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Alhaidary, A¹; Tanniru, K²; Almufarrij, I³.**ADMINISTRATIVE INFORMATION****Support** - None.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY2023120052**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 December 2023 and was last updated on 13 December 2023.**INTRODUCTION**

Review question / Objective The present review aims to identify and report on all hearing- and tinnitus-related self-reported measures currently available in Arabic. Furthermore, the study aims to determine whether these measures have been validated and cross-culturally adapted when translated from other languages, providing insights into their reliability and applicability to Arabic-speaking.

Background Hearing is an essential sense for perceiving and understanding verbal communication. Hearing loss can have adverse effects not only on communication abilities but also on social and personal well-being. Globally, more than 1.5 billion people are living with hearing loss, of which 430 million have disabling hearing loss (World Health Organization, 2021). The self-perceived impact of hearing loss and the benefit and satisfaction of any hearing loss management option are captured using self-report measures

(e.g., The Abbreviated Profile of Hearing Aid Benefit [APHAB; Cox and Alexander, 1995], The Glasgow Hearing Aid Benefit Profile [GHABP; Gatehouse, 1999], The International Outcome Inventory for Hearing Aids [IOI-HA; Cox and Alexander, 2002]).

While most of the self-report measures were developed and validated in English, some were systematically and non-systematically translated and cross-culturally adapted into other languages, including Arabic. For example, the Arabic version of the APHAB is available on the Hearing Aid Research Lab website, but the process of how the measure was translated and cross-culturally adapted is unknown. In contrast, the Arabic version of the Effort Assessment Scale and the Fatigue Assessment Scale (Alhanbali et al., 2023) were translated into Arabic following Hall et al.'s (2018) six-step guide for translating and cross-culturally adapting self-reported hearing-related questionnaires. These guidelines, involving preparation, translation, back translation, committee review, field testing, and final review,

help enhance the quality and validity of translated questionnaires. Poor and non-systematic translation processes may lead to an inequivalent version of the original self-report questionnaire, limiting the use of the measure and cross-cultural comparability of outcomes.

Arabic is the fifth most common global language, spoken by half a billion individuals worldwide. It has several varieties. Classical Arabic is the old formal Arabic, the language of the pre-Islamic and early Islamic periods in which the Quran and old texts (e.g., poetry, historical events) were written. Modern standard Arabic is the modern version of classical Arabic. Usually, it is learned through formal education, and is used for formal communication (e.g., professional meetings, TV news, newspapers). Colloquial Arabic is the informal version of spoken Arabic, and it is not commonly written except in internet discussion sites such as social media posts and blogs. It is considered to be the mother tongue for Arabic native speakers. Colloquial Arabic is spoken with different dialects that are distributed geographically across countries (e.g., Saudi, Egyptian, Syrian, Iraqi) and even within the same country, e.g., Najdi Saudi Arabic, Hijazi Saudi Arabic, Bedouin Palestinian Arabic, Fellahi Palestinian Arabic (Holes, 2004).

Rationale Despite the widespread use of Arabic, there is a gap in our understanding of the availability, validation, and cross-cultural adaptation of hearing- and tinnitus-related self-report measures in Arabic.

METHODS

Strategy of data synthesis Four different databases will be utilized to identify relevant Arabic questionnaires and validation studies: PubMed, Embase, Web of Science, and PsycINFO. Additionally, the first 100 hits from both Google Scholar will be screened to capture relevant papers. No restrictions or limits will be imposed on the searches concerning age, language, evidence type, or publication year.

Furthermore, references and citations of the shortlisted papers will be scrutinized to identify more relevant literature.

The search strategy will be developed and iteratively tested by the first author, with subsequent refinements by co-authors. The strategy comprises of both controlled terms and free text. The proposed search strategies for all databases are reported in the supplement material 1. The proposed search strategy for PubMed is as follows: ("Arabic"[Text Word] OR "Arab"[Text Word]) AND ("Hearing"[MeSH Terms] OR "Hearing

loss"[MeSH Terms] OR "persons with hearing impairments"[MeSH Terms] OR "Hearing difficulties"[Text Word] OR "Hearing difficulty"[Text Word] OR "audiology"[MeSH Terms] OR "deafness"[MeSH Terms] OR "deaf"[Text Word] OR "auditory"[Text Word] OR "Hearing"[Text Word] OR "Hearing loss"[Text Word] OR "Hearing Impairment"[Text Word] OR "Hearing Impairments"[Text Word] OR "hearing impaired"[Text Word] OR "hearing problem"[Text Word] OR "hearing problems"[Text Word] OR "Tinnitus"[MeSH Terms] OR "Ringing"[Text Word] OR "Ring"[Text Word] OR "roaring"[Text Word] OR "roar"[Text Word] OR "buzzing"[Text Word] OR "buzz"[Text Word] OR "hissing"[Text Word] OR "hiss"[Text Word] OR "humming"[Text Word] OR "whistling"[Text Word]) AND ("Quality of Life"[MeSH Terms] OR "communication"[MeSH Terms] OR "surveys and questionnaires"[MeSH Terms] OR "self report"[Text Word] OR "self reported"[Text Word] OR "patient reported"[Text Word] OR "patient report"[Text Word] OR "questionnaire"[Text Word] OR "instrument"[Text Word] OR "scale"[Text Word] OR "index"[Text Word] OR "tool"[Text Word] OR "survey"[Text Word] OR "communication ability"[Text Word] OR "listening fatigue"[Text Word] OR "quality of life"[Text Word] OR "quality-of-life"[Text Word] OR "spatial"[Text Word] OR "hearing aid use"[Text Word] OR "beliefs"[Text Word] OR "self efficacy"[Text Word]).

Eligibility criteria The inclusion and exclusion criteria are reported in accordance with the Participants, Concept, and Context (PCC) framework. Participants: Arabic-speaking individuals of any age group and hearing status, irrespective of their geographic location. Concept: Self-report questionnaires related to hearing or tinnitus aimed at measuring the impact of hearing loss or amplification devices. Context: Originally developed or translated Arabic-language questionnaires available in all types of literature (i.e., peer-reviewed and non-peer-reviewed papers, as well as websites), irrespective of publication type.

Source of evidence screening and selection

Two independent authors will screen the titles and abstracts for inclusion. Subsequently, the full text of all the shortlisted records will be retrieved and reviewed against the eligibility criteria. Any disagreements will be resolved through consensus or with the involvement of a third author. The selection process will be illustrated using a PRISMA flow chart, and reasons for exclusion will be provided in a supplement material.

Data management One independent author will chart the data, and a proportion will be cross-verified by another independent author. A predefined extraction form will be utilized to gather information from the included studies. The items on the form will be iteratively tested for appropriateness using at least two known articles.

Reporting results / Analysis of the evidence

Data will be narratively synthesized and categorized into two main groups: hearing and tinnitus self-reported questionnaires.

Presentation of the results Data will be presented narratively.

Language restriction No restrictions.

Country(ies) involved Saudi Arabia.

Keywords Arabic; Self-report; patient-report; questionnaire.

Dissemination plans The findings of this review will be published in a peer-reviewed journal.

Contributions of each author

Author 1 - Abdulsalam Alhaidary - Drafted and reviewed the final version of the protocol.

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