Research Article

Cultural Adaptation and Psychometric Properties of the Persian Version of the Evidence-Based Practice Attitudes Scale in Audiologists

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Highlights

● Evidence-based practice improves the quality of health services

● Therapist's attitude affects implementation of evidence-based principles in practice

● Audiologists are not effectively using research findings in clinical practice

A B S T R A C T

Background and Aim: Evidence-based practice improves the quality of clinical performance. Attitude affects the implementation of research findings into practice. The Evidence-Based Practice Attitude Scale (EBPAS-36) evaluates the attitude of therapists toward evidence-based practice. The present study aimed to provide a validated Persian translation of the EBPAS-36 for audiologists.

Methods: The original EBPAS-36 was translated by using the international quality of life assessment protocol. The validity of translated version was surveyed by an expert panel and the Persian version with 35 questions was yielded. A demographic questionnaire and EBPAS P-35 were given to 182 audiologists to evaluate the psychometric properties. The reliability was evaluated by completing the EBPAS P-35 after 2 weeks by 30 of the participants and Cronbach's alpha and Intra-Class Correlation (ICC) were calculated. Confirmatory Factor Analyses (CFA) were also conducted.

Results: The content validity ratio was above 0.33 for all except item 10 which was removed from the Persian version. The mean(SD) total score was 2.38(0.46). A significant relationship was observed between the total score and all subscales (p<0.05). The original factor structure showed an acceptable model fit (CMIN/DF=1.39, GFI=0.84, CFI=0.94, IFI=0.94, RMSEA=0.04) confirming the 12-factor structure of the EBPAS-36. The internal consistency was very good for the total score (α=0.88) and adequate to very good for the subscales (0.65–0.84), indicating high reliability. The ICC showed good agreement in the score of test-retest (total ICC=0.65).

Conclusion: This study confirms good psychometric properties and validity of the EBPAS P-35 in a sample of audiologists.

Keywords: Evidence-based practice; research-based intervention; clinical implementation; attitude; audiologist

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Introduction

Evidence-Based Practice (EBP) signifies the best current evidence in clinical decision-making for patient care and implementing research findings to improve clinical practice [1]. EBP leads to more accurate, effective and safer diagnosis and treatment, and finally, better quality of health services and clinical decision-making [2]. Nowadays, EBP has been integrated into conventional clinical and care services in many health conditions. Also, evidence-based guidelines were introduced to reduce costs and injuries caused by improper interventions. Guidelines are derived from a combination of research evidence, clinical experience, and patient preferences. These three factors are important components in defining EBP, which synthesize together for the best clinical decision-making [3, 4]. In this regard, the American Speech-Language-Hearing Association (ASHA, 2005) has emphasized the combination of evidence-based methods with the decision-making process in audiology and speech-language pathology services. The implementation of EBP is regarded as one of the fundamental values of the Audiology American Association [5]. A review study on the professional activities of audiologists and speech-language pathologists showed that the ASHA and Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) support the use of evidence-based principles in clinical practice, professional education, and research [6].

The history of audiologists' consideration of evidence-based methods goes back to 1989 when Doyle's study showed that they gave little priority to published articles in their clinical decisions and assigned a higher rank to other sources of information [1]. In recent years, the clinical decision-making model of audiologists has focused on a patient-centered rather than a practitioner-centered model [2, 3]. Despite the increased evidence-based services over the ex-practitioner-centered style, some studies still report that audiologists are not effectively using research findings and patient-centered care [4, 5]. For example, it is proven that Real Ear Measurement (REM) improves hearing aid performance and increases patient satisfaction, but a small percentage of clinicians are interested [6]. There are barriers to changing clinical performance and the gap between research and practice, which can be divided into individual and organizational factors. The level of education, job title, time spent on studying, and people's attitudes and beliefs are examples of individual barriers. The organization's management strategy, access to resources and research findings, organizational culture and climate, training and acquiring skills, workload and financial issues are some of the organizational factors [7].

Attitude is one of the main parameters in the implementation of theories and frameworks in practice [8]. Various theoretical models have been proposed regarding the role of attitude on choice and behavioral intentions, which assume that different elements of attitude have different effects on decision-making [9, 10]. By evaluating therapists' attitudes towards EBP, the Evidence-Based Practice Attitude Scale (EBPAS) helps to apply helpful strategies in research, as well as improve educational and clinical practice. The EBPAS was designed by Aarons to evaluate the attitude of mental health service providers [11].

In this questionnaire, therapists' feelings towards EBP are measured, and a broad range of factors affecting the prediction, tendency, or resistance to evidence-based treatments are evaluated. Evidence-based interventions are any type of treatment or new intervention that is followed according to a specific guideline or a predetermined method or manual. A higher score in the EBPAS shows a more positive attitude towards EBP. The EBPAS has been translated into Swedish [12], German [13], Dutch [14], Norwegian [15] Spanish [16] and Turkish [17] languages.

The current study aimed to develop the Persian version of EBPAS-36 and evaluate its psychometric properties (cultural adaptation, face validity, factor structure, and reliability).

Methods

This is a test development cross-sectional study that was conducted from 2021 to 2022 at the Iran University of Medical Science. First, the original EBPAS-36 was translated from English into Persian. The cultural adaptation of the translated version was reviewed with a survey of experts. The face validity was checked by the experts and the target population of the study (audiologists). The validated Persian questionnaire

(EBPAS P-35) was given to a larger population of audiologists to investigate the factor structure and the effect of demographic characteristics on its scores. Also, its reliability was evaluated by completing the questionnaire after 2 weeks again.

Participant

The opinions of 29 experts (21 audiologists and 8 otolaryngologists) were used for the cultural adaptation stage. The face validity was conducted with a survey of 43 experts and colleagues active in the field of clinical work (14 Audiology experts, 13 otolaryngology experts, and 16 clinical audiologists). For factor structure analysis, 300 active audiology colleagues across the country were offered to participate in the survey after coordinating with the Iranian Audiology Association. A total of 182 people completed the final validated Persian EBPAS and a demographic questionnaire. To check the time reliability, 30 out of 182 participants were asked to take part.

Translation

The first version of EBPAS (EBPAS-15) developed by Aarons contains 15 items in the form of 4 subscales [11]. In another study, the same researchers added 8 more dimensions of attitude to the subscales, and the 50-question version of the EBPAS (EBPAS-50) was developed with 12 subscales [18]. After that, due to the need for a reliable and concise tool, a shortened version of 36 questions with the same 12 previous subscales was created (EBPAS-36) [18] These subscales include: 1) appeal (intuitive desire of EBP) 2) requirements (EBP has been requested to do) 3) Openness (accepting new methods) 4) divergence (the difference between the conventional treatment and the evidence-based methods) 5) limitation (weaknesses and deficiencies of EBP) 6) fit (suitability with the needs of the patient and the therapist) 7) monitoring (negative perception of being controlled) 8) balance (balance between clinical skill and knowledge) 9) burden (administrative burden and time associated with EBP learning) 10) security (creating job security with EBP) 11) support (organizational support for EBP learning) 12) feedback (positive perception of receiving feedback when providing services). The total score of EBPAS is calculated by summing the scores of all of the subscales and reversing the score of the divergence, balance, burden, limitation and monitoring subscales. In this study, a 36-question version of the questionnaire was used because it is short and yet comprehensive. The International Quality of Life Assessment protocol [19] was employed to translate the original EBPAS-36 questionnaire [20] from English to the Persian language after communicating with the main author via email to obtain permission to translate the questionnaire. In the forward translation stage, two Persian translators (translators 1 and 2) fluent in English separately provided a translation of the items as well as a list of possible choices. These translators emphasized the conceptual identity of the items with the original version, not the lexical equivalence. Translators 1 and 2 scored each item in terms of translation difficulty level with a 3-point Likert scale (1- easy, 2- moderate, 3- difficult). Then, the primary Persian version, which was obtained with the agreement of researchers and translators 1 and 2, was given to two bilingual Persian translators fluent in English (translators 3 and 4). Translators 3 and 4 scored the quality of the translation of each item in terms of 3 factors: clarity of translation (use of simple and understandable words), use of a common language (no use of technical, specialized, and artificial words), and conceptual identity (equivalency of the translated content with the original version) on a 5-point Likert scale for each factor. The researchers checked the results of the translation quality scores and discussed them with the translators. If necessary, the translation was modified and a Persian version with good translation quality (score above 3 for all items) was obtained from the forward translation.

For the backward translation stage, the resulting Persian version was given to two native English and Persian fluent translators (translators 5 and 6) and the Persian version was translated into English. The conceptual similarity of the translated with the original English version of the questionnaire was compared by researchers and translators 3 and 4. Items that were not conceptually identical were discussed and some Persian translations were corrected. Finally, a primary Persian version was obtained, and in the next step, its validity, factor structure (exploratory and confirmatory) and reliability were checked.

Cultural adaptation

According to the general purpose of the questionnaire (investigating the attitude of therapists towards evidence-based practice) and the relationship of each item with the related subscale, the panel of 29

experts scored the importance and necessity of each item in a three-option scale (important and relevant, it can be used but it is not necessary, unrelated).

The Content Validity Ratio (CVR) shows the agreement of the expert panel about the necessity of the items. According to Lawshe's criteria, CVR was calculated for each item based on the following formula [21]:

$$CVR = \frac{\left(n_e - \frac{N}{2}\right)}{\frac{N}{2}}$$

In this formula, N is the total number of members of the expert panel and n_e is the number of panel members who scored the item as "important and relevant". The accepted amount of CVR for approval or rejection of the item depends on the number of panel members.

Face validity

The 43 participants (including experts and clinical colleagues) rated the questions according to two criteria: fluency (clarification and comprehensibility) and appropriateness with the culture of the Iranian society on a 6-point Likert scale. Also, the item's impact score was calculated by grading item importance on a 5-point Likert scaling with this formula: frequency * importance.

Factor structure analysis

According to people's preferences for the web or offline version of the questionnaire, two questionnaires including Persian EBPAS with 35 questions (EBPAS P-35) (removal of question 10 due to low CVR with the double survey as described in the results) and one questionnaire containing demographic and professional information of people were provided to 182 audiologists.

Reliability

In order to check whether the results differ over time, 30 out of the 182 participants were asked to complete the attitude questionnaire again after two weeks.

Statistical analysis

SPSS statistical software version 17 and AMOS statistical software version 24 were used for the analyses.

A p-value of 0.05 or less was considered statistically significant. The descriptive statistics (means and standard deviations) for the EBPAS P-35 subscales and the total score and demographic information of participants (age, sex, academic level, job experience, work system) were examined. In order to investigate reliability, Cronbach's alpha was utilized for internal consistency and Intra-Class Correlation (ICC) was employed to check test-retest correlation in all items. A two-way random effect model was utilized for ICC in this study. The relationship between the test-retest score of each item was examined with Pearson's correlation coefficient. Also, Spearman's correlation was used to study the relationship between the subscales with each other and with the total score. The overall score of the questionnaire was compared by an independent t-test in two groups of men and women. Also, to investigate the effect of the academic level and the working type (private or governmental) on the results of the questionnaire, analysis of variance (ANOVA) was used. The effect of the age of the participants and the years of experience on the overall score was investigated by using a regression model.

Construct validity was examined with CFA. The goodness of fit indices of CMIN/DF (Chi-degree freedom), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Relative Fit Index (RFI) and Root Mean Square Error of Approximation (RMSEA) were reported for the CFA. CFA investigations were performed in AMOS software.

Results

Translation

According to the International Quality of Life Assessment (IQOLA) protocol, translators 1 and 2 had to rate the level of difficulty when translating each question with a 3-point Likert scale. If the average score for each item was above 2, it was considered a difficult translation. All items scored less than 2 on average, except for 3 questions (number 7, 10, and 20) that achieved 3 and were defined as difficult to translate. Translators 3 and 4 scored the quality of the translation; each item was rated in terms of 3 factors on a 5-point Likert scale. If the translated item was unacceptable (average score less than 3, for the three considered factors), they would suggest an alternative equivalent. All items obtained average scores of above 3.

Cultural adaptation

The minimum acceptable CVR in the present study was 0.33 based on the number of experts [21]. The cultural adaptation investigated by calculating CVR and CVI showed that question numbers 10, 14, 17, 18, 28, and 29 had CVR less than 0.33. After applying the experts' recommendations, corrections were made to the above-mentioned questions by the research team, and then they were given to the experts for re-scoring. Eventually, all the items that held a CVR higher than the minimum acceptable level (0.33) were kept with the agreement of the researchers. Only in item 10, a CVR of 0.24 was obtained even in the second survey from experts, which led to the removal of this question from the Persian questionnaire. Thus, the Persian version of EBPAS included 35 questions (EBPAS P-35). The CVI for the whole questionnaire was calculated and the value between 0.70 and 1.00 demonstrated satisfactory results [22].

Face validity

In the survey of experts and the target population concerning the clarity of the questions and the fitness with the culture of the society, all items got an average score of higher than 4. An average score of above 4 for each factor was considered the minimum acceptable level. In calculating the impact score for each item, scores greater than 1.5 were considered appropriate and the item was maintained [23]. As can be seen in Table 4, all of the items had impact scores greater than 1.5.

The factor structure

The demographic characteristics of the people participating in this part of the study can be seen in Table 1. The average age of the participants was 34.83 years (SD=9.12) and the average working experience was 10.43 years (SD=8.33).

The results of Spearman's correlation analysis between the scores of the subscales with each other and the subscales with the total score are shown in Table 2. Based on the results obtained, the highest correlation with an intensity of 0.66 was between Fit and Appeal. The next rank is related to Burden and Divergence, which has a positive relationship with an intensity of

Table 1. The demographic characteristics of the participants (n=182)

Factor	Group	N(%)
Gender	Female	123(67.60)
	Male	59(32.40)
Academic level	Graduate	136(74.71)
	MSc.	37(20.41)
	PhD.	9(4.88)
Work type*	Private	89(48.92)
	Public	22(12.13)
	Both	71(38.95)
Work system	Independent (alone)	118(64.82)
	Employer (with colleges)	25(13.71)
	Employee (with colleges)	39(21.47)
Field of activity*	Assessment and diagnosis	46(25.21)
	Balance and vertigo	40(22.00)
	Hearing aid fitting	157(86.33)
	Tinnitus management	47(25.84)
	Auditory rehabilitation	47(25.88)

* Participants could choose more than one option

0.60. Among the negative relationships, Burden with Fit with –0.45 and Feedback with Burden with –0.44 have the highest intensity. Also, a significant relationship was observed between the total score and all subscales (p<0.01).

The measurement results of the first-order CFA are shown in Figure 1. The fit indices of the model after modification maintained values include CMIN/DF=1.39, GFI=0.84, CFI=0.94, IFI=0.94, and RMSEA=0.04, all were higher than the acceptable value [24]. After modifying the model and its fit indices based on the factor loadings, questions 35 and 23 had a low coefficient based on the respective factor. But in the rest of the questions, this intensity was appropriate and acceptable and was significant (p<0.05).

The results of the independent t-test to investigate the effect of gender on the total score showed that there was no significant difference between the attitudes of

Table 2. Spearman's correlation of subscales with each other and with the total score of the evidence-based practice attitudes scales 35-Persian

Factors	1	2	3	4	5	6	7	8	9	10	11	12	13
13. EBPAS P-35 total	0.33**	0.66**	0.56**	−0.63**	−0.52**	0.64**	−0.53**	−0.30**	−0.73**	0.41**	0.42**	0.64**	-
12. Feed back	0.18	0.25**	0.27**	−0.35**	−0.16*	0.28**	−0.37**	−0.09	−0.44**	0.41**	0.32**	-	
11. Organizational support	0.11	0.21**	0.18*	−0.06	−0.06	0.22**	−0.02	0.02	−0.14	0.41**	-		
10. Job security	0.12	0.16*	0.14	−0.06	0.02	0.17*	−0.08	0.10	−0.10	-			
9. Burden	−0.13	−0.40**	−0.30**	0.60**	0.44**	−0.45**	0.40**	0.23**	-				
8. Balance	0.01	0.01	0.05	0.29**	0.19**	0.09	0.36**	-					
7. Monitoring	−0.05	−0.15*	−0.13	0.27**	0.22**	−0.14**	-						
6. Fit	0.38**	0.66**	0.38**	−0.31**	−0.32**	-							
5. Limitation	0.04	−0.36**	−0.22**	0.43**	-								
4. Divergence	0.01	−0.28**	−0.27**	-									
3. Openness	0.16*	0.49**	-										
2. Appeal	0.43**	-											
1. Requirements	-												

N=182. EBPAS P-35; the evidence-based practice attitudes scales 35-Persian
* p<0.05, ** p<0.01

Table 3. The effect of gender, academic level, and work type on the total score (n=182)

Factor (test)	Group(N)	Mean of the total score(SD)	p
Gender (t-test)	Female(123)	2.36(0.47)	0.342
	Male(59)	2.43(0.43)	
Academic level (ANOVA)	Graduate(136)	2.36(0.46)	0.511
	MSc(37)	2.45(0.47)	
	PhD(9)	2.45(0.39)	
Work type (ANOVA)	Private(89)	2.35(0.47)	0.603
	Governmental(22)	2.42(0.46)	
	Both(71)	2.41(0.45)	

women and men (t=–0.87, p=0.34). Also, the analysis of variance conducted to investigate the effect of the academic level and the work type showed that the level of education and the type of activity showed no significant effect on the overall score of the questionnaire (F=0.66, p=0.51 and F=0.51, p=0.60, respectively) (Table 3).

The results of the regression model analysis to investigate the effect of participants' age and years of clinical activity on the results of the score are shown in Figure 2. None of these two variables had a significant effect on people's attitudes (p=0.83 and p=0.84, respectively).

Reliability

The mean and standard deviation of the subscales and the total score of the questionnaire are shown in Table 4. Cronbach's alpha coefficient of all subscales ranged from 0.70 to 0.85 which demonstrated acceptable reliability. As the Pearson's correlation coefficients between the test and retest score of each item showed (Table 4), most of the questions showed a positive, significant, and good correlation in the repetition of the test after two weeks (p<0.05). Only questions 1 and 6 did not show a significant relationship (p>0.05).

Table 4. Mean and standard deviation of subscales and total score, Cronbach's alpha coefficient and intra-class correlation information

Subscales/total	Item number	Mean	SD	Cronbach's alpha	Impact score	Pearson correlation	ICC (test-retest)
Requirements	8	1.98	1	0.81	2.91	0.67**	0.84
	9	1.98	0.98		3.15	0.75**	0.88
Appeal	7	2.08	1.09	0.74	3.60	0.73**	0.83
	10	2.76	0.95		3.83	0.76**	0.89
	11	3.06	0.82		4.14	0.48*	0.74
Openness	2	2.51	1.10	0.84	2.93	0.28*	0.50
	3	2.63	1.03		3.28	0.39*	0.59
	1	2.73	1.14		3.31	0.14	0.24
Divergence	4	1.18	1.07	0.75	2	0.42*	0.64
	6	1.19	1.16		1.85	0.11	0.41
	5	2.13	1.03		3	0.63**	0.77
Limitation	15	1.80	0.95	0.65	2.39	0.45*	0.58
	16	1.95	1.15		2.23	0.52**	0.69
	17	1.86	0.92		2.11	0.50**	0.65
Fit	12	3.21	0.95	0.73	4.37	0.33*	0.43
	13	2.69	0.99		2.74	0.77**	0.85
	14	2.98	0.96		4.25	0.52**	0.79
Monitoring	18	1.84	1.29	0.76	2.82	0.58**	0.77
	19	2.53	1.27		3.25	0.76**	0.85
	20	1.55	1.21		3.13	0.57**	0.66
Balance	21	2.46	1.18	0.70	2.72	0.67**	0.80
	22	3.12	0.97		3.97	0.64**	0.76
	23	2.55	0.95		3.46	0.63**	0.76
Burden	24	0.86	1.08	0.75	2.54	0.54**	0.73
	25	0.85	1.09		1.96	0.61**	0.77
	26	1.74	1.06		2.37	0.41**	0.69
Job security	27	2.02	1.12	0.85	3.18	0.48**	0.66
	28	1.81	1.06		2.94	0.68**	0.79
	29	1.96	1.02		2.84	0.77**	0.84
Organizational support	30	2.12	1.08	0.71	3.28	0.55**	0.80
	31	2.75	0.94		3.99	0.43**	**0.56**
	32	2.58	1.04		3.26	0.38**	**0.63**
Feed back	33	3.13	0.94	0.66	4.34	0.52**	**0.69**
	34	3.26	0.88		4.52	0.55**	**0.66**
	35	2.21	1.19		3.23	0.69**	**0.83**
EBPAS P-35 (Total)	---	2.38	0.46	0.88	---	---	**0.65**

ICC; intra-class correlation, EBPAS P-35; the evidence-based practice attitudes scales 35-Persian
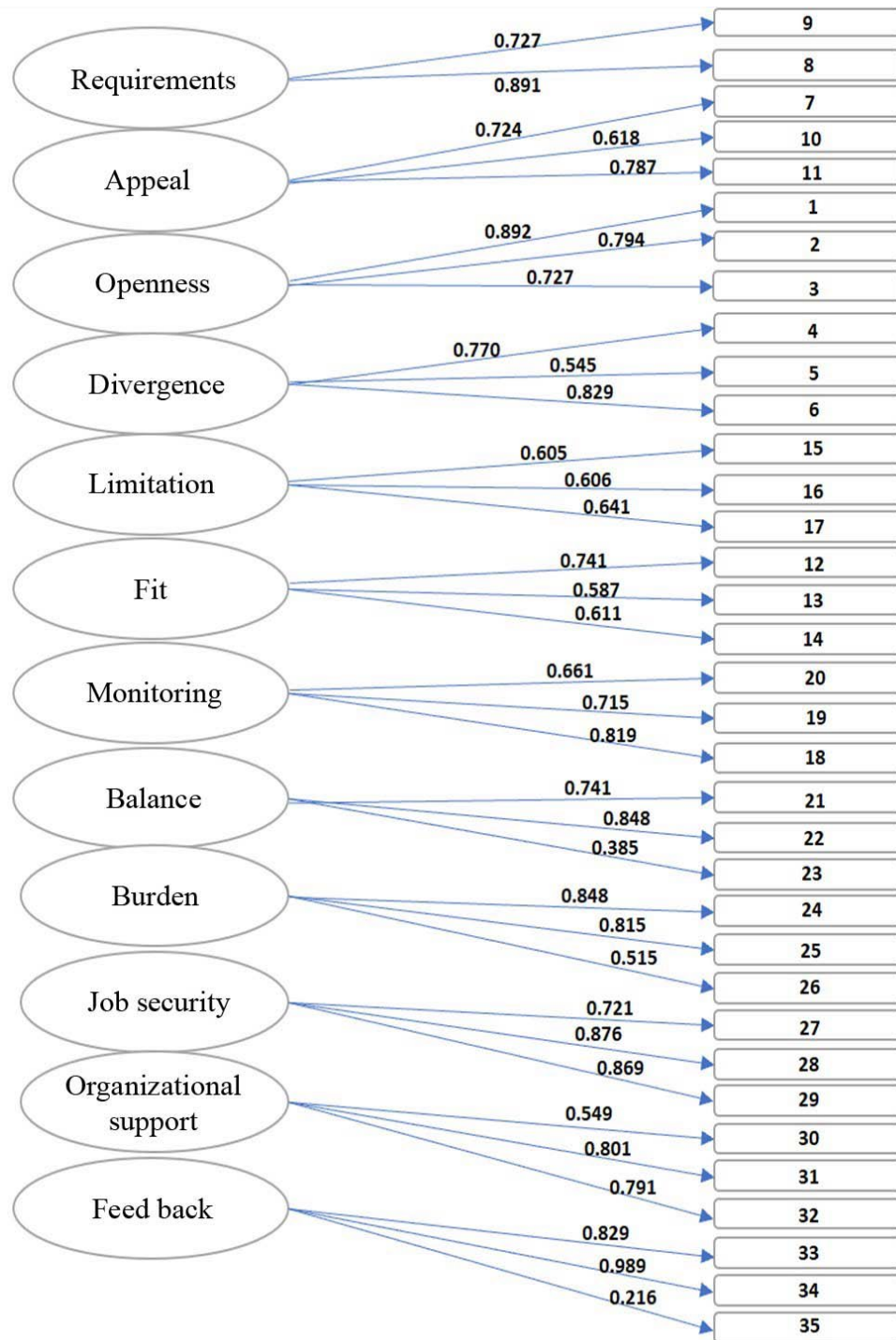** Significant level less than 0.01, * Significant level less than 0.05

Figure 1. First-order original 12-factor structure derived by confirmatory factor analysis

The strongest correlation was observed in questions 9, 7, 10, 13, 19 and 29 (r>0.7). Similarly, the ICC values of these questions were in the very good category. The ICC showed that there was good agreement in the score of each item in the test-retest, except items 1, 6 and 13 according to the classification of ICC values (ICC<0.20, poor; 0.21–0.40, fair; 0.41–0.60, moderate; 0.61–0.80, good; 0.81–1.00, very good) [25].

Discussion

In this study, the psychometric properties (cultural adaptation, face validity, factor structure, and reliability) of the Persian version of the EBPAS-36 (EBPAS P-35) were investigated in a sample of 182 working audiologists. The results showed that EBPAS P-35 maintains the main factor structure and good internal
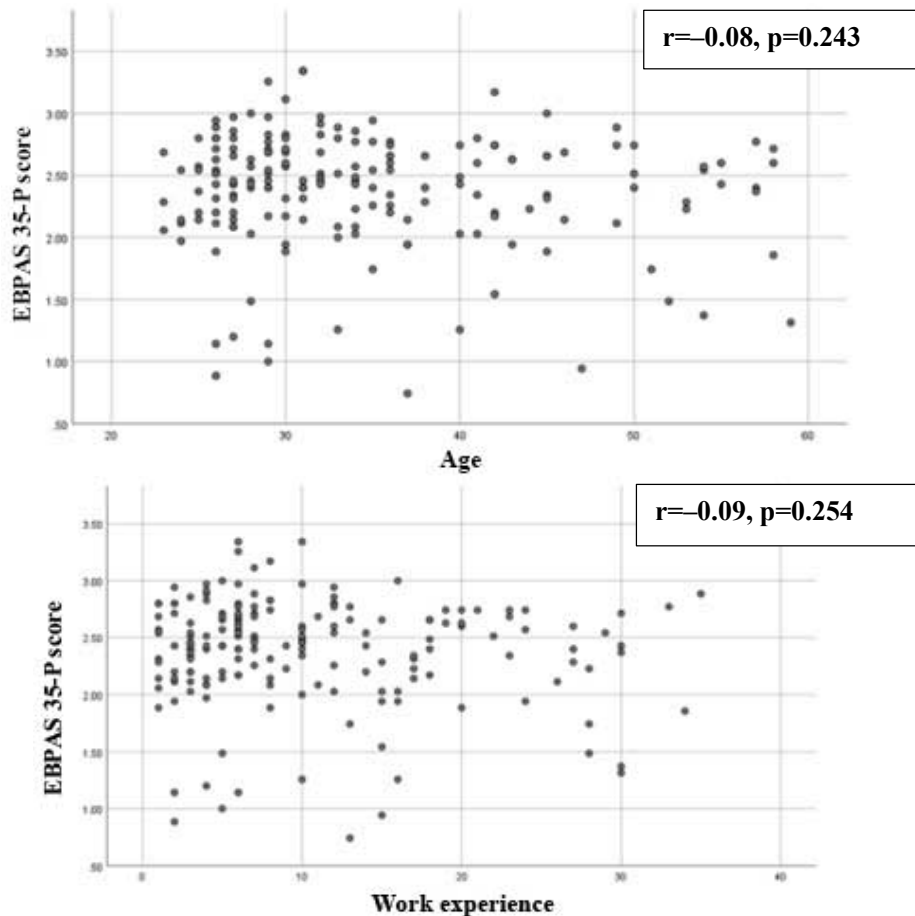
Figure 2. Association between the evidence base practice attitude scale persian-35 total score and age (upper box) and years of work experience (lower box). EBPAS P-35; the evidence-based practice attitudes scales 35-Persian

consistency and reliability. The results of this study provide evidence that EBPAS P-35 is applicable in the community of Persian-speaking audiologists.

The average total score of the EBPAS P-35 was 2.38 (SD of 0.46), which is consistent with the score of the original questionnaire and the translated versions into other languages [11, 12, 15, 20]. In the Persian translation, question 10 ("it was required by your state?") reached a CVR lower than the acceptable level despite polling the experts twice. It was also considered difficult to translate by translators 1 and 2. This question was not culturally appropriate to Iranian society because there are no states in Iran, therefore with the opinion of the experts and the agreement of the research group, it was removed from the Persian version and the final questionnaire consisted of 35 questions. The total score showed a significant direct or inverse relationship in the moderate range with all subscales and also subscales with each other. The highest positive correlation of the overall score was seen with the appeal, fit, feedback,

and openness subscales, which is in line with previous studies [13, 14]. This finding means that, if the EBP is a method that people find intuitively attractive and colleagues express satisfaction with it, or that method is consistent with own and the client's needs and values, either they receive feedback when providing services or are willing to try new interventions, there will be a positive attitude toward that method. The high inverse significant correlation between the total score and the burden and divergence subscales shows that the more laborious it is to learn EBP in terms of time and administration, or if people believe that this method is not clinically useful and less important than the clinical experience, then there will be a more negative attitude towards that method. This finding is consistent with the results of the German version of EBPAS [13]. However, in the Dutch version of the questionnaire, no significant relationship was found between the total score and the divergence subscale [14]. In terms of the relationship between the subscales with each other, the fit and appeal, and divergence and burden subscales showed a

positive and high relationship and the fit and burden, and burden and feedback subscales showed a negative and moderate correlation with each other.

The results of first-order CFA and the index values confirm that there is a good model fit between this questionnaire and the original version of 36 questions. Since nearly all the subscales are above the cut-off values, the 12-factor structure of the original version is preserved. Analyzing high-order CFA helps to fit the model better, but it was not done due to the small number of samples in this study.

No significant relationship was found between the attitude score and characteristics of age, gender, practicing years, and education level. In other words, these characteristics cannot predict people's attitudes toward EBP. The finding that men and women do not differ from each other in their attitudes is consistent with the results of the original EBPAS [11], although gender differences were seen in the Dutch version of the questionnaire [14]. Regarding the effect of education level, the average score of participants with a postgraduate degree (MSc. and PhD.) was higher than graduates. Although the difference was not statistically significant, it can be declared that people with higher education levels have a more positive attitude toward EBP. The number of participants based on their academic level was not equal in this study, there could be a significant difference in the results if it was equivalent. There are contraindicating findings about the effect of demographic characteristics on people's attitudes toward evidence-based practice. In some studies, younger people, or with higher education, have more positive attitudes than older people, or with lower academic education [16, 18, 26]. A possible reason is that younger/more educated individuals were more familiar with EBP due to more exposure to evidence-based interventions during education. They may also have received more training due to the great attention and focus given to the concept of evidence-based practice in recent years. Some studies revealed that people with more work experience show a more negative attitude to EBP and rely more on their previous experience in clinical decision-making [15, 27]. However, some others indicated that experienced people follow the guidelines better [28]. There is a difference between the results of the current study and studies that have shown the effect of demographic factors on attitude. The reason is the participants of this study, regardless of their personal

and professional characteristics, rely on their previous experience with the success of a practice. Because when asked how they would accept new methods, most people believed in using their prior experience among other options of college recommendation, supervisor obligation, textbook and evidence recommendation, and personal prior experience. This finding is supported by some previous evidence that in many health professionals, the behavior of searching for information shows the priority of referring to oral sources or the opinion of a colleague over reading written sources [29-31]. Also, most of those studies that demonstrated some effects on attitude were conducted on health professionals other than audiologists. Different results may be obtained in different professional samples that work in organizations with different climates and cultures. For example, recent evidence shows that audiology is a field that relies on product sales [32], and financial and business issues can influence the implementation of evidence-based methods [4, 6]. In order to investigate the exact effect of individual, professional, and organizational characteristics of people on the total attitude score and its subscales, further study is needed in a larger sample size. The attitude towards EBP and its clinical application requires a balance between identification and access to reliable and updated evidence, its applicability according to the client's preferences and needs, and the organizational system of the workplace. Implementing such decisions in complex clinical scenarios is not an easy task.

In examining the reliability of the EBPAS P-35 over time using the ICC, all items of the questionnaire except questions 1 and 6 showed good test-retest reliability; no change in the results after two weeks. This finding is supported by Pearson's correlation coefficients examining the test and retest score correlation of each item. Regarding questions 1 and 6, people scored lower on the first test than on the retest. This shows that in the retest, people have become more familiar with the purpose of the questionnaire. Also, questions 1 and 6 are two different forms of the same question, which are asked in positive form in question 1 and in negative form in question 6. It is possible that during the test-retest, people have different perceptions of these two questions. However, low values of ICC for these two questions were also reported in previous studies [12]. The value of Cronbach's alpha for the total score was 0.88, which is consistent with Aarons in the original questionnaire and Spanish version [11, 16] The subscales also had an

alpha value higher than 0.7, which is in the range of acceptable to good. Only the limitation and feedback subscales showed values of 0.65 and 0.66, respectively. In other studies, the alpha values for certain subscales (appeal, divergence, monitoring, and balance) were less than 0.7 [17, 26]. In general, it can be concluded that the EBPAS P-35 and its subscales have high internal consistencies.

Conclusion

The Evidence-Based Practice Attitude Scale-36 (EBPAS-36) is a valid and reliable tool that evaluates the intention of health service providers toward evidence-based practice. The Persian version of EBPAS-36 (EBPAS P-35) maintains the main factor structure and has good internal consistency and reliability which can be used in the community of Persian-speaking audiologists.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the research ethics committees of Iran University of Medical Sciences (approval ID: IR.IUMS.REC.1400.1139) on 23th of February, 2022. The participants received written and oral information about the study, and consented to participate by filling out the questionnaire.

Authors' contributions

SS: Acquisition of data, interpretation of the results, drafting the manuscript; MS: Performing the literature search, acquisition of data, interpretation of the results; SJ: Statistical analysis, interpretation of the results, critically revising the work; AP: Conceptualizing and giving idea of article, study design, critically revising the work; FJ: Conceptualizing and giving idea of article, study design, interpretation of the results; AA: Conceptualizing and giving idea of article, study design; MKB: Performing the literature search, acquisition of data.

Conflict of interest

The authors have no relevant financial or non-financial interests to disclose.

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