Delphi technique procedure.

The Delphi Procedure

The Delphi procedure focused on the 22 items identified in step five as showing an ICC <0.70. During round I, the *Delphi panel* rated all 22 items as relevant, recommending 16 for minor alterations. Then, during round II, the *Delphi panel* members reviewed the adjusted items from round I and recommended further changes. The adjustments after both round I and round II involved emphasizing the core of the items via re-wording. The PI performed the final adjustments of the items, guided by feedback from the *Delphi panel*, until consensus was achieved.

Discussion

Before 2011, no studies measuring ATODA existed in the clinical context. Flodén *et al.* (13) developed and validated the Swedish 51-item ATODAS to measure ATODA among ICU and CC nurses. The primary limitation of the ATODAS is linguistic since it is written in Swedish, but socio-cultural and legal limitations exist, also. To address this limitation and allow the scale to be used in an international clinical context, a systematic translation procedure for cross-cultural adaptation was initiated and performed. This procedure to adapt and establish a North American version of the instrument, in terms of validity and reliability, led to the evolution from the Swedish 51-item ATODAS to the 46-item Flodén ATODAI instrument [North American version]. Access to a validated instrument is crucial to be able to explore and evaluate the attitudes toward ODA, nationally as well as internationally, including being able to measure the impact of, for example, education interventions and/or re-organizations. The procedure chosen, guided by Brislin's (18) back-translation, multi-step approach, resulted in two quantitative data collections, analyses and results, complemented with a qualitative Delphi technique procedure (Figure 1). Undertaking this multi-step approach effectively ensured that the cross-cultural adaptation procedure resulted in a stronger instrument for valid and reliable ODA attitude measurement.

The research procedure involved three different expert groups. *The international committee* of experts reviewed and synthesized the translation of the instrument as a validity check, ensuring the translated version reflected the same item content as the original version. Moreover, the committee analyzed the ratings provided by the *expert panel* and adjusted the instrument accordingly. The *expert panel* of ICU nurses rated the items in the prefinal version of the Flodén ATODAI [North American version] for CVI, leading to a reduction of five items from the instrument. In step five, the strength of agreement between the test and retest was calculated. Accepting an ICC ≥0.70 yielded a total of 24 items. The remaining 22 items were each rated as “relevant and succinct” or “relevant but needed minor alteration” by the *expert panel*. These alterations, as part of the cross-cultural adaption into the North American context, were performed by the final expert group, the *Delphi panel*. The members of the *Delphi panel* individually reviewed the 22 items that scored less than ICC 0.70 in the Flodén ATODAI [North American version] on

two separate occasions. Guided by their feedback, adjustments of the items were performed until consensus was achieved. By using a variety of designated groups of nursing expertise, different perceptions and feedback were obtained, resulting in a more efficient, valid, and reliable Flodén ATODAI [North American version].

The methodological procedure performed revealed evidence of validity and reliability for the Flodén ATODAI [North American version]. An I-CVI with a mean of 0.97 and an S-CVI for the whole instrument of 0.97. The test-retest reliability with ICC, where 34 of the 46 items had a good or excellent ICC ($\geq$0.60). The preferred level of ICC $\geq$0.70 resulted in 22 items with ICC <0.70, but only three of these items were scored as poor. The ICC level of agreement was confirmed by the weighted form of kappa coefficients (κ_{Weight}), with no items showing systematic differences. The ICC values were, as is to be expected, very similar to those of κ_{Weight} (25). The Delphi technique procedure was performed to test the remaining 22 items with ICC <0.70 for content relevance, clarity, and domain coverage. The participating *Delphi panel* confirmed the choice by rating all 22 items as relevant or very relevant. The Delphi technique procedure is not included in the original Brislin's approach (18), but was added to this study to increase the test-retest reliability of the Flodén ATODAI [North American version]. The scale reliability of the 24 items with ICC $\geq$0.70, estimated via Cronbach's alpha coefficient, was α =0.90 for the initial test, and 0.913 for the retest. The analysis of the test and retest established a satisfying stability and a satisfying homogeneity for the 24 items in the Flodén ATODAI [North American version] with ICC $\geq$0.70.

In a situation where the possibility of OD occurs in the ICU, the nurses are expected to enable the donation, within the boundaries of professional ethics (14,15). After review of the role and practice of the ICU and CC nurses in the United States of America, it became obvious the Swedish ATODAS needed adjustment before it could be used in North America, to fit its socio-cultural and legal context. The Flodén ATODAI [North American version] contributes ICU nurses' knowledge and perspectives regarding attitudes toward ODA. This knowledge is useful for the education of ICU staff in general, but for other ICU nurses in particular. Clinical benefits of the Flodén ATODAI enable identification of educational and organizational needs and may be useful to evaluate organizational changes, and if such changes will be sustainable over time. Thus, this multi-step approach has effectively ensured a stronger scale for assessing attitudes to ODA (Flodén ATODAI [North American version]) and provides a clear framework for further studies in other settings. The Flodén ATODAI [North American version] opens the possibilities to use this instrument to perform studies within the United States of America, as well as globally to measure ATODA. The translation procedure included a cross-cultural adaption of the instrument, enabling it to be adjusted for a more appropriate (and, therefore, useful) geographical, culture and linguistic context. The main differences between the Swedish version and the North American version of the instrument are due to national context, e.g. legislation and guidelines. The aim of developing the Flodén ATODAI [North American version] was to develop an instrument capable of supporting for nurses to gather knowledge and enact developing best practices and guidelines when advising and assisting (potential) organ donors and their families. In addition, the instrument may assist the professional development of ICU nurses.

This model of translation procedure and cross-cultural adaption is useful in different contexts, and provides a validated instrument to compare and apply for an international perspective on ODA.

Conclusion

The translated and tested instrument Flodén ATODAI [North American version] was adapted to be culturally relevant, yielding valid and reliable results for use in a clinical North American context within a global perspective. Undertaking this multi-step approach has effectively ensured that the cross-cultural adaptation procedure resulted in a stronger instrument for valid and reliable measurements. The North American version of the Flodén ATODAI provides a framework for researchers in general, but clinicians in particular, choosing to utilize this instrument for work in other cultural and geographic settings. Study limitations are that content validity of the 46-item Flodén ATODAI needs to be further scrutinized. Therefore, the next step should be to use the instrument in a large-scale study within North America and implement factor analysis to determine construct validity.

List Of Abbreviations

ATODA, Attitudes Toward Organ Donor Advocacy

ATODAI, Attitudes Toward Organ Donor Advocacy Instrument

ATODAS, Attitudes Toward Organ Donor Advocacy Scale (in Swedish)

CC, Critical Care

ICC, Intraclass correlation coefficient

ICU, Intensive Care Unit

I-CVI, Item - Content Validity Index

OD, Organ Donation

ODA, Organ Donor Advocacy

PI, Primary Investigator

S-CVI, Scale - Content Validity Index

Declarations

Ethics approval and consent to participate

This research study complies with the Declaration of Helsinki and the Declaration of Istanbul and obtained Institutional Review Board approvals from St. Vincent Medical Center, Los Angeles, CA (RE: IRB #12-032; RE: IRB #14-005) and Arrowhead Regional Medical Center, Colton, CA (Protocol #14-15). Moreover, the researchers obtained approval from the chief executive officer of each hospital prior to approaching the ICU nurses. All nurses that consented to participate signed a written consent form.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyses during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Author's contributions

AF (PI) participated in research design; performance of the research; data analysis; writing and revising the paper; and contributed with the research tool ATODAS (Swedish version of the questionnaire). MS participated in performance of the research; data analysis; writing and revising the paper. RA participated in performance of the research; data analysis of step three to five (Figure 1); writing and revising the paper. SC participated in performance of the research; data analysis of step six, the Delphi procedure (Figure 1); writing and revising the paper. TM participated in performance of the research; and writing and revising the paper. BF participated in research design; performance of the research; data analysis; and writing and revising the paper.

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Tables

Table 1. Socio-demographics of ICU nurses performing the test-retest of the 46-item Flodén ATODAI [North American version]

ICU or CC nurses	N=50
Age	25-63 years (mean 38 years)
Gender: Men Women	 n=13 n=37
Work experiences	0.1-34 years (mean 10.2 years)
Experience of caring for brain-dead patients: ≤ 5 times 6-10 times ≥ 10 times	 n=13 n=6 n=31

Table 2. Socio-demographics of panel (N=15) performing the Delphi technique procedure of the 46-item Flodén ATODAI [North American version]

Location:	
Greater Los Angeles	n=11
Western and South United States	n=4
Age	23-60 years (mean 46.7 years)
Gender:	
Female	n=12
Male	n=3
Ethnicity:	
Asian	n=7
Caucasian	n=6
Afro-American	n=2
Current workplace:	
Intensive Care (general)	n=8
Emergency Department	n=4
Trauma ICU	n=1
Cardiac ICU	n=1
Neuro ICU	n=1
Main position:	
Bedside nurse	n=14
Charge nurse	n=1
Work experience in ICU	3-32 years (mean 16 years)
Hospital:	
Community hospital	n=12
University hospital	n=2
Trauma hospital	n=1
Private hospital	n=1

Table 3. The strength of agreement between the test and retest of the 46-item Flodén ATODAI [North American version], as measured by ICC using ordered categorial data (20)

Excellent correlation (0.75-1.00)	n=16
Good correlation (0.60-0.74)	n=18
Fair correlation (0.40-0.59)	n=9
Poor correlation (<0.40)	n=3

Table 4. The level of agreement between the test and retest of the 46-item Flodén ATODAI [North American version] by κ_{Weight} (21)

Almost perfect agreement (0.81-0.99)	n=3
Substantial agreement (0.61-0.80)	n=17
Moderate agreement (0.41-0.60)	n=23
Fair agreement (0.21-0.40)	n=3
Slight agreement (0.01-0.20)	-
Less than chance agreement (<0)	-

Figures

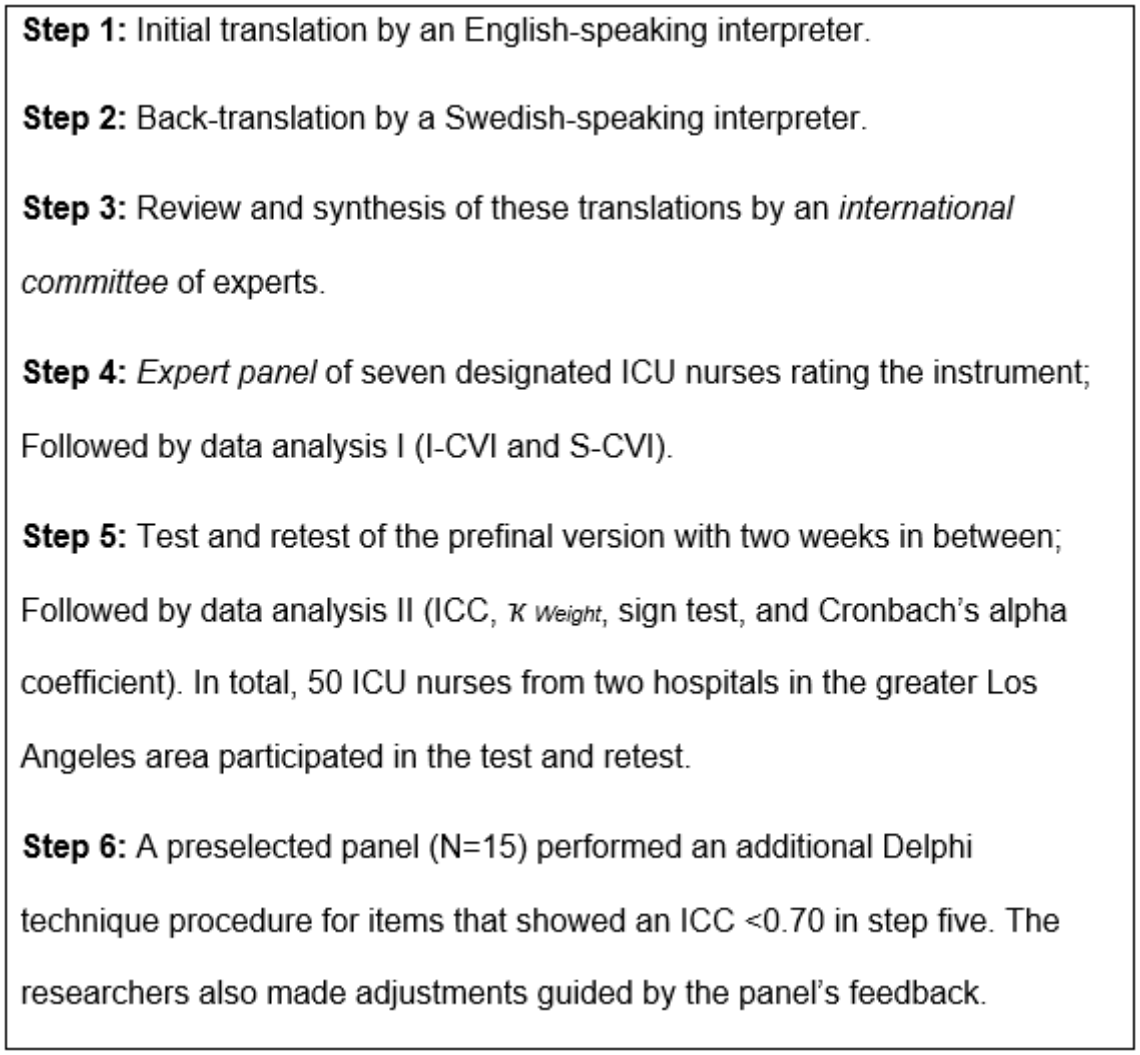

Figure 1

The cross-cultural adaptation procedure in six steps (according to Brislin (18) and Delphi technique (23)) for translating the 51-item Flodén ATODAS [Swedish version] to the 46-item Flodén ATODAI [North American version].