Health and Quality of Life Outcomes

Review

The Aging Males' Symptoms (AMS) scale: Update and compilation of international versions

Lothar AJ Heinemann*[1], Farid Saad[2], Thomas Zimmermann[3], Annoesjka Novak[4], Eric Myon[5], Xavier Badia[6], Peter Potthoff[7], Guy T'Sjoen[8], Pasi Pöllänen[9], Nikolai P Goncharow[10], Sehyun Kim[11] and Christelle Giroudet[12]

Address: [1]ZEG – Center for Epidemiology & Health Research Berlin, Invalidenstr. 115, 10115 Berlin, Germany, [2]SBU Fertility Control/Hormone Therapy, Schering AG, PB 650311, 13342 Berlin, Germany, [3]Medical Affairs Gynaecology, Jenapharm Jena, Otto-Schott-Str.15, 07745 Jena, Germany, [4]Strategy & Business Development Department, NV Organon, PO Box 20, 5340 Oss, The Netherlands, [5]PharmacoEconomics Programmes, Pierre Fabre S.A., 45 Place Abel Gance, 92654 Boulogne-Billancourt Cedex, France, [6]Health Outcomes Research Europe, c/Plato, 6-1°5a, 08021 Barcelona, Spain, [7]NFO Health Europe, Landsberger Straβe 338, 80687 Munich, Germany, [8]Department of Endocrinology, University Hospital Ghent, 9K12 IE, De Pintelaan 185, 9000 Gent, Belgium, [9]Institute of Biomedicine and Department of Obstetrics and Gynecology, University of Turku, 20520 Turku, Finland, [10]Russian Centre for Endocrinology, Russian Medical Academy, Ulyanova Street 11, 117036 Moscow, Russia, [11]Department of Preventive Medicine, College of Medicine, Pochon CHA University, Pochon, Korea and [12]Linguistic Validation Department, MAPI Research Institute, 27 rue de la Villette, 69003 Lyon, France

Email: Lothar AJ Heinemann* - Heinemann@zeg-berlin.de; Farid Saad - farid.saad@schering.de; Thomas Zimmermann - thomas.zimmermann@jenapharm.de; Annoesjka Novak - annoesjka.novak@organon.com; Eric Myon - eric.myon@pierre-fabre.com; Xavier Badia - xbadia@hor-europe.com; Peter Potthoff - peter.potthoff@nfoeurope.com; Guy T'Sjoen - guy.tsjoen@rug.ac.be; Pasi Pöllänen - pasi.pollanen@fimnet.fi; Nikolai P Goncharow - gonchar@endocrin.msk.su; Sehyun Kim - skim@cha.ac.kr; Christelle Giroudet - CGiroudet@mapi.fr

* Corresponding author

Published: 1 May 2003

Health and Quality of Life Outcomes 2003, **1**:15

Received: 29 January 2003
Accepted: 1 May 2003

This article is available from: http://www.hqlo.com/content/1/1/15

Abstract

Background: The interest of clinical research in aging males increased in recent years and thereby the interest to measure health-related quality of life (HRQoL) and symptoms of aging men. The Aging Males' Symptoms scale (AMS) became the most commonly used scale to measure HRQoL and symptoms in aging males in many countries worldwide. The aim of this paper is to review the current state of the instrument particularly concerning versions of the scale in different languages in the light of the quality of the translation process.

AMS versions available: Most of the translations were performed following international methodological recommendations for linguistic & cultural adaptation of HRQoL instruments. Mainly the English version was used as source language for the translation into Dutch, Spanish, Portuguese, Italian, Swedish, and Japanese (attached as additional PDF-files). Preliminary versions that were derived only from forward translations are of secondary quality and available in Finnish, Flemish, and Russian. It is recommended to complete the translation process for the latter languages before using them in international studies.

Translations in process: The AMS scale is in the process of consensus finding of two existing French versions, and the versions in the Korean, Thai, and Indonesian languages have not yet been completed in the translation process.

Conclusion: The AMS scale is obviously a valuable tool for assessing health related quality of life in aging men, because it is used worldwide. It is a standardized scale according to psychometric norms. Most of the currently available language versions were translated following international standards for linguistic and cultural translation of quality of life scales. Assistance is offered to help interested parties in the translation process.

Background

The interest of clinical research in aging males increased in recent years and thereby the interest to measure health-related quality of life and symptoms of aging men.

The Aging Males' Symptoms (AMS) scale was originally developed in Germany in 1999 [1] based on the assumption that – like women during their menopausal transition – men also develop similar complaints [2]. The scale was designed (a) to assess symptoms of aging (independent of those which are disease-related) between groups of males under different conditions, (b) to evaluate the severity of symptoms over time, and (c) to measure changes pre- and post androgen replacement therapy [3]. It was developed in response to the lack of fully standardized scales to measure the severity of aging symptoms and their impact on HRQoL in males, specifically [4,5]. A review of reliability and validity of the scale was published elsewhere [5], further details will not be discussed in this paper.

The development of the scale started with the comparison of more than 200 variables in more than 100 medically well characterized males (aged over 40 years). A factorial analysis was applied to establish the raw scale of complaints or symptoms that are not particularly related to diseases, treatment, social and other variables, but related with aging. Statistical methods were used to identify the dimensions of the scale and to reduce the number of items of the raw scale. Finally, three dimensions of symptoms/complaints were identified in the patients group: a psychological, a somato-vegetative, and a sexual factor that explained 51.6% of the total variance and the number of items of the scale could be reduced to 17. This final scale was applied to a large representative population sample of 992 German males in order to establish reference values for the severity of symptoms in males over 40 [1].

The scoring scheme is simple, i.e. the score increases point by point with increasing severity of subjectively perceived complaints in each of the 17 items (severity 1...5 points). By checking one of 5 possible boxes of "severity" for each of the items the respondent provides his personal perception. This can be seen in the questionnaires in the additional files linked to this publication. The composite scores for each of the dimensions (sub-scales) is based on adding up the scores of the items of the respective dimensions. The composite score (total score) is the sum of the dimension scores. The three dimensions, their corresponding questions and the evaluation are detailed and summarized in an attached file linked to this publication [see Additional file 13].

The German original AMS scale was first translated and culturally adapted into English, showing cross-cultural equivalence [4].

Sporadic information about translations into other than the two first languages received by the developer of the scale (first author LAJH) led to the need to gather more complete information about the translation process from all key persons involved. It was agreed among the contributors to publish this review as update together with all known language versions and to discuss quality issues.

Thus, the aim of this review paper is to present all translations we are aware of and to provide some details about quality-relevant issues of the translation process. This should help other international research groups to contact key persons, to have easy access to certain language versions, and to prevent double translations.

AMS versions available

Most but not all of the translations were performed in congruence with international methodological recommendations for linguistic & cultural adaptation of HRQoL measures [6–12] using mostly the English version as source language to ensure cross-cultural equivalence among countries [6]. Six steps of the translation process are recommended: Forward translations (at least two independent translators), a consensus meeting with the coordinator of the translation, a check by a bilingual expert in the application field of the scale to evaluate the scientific correctness of the wording, a backward translation, a consensus meeting among the translators with the coordinator, and finally a pretest with a few persons the test is designed for (also called cognitive debriefing).

Table 1: Review of AMS scales available in different languages Characteristic of linguistic & cultural translation

	Internationally recommended translations									Incomplete translations		
	German	English	Swedish	Dutch	Spanish	Portuguese	Italian	Japanese	Korean*	Finnish	Russian	Flemish
Source language	Original	German	English	English	English	English	English	English	English	English	English	English
Forward translations: number	n.a.	3	2	2	2	2	2	2	2	2	1	1
Forward translation: consensus meeting	n.a.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Bilingual (medical) expert	n.a.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Backward translation	n.a.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not yet	No	No	No
Backward translation: consensus meeting	n.a.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not yet	n.a.	n.a.	n.a.
Pretest with patients (cognitive debriefing)	n.a.	Yes (20)	Yes (20)	Yes (5)	Yes (5)	Yes (20)	Yes (20)	Yes (5)	Yes(25)	Yes	No	Yes
Developer of the scale involved in the translation process	n.a.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Test-retest (number)	Yes (102)	Yes (92)	Yes (48)	No	Yes (30)	Yes (40)	Yes (40)	No	Yes (25)	Yes (89/208)	No	No
Clinical study with AMS	Yes	No?	Planned	Yes	Yes	Planned	Planned	Planned	Yes?	Yes	No	(Yes)

n.a. = not applicable * = to be completed in due course

The table shows the results of an inquiry among the authors of different existing language versions of the AMS. It demonstrates that most of the translations followed the recommended process, but a few did not for various reasons such as lack of financial sources, no need of international compatibility of results obtained with the scale or others. Specific reasons were not inquired. However, potential users of these incompletely adapted scales (Finnish, Flemish, Russian language) should be encouraged to complete the translation and assistance of authors of this paper is offered – if needed. The same applies for other languages that might be needed.

As one can see from the table, the translations that followed the recommended process involved mostly 2 forward translators, a consensus meeting between these translators with the coordinator of the translation process. The objective of all consensus meetings is to find an acceptable solution, i.e. to make corrections, revisions, or confirm the translation. A bilingual expert of the field, often a physician, compared the translations from the scientific perspective and in a discussion with the coordinator of the translation necessary adaptations or corrections were made, and followed by a backward translation. A pretest with patients was performed in all cases. The number ranged between 5 and about 20 patients in most countries.

Most of the translations were based on the English version as source language. This was the first version that was published after the standardization of the original German AMS scale in 2000 [3]. In the translation process of the English version we became aware at the preliminary end of the translation process, that from the view of the North American translators further revision was essential. A consensus meeting finally agreed upon a wording that was compatible in both cultures and also in different social classes.

Most of the other existing versions were translated only in the language of the mother-country. If the scale should be applied in another country with the "same" language (e.g. the Spanish version in Mexico, Argentine or Cuba), at least a critical review of the translation has to be made by a group experienced in the field of cultural adaptation. In some cases, a new translation could be necessary that may even influence the translation into the original language – if compatibility is required. This is a complex process that needs expert experience, which can be offered from the authors of this publication or from the developer of the scale (LAJH).

Critical distance is particularly important if results of the AMS are intended to be pooled between different populations or regions, and less important if a study is planned as before-after-treatment-comparison in one country with only one language. The latter applies only if the linguistic/cultural adaptation process considered different social classes and regions with slight language differences, which is standard in experienced groups.

For completeness, all AMS versions are attached as additional files in PDF-format (Adobe Acrobat), even the preliminary language versions that obviously did not follow the "state-of-the-art" translation process (Finnish, Russian and Flemish language) or are not completed (Korean language). The majority of language versions, however, followed the same, i.e. internationally recommended,

complex methodology of language adaptation. For this reason, we can assume that they have linguistic and cultural equivalence, although different groups did the translation work. We will further try to facilitate this process in other languages if requested.

For access to the original scales in 12 different languages, please see additional files linked to this publication:

- Additional file 1: German version of the AMS
- Additional file 2: English version of the AMS
- Additional file 3: Swedish version of the AMS
- Additional file 4: Finnish version of the AMS
- Additional file 5: Dutch version of the AMS
- Additional file 6: Flemish version of the AMS
- Additional file 7: Spanish version of the AMS
- Additional file 8: Portuguese version of the AMS
- Additional file 9: Italian version of the AMS
- Additional file 10: Russian version of the AMS
- Additional file 11: Japanese version of the AMS
- Additional file 12: Korean version of the AMS

It should be stressed that persons who are interested in applying the AMS scale in their research can download the appropriate language version and use it without any formal permission. However, it would be important to keep an overview who is using the scale and for what reason. Therefore, an information should be sent to the developer and copyright holder of this scale (LAJH). In return, all information on the scale that became known in between will be made available.

Translations in progress

The AMS scale is in the process of translation in KOREA (attached as PDF-File of the forward translation), in THAILAND (personal communication: Somboon Leungwattanakij, Division of Urology, Ramathibodi Hospital, Bangkok, Thailand), and in INDONESIA (personal communication: Dr. Akmal Taher, Indonesia). In addition, there is a consensus process almost completed to establish a reference version of two existing French AMS scales. The harmonized French version will be published soon and will be available on request.

Conclusions

The AMS scale is obviously a valuable tool for assessing health related quality of life in aging men, because it is used worldwide. It is a standardized scale according to psychometric norms. Most of the currently available language versions were translated following international standards for linguistic and cultural translation of quality of life scales. Assistance is offered to help interested parties in the translation process.

Competing interests

None declared.

Authors' contributions

LAJH: developer of the scale, involved in the collection of the language versions, and in writing of the paper. FS: involved in the co-ordination of several translations and collection of information, contributed to writing of the paper. TZ: co-authors of the original German AMS scale, contributed to writing of the paper. AN: involved in the co-ordination of the translations into Dutch, French, and Japanese, contributed to writing of the paper. EM: involved in the co-ordination and performance of the translations into French, and Spanish, contributed to writing of the paper. XB: responsible for the translation into Spanish, provided the data, and contributed to writing of the paper. PePo: involved in the co-ordination of the translations into Swedish, Portuguese, and Italian language, provided data from those countries, and contributed to writing of the paper. GTS: responsible for the translation into Flemish, provided the data, and contributed to writing of the paper. PaPö: responsible for the translation into Finnish, provided the data, and contributed to writing of the paper. NPG: responsible for the translation into Russian, and provided the relevant information. SK: responsible for the translation into Korean, provided the data, and contributed to writing of the paper. CG: responsible for the translation into Japanese, provided the data, and contributed to writing of the paper.

Additional material

Additional File 13
Aging Males' Symptoms (AMS) rating scale: Evaluation Form
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S13.pdf]

Additional File 1
German version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S1.pdf]

Additional File 2
English version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S2.pdf]

Additional File 3
Swedish version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S3.pdf]

Additional File 4
Finnish version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S4.pdf]

Additional File 5
Dutch version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S5.pdf]

Additional File 6
Flemish version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S6.pdf]

Additional File 7
Spanish version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S7.pdf]

Additional File 8
Portuguese version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S8.pdf]

Additional File 9
Italian version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S9.pdf]

Additional File 10
Russian version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S10.pdf]

Additional File 11
Japanese version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S11.pdf]

Additional File 12
Korean version of the AMS
Click here for file
[http://www.biomedcentral.com/content/supplementary/1477-7525-1-15-S12.pdf]

References

1. Heinemann LAJ, Zimmermann T, Vermeulen A and Thiel C **A New 'Aging Male's Symptoms' (AMS) Rating Scale** *The Aging Male* 1999, **2:**105-114
2. Heinemann LAJ, Thiel Ch, Assmann A, Zimmermann T, Hummel W and Vermeulen A **Sex differences of ,,climacteric symptoms'' with increasing age? A pooled analysis of cross-sectional population-based surveys** *The Aging Male* 2000, **3:**124-131
3. Badia X and Herdman M **The importance of health-related quality-of-life data in determining the value of drug therapy** *Clin Ther* 2001, **23(1):**168-75
4. Heinemann LAJ, Saad F, Thiele K and Wood-Dauphinee S **The Aging Males' Symptoms (AMS) rating scale. Cultural and linguistic validation into English** *The Aging Male* 2001, **3:**14-22
5. Heinemann LAJ, Saad F and Pöllänen P **Measurement of Quality of Life Specific for Aging Males** *In: Hormone Replacement Therapy and Quality of Life. Parthenon Publishing Group. (Edited by: Schneider HPG) London, New York, Washington* 2002, 63-83
6. Herdman M, Fox-Rushby J and Badia X **A model of equivalence in the cultural adaptation of HRQOL instruments: the universalist approach** *Qual Life Res* 1998, **7:**323-35
7. Anonymous **Trust introduces new translation criteria** *Medical Outcomes Trust Bulletin* 1997, **5:**2-4
8. Aaronson NK, Acquadro C and Alonso J **International Quality of Life Assessment (IQOLA) project** *Quality of Life Research* 1992, **1:**349-351
9. Acquadro C, Jambon B, Ellis D and Marquis P **Languages and translation issues** *Quality of Life and Pharmaco-Econonomics in Clinical Trials (Edited by: Spilker B)* 1996, 575-585
10. Brislin RW. **Backtranslation for Cross-Cultural Research** *J Cross-Cultural Psychology* 1970, **1(3):**185-216
11. Brislin RW **Questionnaire Working and Translation** *In: Cultural Research Methods (Edited by: Lonner WJ, Thorndike RM) John Wiley, New York* 1973, 32-58
12. Brislin RW **The Working and Translation of Research Instruments** *In: Field Methods in Cross-Cultural Research (Edited by: Lonner WJ, Berry JW) Sage Publications, Beverly Hills* 1968, 137-164