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EXPECTATIONS QUESTIONNAIRE FOR ADULTS WITH COCHLEAR IMPLANTS (EQA-CI): TRANSLATION, ADAPTATION AND CROSS-CULTURAL VALIDATION TO BRAZILIAN PORTUGUESE

Fayez Bahmad Jr[1] - fayezbjr@gmail.com,
Ingrid Barros da S. Santana - fgaingrid@gmail.com,
Francisco Wallison Lucena da Silva[1] - fwlucenads@gmail.com ,
Fernanda Ferreira Caldas[1] - fernandaffc@gmail.com,
Carolina Cardoso[1] - costacardosoc@gmail.com
[1]University of Brasília

INTRODUCTION

Hearing rehabilitation includes interventions like Cochlear Implants (CIs), Hearing Aids (HAs), and Bone-Anchored Hearing Aids (BAHAs), combined with counseling and auditory training. CIs provide peripheral stimulation to access speech sounds[3], but not all users achieve expected speech recognition levels, and traditional assessments often miss aspects like listening effort and emotional well-being[4].

CI decision-making requires managing expectations and clarifying details about technology, training, and surgery[5]. Inadequate pre-surgical preparation can hinder adaptation and satisfaction[6], while using an expectations questionnaire may improve postoperative outcomes[4,7]. In Brazil, no questionnaires assess adult CI candidates' expectations. Studies mainly focus on teenagers[8] or parental perspectives[9]. The Cuestionario Expectativas para Adultos (CEA) covers essential domains[10], and this study aims to translate, culturally adapt, and validate it for Brazil following international guidelines[11]

METHODS

Recruitment occurred in two phases: first, 19 cochlear implant candidates from an auditory rehabilitation center participated in the instrument adaptation, with data collected in person; second, 100 participants were recruited online. In total, 119 adults (mean age 46.6 years; 64 females, 55 males) participated, with 36 having pre-lingual and 83 post-lingual hearing loss; 95% had bilateral and 5% unilateral hearing loss, and 87% used hearing aids. Educational levels varied, with 4% completing elementary school, 14% high school, 60% undergraduate, and 22% postgraduate studies. Inclusion criteria required adults with severe and/or profound sensorineural hearing loss, Brazilian nationality, and Portuguese literacy, while refusal to participate was the sole exclusion criterion.

Translation and adaptation process followed the Guillemin et al. (1993)[12] protocol, and the validation process followed the principles of the Standards for Educational and Psychological Testing (SEPT)[13]. Translation methodology occurred in six stages.

I - Translation; II- Back-translation; III - Expert committee; IV - Pre-test; V - Adaptation; VI - Validation.

Data analysis followed Structural Equation Modeling (SEM), requiring at least 100 participants. Item Response Theory (IRT) assessed item parameters, while internal consistency was evaluated via Cronbach's Alpha (α), McDonald's Omega (ω), and Composite Reliability (C.C.). And, construct validity was examined through ICCs for item discrimination and TICs for overall test information and error.

RESULTS

The entire instrument presented a satisfactory result Content validity index (CVI) = 0.974 (Table 1)

Table 1. Agreement percent

	CVI	Interpretation	% agreement
Q1	1,000	Acceptable	100,00%
Q2	1,000	Acceptable	100,00%
Q3	1,000	Acceptable	100,00%
Q4	0,895	Acceptable	89,47%
Q5	1,000	Acceptable	100,00%
Q6	0,947	Acceptable	94,74%
Q7	0,947	Acceptable	94,74%
Q8	0,947	Acceptable	94,74%
Q9	1,000	Acceptable	100,00%
Q10	1,000	Acceptable	100,00%
Q11	0,947	Acceptable	94,74%
Q12	0,842	Acceptable	84,21%
Q13	0,684	Unacceptable	68,42%
Q14	0,895	Acceptable	89,47%
Q15	0,947	Acceptable	94,74%
Q16	0,947	Acceptable	94,74%

Therefore, a psychometric analysis gathered evidence of content validity based on the understanding of items by the target population and could be applied on a large scale.
The Item Characteristic Curves (ICCs) shown in Figure 3 indicate that items Q10, Q9, and Q5 provided the most information, as evidenced by their larger, more pronounced curves. The Test Information Curve (TIC) reflects the questionnaire's sensitivity, with discrimination indicating how well it distinguishes individuals and difficulty representing the expectation level required to score. Thus, the questionnaire shows good reliability, sensitivity, and validation evidence for Brazilian Portuguese.

DISCUSSION

Patient expectations, though widely studied in medicine, remain underexplored in cochlear implantation[18]. Professionals often rely on speech tests, neglecting social, emotional, and communicative factors[16]. The EQA-CI helps profile patients, align expectations, correct misconceptions, and support informed decisions[17]. Expectations cover functional (speech comprehension, phone use), psychosocial (social reintegration), emotional (reduced isolation), and device-related aspects (natural sound, comfort)[18,19,20]. Managing expectations improves satisfaction, adherence, and quality of life, while misalignment risks dissatisfaction and device abandonment[19,20].

CONCLUSION

The psychometric properties (internal consistency, content validity index, factor analysis and item response theory) indicate the questionnaire was translated, adapted and presents high and reliable validity indices for brazilian portuguese translation.

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