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Translation, cross-cultural adaptation, and validation of the Spanish Evidence-Based Practice Confidence (EPIC) scale in occupational therapy students and professionals

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Abstract

Background Assessing self-efficacy in evidence-based practice (EBP) is crucial for identifying training needs, evaluating the effectiveness of educational programs, and assessing the overall application confidence of EBP in healthcare professions, including occupational therapy (OT). Thus, the objectives of this study were to cross-culturally adapt the Evidence-Based Practice Confidence Scale (EPIC) for Spanish-speaking OT students and professionals and to evaluate its internal consistency, test–retest reliability, and construct validity.

Methods A professional translation and cross-cultural adaptation of the EPIC was developed, including a pilot study that resulted in the EPIC Spanish version. A total of 260 OT students and 202 professionals completed the Spanish EPIC at baseline, with 177 (68.1%) students and 129 (63.9%) professionals participating in the test–retest reliability assessment two weeks later. The EPIC's internal consistency was evaluated using Cronbach's alpha. Test–retest reliability was assessed using Spearman's correlations and intra-class correlations (ICC). Known-groups validity hypothesis based on participants' roles (students, diploma/bachelor's, master's, and doctorate) was explored using ANOVA. Finally, an exploratory factor analysis with oblique Promax rotation was conducted to examine the EPIC factor structure.

Results Cronbach's alpha for the total EPIC score was excellent in both OT professionals ($\alpha = 0.91$) and students ($\alpha = 0.90$). For OT students, Spearman's correlation was 0.67 ($p < 0.001$) for the total score, and the ICC was 0.66 (95%CI 0.57–0.73). Conversely, for OT professionals, test–retest reliability showed a Spearman's correlation of 0.87 ($p < 0.001$) for the total score, and the ICC was 0.87 (95%CI 0.81–0.90). The highest scores were observed in professionals with a doctorate followed by those with a master's degree ($p < 0.001$). The exploratory factor analysis yielded a 3-factor solution that explained 71% of the observed variance, with item-level loadings ≥ 0.35.

Conclusions The EPIC scale showed excellent internal consistency, strong test–retest reliability, and adequate construct validity for evaluating EBP self-efficacy among Spanish-speaking OT professionals using the total score. However, test–retest reliability was moderate among Spanish-speaking OT students, indicating that changes in EBP confidence assessed with the EPIC scale in this group should be interpreted with caution.

Keywords Spain, Practitioners, Undergraduate, Self-efficacy, Psychometric properties

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Background

Evidence-based practice (EBP) in healthcare is an approach to clinical decision-making that integrates individual clinical expertise with the best available research evidence, along with the client's preferences, values and context [1]. The primary objective of EBP is to achieve optimal outcomes in care delivery by empowering professionals, such as occupational therapists, to make better-informed clinical decisions [2]. Although there is a growing interest in applying EBP in occupational therapy (OT), its adoption could be challenging due to several barriers identified in the literature [3, 4].

EBP barriers are related to both the abilities of OT professionals and the context in which healthcare is provided [5]. Firstly, healthcare professionals may hesitate to implement EBP due to a lack of confidence in their scientific skills. Common challenges include difficulties in critically appraising scientific literature, applying evidence into practice, and searching for adequate research [3, 5–11]. Consequently, many professionals currently rely on their own experience, leaving aside the most updated evidence [3, 7, 8, 11]. Secondly and regarding the clinical context, several barriers are related to the work environment and available resources, such as work overload, time limitations, limited scientific evidence in certain disciplines, and accessibility restrictions to scientific literature [5, 12, 13]. However, EBP heavily depends on the scientific skills of individual healthcare professionals [14].

Training in individual EBP skills is now considered a core component of OT educational programs [15–17]. Given that practicing professionals need to maintain current with the literature, recent studies have emerged to evaluate and improve EBP skills among this group [6, 18]. However, it is essential to have and employ adapted and validated assessment tools for evaluating EBP [19]. These tools are crucial to accurately measure the initial EBP skills confidence of students and professionals and to assess the effectiveness of educational programs [19, 20].

Among the EBP assessment tools, the Evidence-Based Practice Confidence Scale (EPIC), designed by Nancy M Salbach in Canada stands out for its focus on assessing a person's self-perceived confidence in performing EBP [21]. This scale evaluates confidence in practising EBP based on several models such as the five-step process established by David Sackett: 1) Formulate a question from the need for specific clinical information, 2) Find the best evidence to answer the question, 3) Critically appraise the validity and usefulness of the evidence, 4) Integrate the appraised evidence into clinical practice, and 5) Evaluate the process and outcomes derived from clinical performance [14]. The original version of this scale has been validated for use by occupational therapists and physical therapists [21–23]. It has also been translated into German for occupational therapists [24]. However, the EPIC scale has not yet been translated or adapted for use by Spanish-speaking OT students and professionals. In fact, no other validated and cross-culturally adapted assessment tool is available to evaluate EBP confidence specifically among occupational therapy students and professionals.

Cross-culturally adapted and validated self-efficacy EBP assessment tools are crucial in education research at both higher education and professional levels. Therefore, the objectives of this study were to cross-culturally adapt the EPIC scale for Spanish-speaking OT students and professionals and to evaluate its internal consistency, test–retest reliability, and construct validity. Specifically, to determine whether the construct validity aligns with the theoretical framework EBP.

Methods

Study design

A descriptive, observational, and metric study was conducted in two phases. First, a translation and cross-cultural adaptation of the EPIC was developed based on previous guidelines [25], which included a pilot study that resulted in the final EPIC Spanish version. In the second phase, using this final version, we studied its psychometric properties on a different sample of OT students and professionals.

Participants

An expert committee was formed, consisting of six OT and two methodologists, all of whom had extensive experience in adapting and validating assessment tools. Each member had training and expertise in EBP. The pilot study was conducted between February and March 2022 using a convenience sample that was intended to represent the OT community. For this reason, the sample included last-year OT students ($n=4$), OT master's students ($n=3$) and OT professionals ($n=4$). Participants were selected based on the following inclusion criteria: 1) residence in Spain; and 2) being a 3- or 4-year OT student, master student, or professional.

Regarding the assessment of the EPIC's psychometric properties, OT students and professionals were recruited by convenience between January and March 2024 through social networks (Twitter, Instagram and LinkedIn) and face-to-face talks during university lecturers. In addition, we contacted different OT associations via email and social networks to request their collaboration in disseminating the recruitment campaign. The inclusion criteria were: 1) residence in Spain; and 2) being an OT student, master student or professional. After 2 weeks, participants were contacted again to participate in the test–retest reliability assessment. A total

of 260 OT students and 202 professionals completed the baseline evaluation. Of these, 177 (68.1%) students and 129 (63.9%) professionals participating in the test–retest reliability assessment.

Sociodemographic data

Several sociodemographic information was collected during baseline assessments. Particularly, OT professionals were asked about their age, sex, the year they completed their OT degree, and their highest academic degree. Additionally, we asked for their current employment status, whether they had received research training in the last year, and if they had published a scientific paper. Regarding students, we asked about their age, sex, and whether they had received research training in the last year.

The evidence-based practice confidence scale

The EPIC was originally developed by Nancy M. Salbach and Susan B. Jaglal in 2010 to assess EBP self-efficacy among healthcare professionals [21]. The EPIC comprises 11 self-reported items that describe the different parts of the EBP process, such as formulating a question to guide a literature search, critically appraise measurement properties, and interpret linear or logistic regressions (Cronbach's alpha = 0.89). Participants rate their ability in each item on an 11-point scale ranging from 0% (no confidence) to 100% (completely confident). The responses are averaged to obtain a summary score, which can range from 0 to 100%.

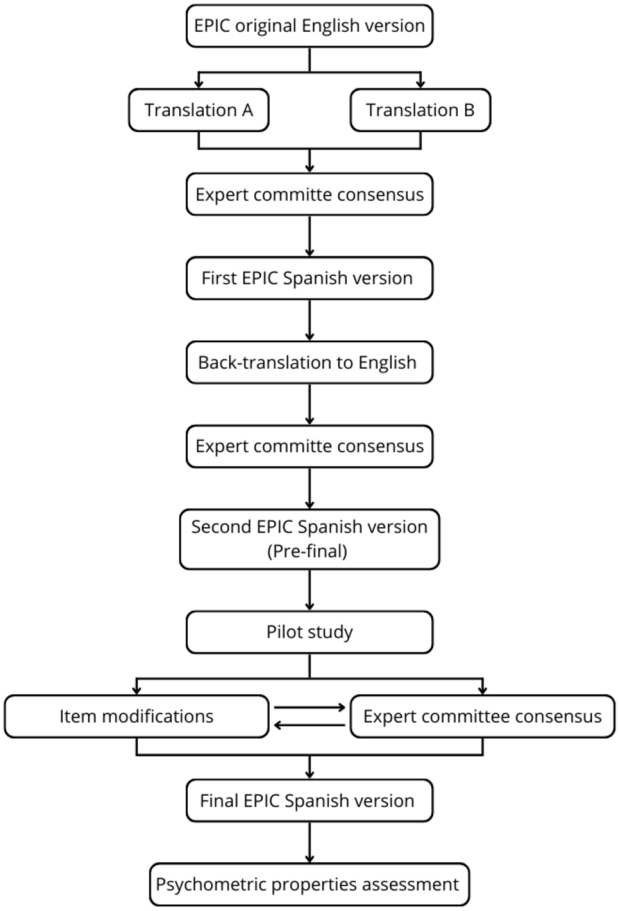

Fig. 1 Flowchart of the cross-cultural adaptation process for the Evidence-Based Practice Confidence Scale (EPIC) into Spanish

Procedure

Information for both the pilot and the psychometric properties studies was collected via a Microsoft Forms survey. The surveys were developed following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) that included an informed consent section [26].

Phase 1: Translation, cross-cultural adaptation and pilot study

The translation and cross-cultural adaptation process began after we obtained permission from the original authors of the EPIC. A summary of this process can be observed in Fig. 1. Firstly, two independent bilingual Spanish professional translators conducted forward translations of the original EPIC version. Secondly, an expert committee comprising six occupational therapists and two methodologists, all of them with expertise in scale adaptation/validation and EBP, was formed. The two abovementioned translations were evaluated by the committee for semantic and cultural appropriateness, ensuring that the original meaning of the EPIC was maintained. The first version of the Spanish EPIC was obtained after the necessary idiomatic changes. Thirdly, a professional translator who was unaware of the original EPIC version and had not participated in the forward translations, developed a backward translation of the first Spanish EPIC into English. The expert committee compared the backward translation with the original scale, and, after discussion, the pre-final Spanish EPIC was approved.

Finally, a pilot study using the pre-final version was conducted with 11 participants recruited by convenience, including OT students, OT professionals who were actively working, and OT professionals who were studying for a master's degree. Following the EPIC fulfilment via Google Forms, participants were openly asked for possible comprehension issues, difficulties, or ease of use when completing the scale, as well as for their modification/improvement suggestions. All participant's feedback was reviewed by the committee. After a discussion, some suggestions were incorporated, and the final EPIC Spanish version was approved (see Additional file 1). This final

version was tested on a sample of OT students and professionals to evaluate its psychometric properties.

Phase 2: Psychometric Testing

Statistical analyses for assessing the EPIC psychometric properties were conducted using R software version 4.2.2. (R Foundation for Statistical Computing, Vienna, Austria; www.R-project.org). All statistical tests were bilateral, with the significance level set at 0.05. Firstly, the sociodemographic characteristics were described using frequencies and percentages for categorical variables and mean with standard deviation or median with interquartile ranges for quantitative variables, depending on their distribution. The distribution of the quantitative variables was assessed by applying the Lilliefors-corrected Kolmogorov–Smirnov test. This description was conducted in both baseline and retest samples.

Secondly, in terms of reliability, baseline data was used to explore the EPIC's internal consistency using Cronbach's alpha, with a value of ≥ 0.8 considered excellent [27]. In addition, test–retest reliability was evaluated using Spearman's correlations to examine relationship, while two-way random effects intra-class correlations (ICC) assessed absolute agreement. A Spearman's correlation between 0.4 and 0.69 was considered moderate, and ≥ 0.7 was interpreted as strong [28]. ICC values of ≤ 0.4 were considered poor, 0.4 to 0.74 adequate, and ICC ≥ 0.75 excellent [29]. All reliability analyses were conducted separately for OT professionals and students for both the total EPIC score and each individual item.

Thirdly, we evaluated the known-groups validity hypothesis based on participants' roles (students, diploma/bachelor's, master's, and doctorate) using ANOVA due to the EPIC total score distribution [22]. Finally, after verifying the Kaiser–Meyer–Olkin measure of sampling adequacy and conducting Bartlett's sphericity test, an exploratory factor analysis with oblique Promax rotation was conducted to examine the factor structure of the EPIC scale. Partial regression coefficients and the explained proportion of variation were calculated using baseline data. The internal consistency of the identified factors was assessed using Cronbach's alpha, as abovementioned.

Results

Translation and cross-cultural adaptation

The translation and back-translation processes did not reveal significant changes from the original EPIC version. However, minor cultural adaptations were implemented to some items and instructions to improve clarity in Spanish. All relevant modifications are detailed in Additional file 1.

Characteristics of the study population

The characteristics of the analysed OT professionals and students at baseline and retest are presented in Table 1. At baseline, OT professionals' ($n=202$) median (IQR) age was 31.0 (25.3–39.8) years. The majority were females (90.1%), with most completing their OT studies in 2018 (median, IQR: 2009–2022). At retest, the professionals' characteristics ($n=129$) were comparable to baseline. Nevertheless, it could be observed a slightly number of participants with a master's or doctorate and with one scientific publication. In addition, 76.7% of OT

Table 1 Characteristics of the analyzed occupational therapy professionals and students at baseline and retest

OT Professionals	**Baseline ($n=202$)**	**Retest ($n=129$)**
Age, years, median (IQR)	31.0 (25.3–39.8)	30.0 (25.0–38.0)
Sex, female, n (%)	182 (90.1)	111 (86.04)
OT degree, year, median (IQR)	2018 (2009–2022)	2019 (2010–2022)
Highest academic studies, n (%)		
Diploma or bachelor's	74 (36.6)	33 (25.5)
Master	95 (47.0)	70 (54.3)
Doctorate[a]	33 (16.4)	26 (20.2)
Actively employed, yes, n (%)	155 (76.7)	88 (68.2)
Research training in the last year, no, n (%)	115 (56.9)	70 (54.3)
Scientific paper published, yes, n (%)	59 (29.2)	48 (37.2)
OT Students	**Baseline ($n=260$)**	**Retest ($n=177$)**
Age, years, median (IQR)	21.0 (20.0–23.0)	21.0 (20.0–23.0)
Sex, female, n (%)	229 (88.1)	160 (90.4)
Research training in the last year, no, n (%)	216 (83.1)	153 (86.4)

Abbreviations: *OT* Occupational Therapy, *IQR* Interquartile range

[a] Finalized or ongoing

professionals were actively employed at baseline vs 68.2% at retest. For OT students, their median age at baseline ($n=260$) was 21.0 (20.0–23.0) years. The vast majority were females (88.1%) and 83.1% did not receive research training in the last year. The retest characteristics of the students were similar to those at baseline (Table 1).

Internal consistency and test–retest reliability

The reliability results for the Spanish EPIC are shown in Table 2. The Cronbach's alpha for the total score was excellent in both OT professionals ($\alpha=0.91$) and students ($\alpha=0.90$). Regarding OT professionals' test–retest reliability, Spearman's correlation was 0.87 (p-value < 0.001) for the total score, with item-level correlations ranging from 0.61 to 0.84 (all p-values < 0.001). Additionally, the ICC was 0.87 (95%CI 0.81–0.90) for the total score and ranged from 0.62 to 0.83 for item-level scores. Conversely, for OT students, Spearman's correlation was 0.67 (p-value < 0.001) for the total score, with item-level correlations ranging from 0.43 to 0.62 (all p-values < 0.001). The ICC was 0.66 (95%CI 0.57–0.73) and ranged from 0.40 to 0.61 for item-level scores.

Construct validity

Hypothesis testing for known-groups validity is presented in Table 3. OT students ($n=260$) and professionals with only a diploma or bachelor's degree ($n=74$) showed similar EPIC total scores. However, the highest scores were observed in professionals with a doctorate ($n=33$) followed by those with a master's degree ($n=95$), with a significant difference between the groups (ANOVA p-value < 0.001).

The exploratory factor analysis with Promax rotation yielded a 3-factor solution that explained 71% of the observed variance, with item-level loadings ≥ 0.35 (Table 4). The first factor (eigenvalue = 3.16) included 5

Table 2 Scoring, internal consistency, and reliability measurements of the Spanish Evidence-Based Practice Confidence Scale among occupational therapy professionals and students

Item	Baseline Score[a]	Retest Score[a,b]	Cronbach's Alpha	Spearman's Rho[b]	*p-value*	ICC[b]	95%CI	*p-value*
OT Professionals ($n=202$)								
1	80.0 (70.0–88.0)	80.0 (70.0–90.0)	0.91	0.70	< 0.001	0.60	(0.46–0.70)	< 0.001
2	70.0 (60.0–80.0)	70.0 (60.0–80.0)	0.90	0.78	< 0.001	0.77	(0.69–0.83)	< 0.001
3	70.0 (50.0–80.0)	70.0 (60.0–80.0)	0.89	0.82	< 0.001	0.81	(0.74–0.86)	< 0.001
4	60.0 (40.0–70.0)	60.0 (50.0–70.0)	0.89	0.75	< 0.001	0.76	(0.67–0.82)	< 0.001
5	60.0 (40.0–70.0)	50.0 (40.0–70.0)	0.90	0.76	< 0.001	0.75	(0.66–0.82)	< 0.001
6	50.0 (20.0–70.0)	50.0 (30.0–70.0)	0.91	0.84	< 0.001	0.83	(0.77–0.88)	< 0.001
7	40.0 (10.0–60.0)	50.0 (30.0–60.0)	0.90	0.81	< 0.001	0.80	(0.72–0.86)	< 0.001
8	60.0 (50.0–80.0)	70.0 (60.0–80.0)	0.89	0.76	< 0.001	0.74	(0.64–0.82)	< 0.001
9	90.0 (80.0–10.0)	90.0 (80.0–90.0)	0.91	0.61	< 0.001	0.62	(0.50–0.71)	< 0.001
10	80.0 (70.0–90.0)	80.0 (70.0–90.0)	0.90	0.66	< 0.001	0.62	(0.50–0.71)	< 0.001
11	80.0 (70.0–90.0)	80.0 (70.0–90.0)	0.90	0.67	< 0.001	0.65	(0.54–0.74)	< 0.001
Total	61.8 (53.6–74.6)	67.3 (55.5–75.5)	0.91	0.87	< 0.001	0.87	(0.81–0.90)	< 0.001
OT Students ($n=260$)								
1	60.0 (50.0–70.0)	60.0 (50.0–70.0)	0.89	0.44	< 0.001	0.48	(0.36–0.58)	< 0.001
2	60.0 (50.0–70.0)	60.0 (50.0–70.0)	0.89	0.60	< 0.001	0.56	(0.46–0.66)	< 0.001
3	70.0 (60.0–80.0)	60.0 (50.0–80.0)	0.89	0.61	< 0.001	0.54	(0.43–0.64)	< 0.001
4	50.0 (40.0–70.0)	50.0 (50.0–60.0)	0.88	0.55	< 0.001	0.60	(0.50–0.69)	< 0.001
5	50.0 (40.0–60.0)	50.0 (40.0–60.0)	0.88	0.43	< 0.001	0.40	(0.27–0.52)	< 0.001
6	50.0 (30.0–60.0)	50.0 (30.0–60.0)	0.89	0.57	< 0.001	0.59	(0.48–0.68)	< 0.001
7	50.0 (30.0–60.0)	50.0 (30.0–60.0)	0.89	0.62	< 0.001	0.60	(0.50–0.69)	< 0.001
8	60.0 (50.0–70.0)	60.0 (50.0–70.0)	0.88	0.54	< 0.001	0.49	(0.37–0.60)	< 0.001
9	80.0 (60.0–90.0)	70.0 (50.0–90.0)	0.89	0.46	< 0.001	0.44	(0.32–0.55)	< 0.001
10	60.0 (50.0–70.0)	60.0 (50.0–70.0)	0.88	0.48	< 0.001	0.49	(0.37–0.59)	< 0.001
11	60.0 (50.0–70.0)	60.0 (50.0–80.0)	0.88	0.45	< 0.001	0.43	(0.30–0.54)	< 0.001
Total	57.3 (48.2–65.5)	57.3 (50.0–65.5)	0.90	0.67	< 0.001	0.66	(0.57–0.73)	< 0.001

Abbreviations: OT Occupational Therapy, *ICC* Intraclass Correlation, *CI* Confident Interval

[a] Median (Interquartile Range)

[b] Retest sample: Professionals $n=129$ and students $n=177$

Table 3 Hypothesis testing for known-groups validity regarding participants' role

OT Participants[a]	n	EPIC Score mean (SD)	EPIC Score median (IQR)
Students	260	57.4 (14.0)	57.3 (48.2–65.5)
Professionals—Diploma or bachelor's	74	56.2 (14.4)	57.7 (46.1–64.6)
Professionals – Master	95	62.8 (15.1)	62.3 (53.6–72.7)
Professionals – Doctorate	33	79.0 (10.3)	80.0 (72.7–87.3)

Abbreviations: *OT* Occupational Therapy, *SD* Standard Deviation, *IQR* Interquartile Range

[a] ANOVA p-value < 0.001

items and accounted for 29% of the common variance. The second factor (eigenvalue = 2.45) consisted of 4 items and explained an additional 22% of the common variance. The third factor (eigenvalue = 2.20) included 3 items and accounted for an additional 20% of the common variance. Only one item, "*4. Critically appraise study methods*", was cross-loaded into two factors (factors 2 and 3). Cronbach's alpha values for the three factors were 0.89, 0.87 and 0.84, respectively.

Discussion

This study involved the Spanish translation and cross-cultural adaptation of the EPIC scale, along with the evaluation of its psychometric properties in Spanish-speaking OT students and professionals. The findings indicated that the EPIC had excellent internal consistency in both groups. However, test–retest reliability analysis yielded excellent/strong results for professionals, while it was adequate/moderate in students. Higher EPIC scores were associated with higher levels of education. Furthermore, exploratory factor analysis revealed a 3-factor solution that accounted for 71% of the common variance and that presented good eigenvalues and internal consistency.

Reliability is essential for establishing the validity of an assessment tool [30]. In OT professionals, the observed EPIC Cronbach's alpha was 0.91 for the total score, comparable to the result seen in physical therapy professionals (α = 0.89), which indicates strong internal consistency of the scale [22, 30]. Additionally, the test–retest reliability for the total score was excellent (ICC = 0.87, 95%CI = 0.81–0.90) and similar to the results observed in physical therapists (ICC = 0.89, 95%CI = 0.85–0.91) and Canadian OT professionals (ICC = 0.92, 95%CI = 0.88–0.95) [22, 23]. These findings suggest that this version of the EPIC is a reliable tool for evaluating changes in EBP confidence over time among Spanish OT professionals.

At the item level, test–retest reliability performed adequately, with ICC values ranging from 0.60 to 0.83. However, items 1 (*Identify a gap in your knowledge*), 9 (*Ask about needs, values and treatment preferences*), 10 (*Decide on a course of action*), and 11 (*Continually evaluate the effect of your actions*) presented lower reliability, with ICC values between 0.60 to 0.65. This pattern has also been observed in the validation of the EPIC scale in Canadian OT and physical therapy professionals [22, 23]. The authors suggested that the reliability decrease among

Table 4 Factor loadings obtained in the exploratory factor analysis with Promax rotation (n = 462)

Item	Factor 1	Factor 2	Factor 3
1. Identify a gap in your knowledge	0.67		
2. Formulate a question to guide literature research			0.83
3. Effectively conduct an online literature search			1.0
4. Critically appraise study methods		0.44	0.44
5. Critically appraise measurement properties		0.55	
6. Interpret t-test or chi-square tests		0.91	
7. Interpret linear or logistic regressions		0.98	
8. Determine if evidence applies to your patient/client	0.36		
9. Ask about needs, values and treatment preferences	0.76		
10. Decide on a course of action	0.96		
11. Continually evaluate the effect of your actions	1.0		
Eingenvalue	3.16	2.45	2.20
Variance explained (%)	0.29	0.22	0.20
Cronbach's Alpha	0.89	0.87	0.84

these items may be due to lower variability in ratings, as responses tended to cluster at the high end of the scale [22, 23]. Given these findings, we recommend interpreting changes in EBP self-efficacy based on the total EPIC score rather than individual item scores.

Regarding the EPIC reliability in OT students, although the observed internal consistency was excellent ($\alpha = 0.90$), the test–retest reliability for the total score was moderate (ICC = 0.66, 95%CI = 0.57–0.73). Firstly, this discrepancy could be related to the students' academic year, as those in their final years are likely more coherent and confident in their EBP knowledge [31]. However, since the academic year data was not collected, further studies are needed to clarify these results. Secondly, it could be related to the assessment tool itself. Most EBP self-efficacy assessment tools have been adapted from those created for healthcare professionals, not directly for students [32, 33]. This could result in subtle difficulties and a lower level of adaptation for students. This situation highlights two important points: the potential need for EBP assessment tools developed specifically for students and the necessity to interpret changes in EBP assessed with the EPIC scale in this group with caution.

The testing of construct validity revealed a statistically significant relationship between the total EPIC score and the educational level of occupational therapists. Specifically, there was a mean difference of 6.6 points when comparing professionals with only a diploma or bachelor's degree to those with a master's degree. In addition, a 22.8-point mean difference was observed between professionals with a diploma or bachelor's and those with doctorate studies. These results align with previous EPIC validation studies and support literature that linked higher university studies with higher EBP confidence [6, 22, 23]. Similar trends were observed when comparing students with OT professionals. Nevertheless, the difference in EPIC scores between OT students and professionals with only a diploma/bachelor's was minimal. It is worth considering that the small sample size of OT professionals with a diploma or bachelor's degree ($n = 74$) compared to those with OT students ($n = 260$) could impact these results. Moreover, there is a mean 10-year gap between when these professionals completed their OT degree and when the students were assessed. Considering that EBP in OT has gained attention during the last decades and the likely slow implementation in the degrees [34], we could assume that this new OT generation had more EBP during their undergraduate stage and could have more abilities than the veteran OT professionals' counterparts. However, a deeper investigation is needed to clarify this relationship.

The exploratory factor analyses yielded a 3-factor solution, explaining 71% of the common variance, which is considered an adequate proportion [35]. This result mirrored the findings from the validation of the EPIC among physical therapists by Salbach and colleagues, where the same numerical solution and explained common variance were observed [22]. The authors established that these factors could reflect 3 potential themes of the EBP process [22]. We theorized that, although the EPIC was developed based on several EBP models, including David Sackett's five-step process [14], the item structure can be interpreted within a broader EBP theoretical framework. For instance, the observed factors could align with the EBP framework established by the Johns Hopkins team: *1) Practice question* (our factor 3), *2) Evidence* (factor 2) and *3) Translation* (factor 1) [36]. These findings, along with the connections between the EPIC and different EBP models and frameworks, support the construct validity and central theme of the scale.

Strengths and limitations

The results presented in this study should be interpreted with caution due to its limitations. Firstly, the number of responses prevented us from conducting a detailed stratified analysis. However, we performed hypothesis testing for construct validity regarding professionals' academic studies. In this context, the academic year of OT students was not collected and a possible relationship between this variable and EBP confidence couldn't be explored. Despite this, this is the first time that the psychometric properties of the EPIC have been evaluated in OT students. Secondly, the reliability of the findings could be influenced by the participants' professional/academic development in EBP during the follow-up. However, the test–retest time interval did not exceed the expert recommendations (two weeks) [37]. Lastly, the participants who participated in this study may have been more interested in EBP or research than their counterparts, which could introduce a selection bias.

Conclusions

The Spanish version of the EPIC scale showed excellent internal consistency, strong test–retest reliability, and adequate construct validity for evaluating EBP self-efficacy among Spanish-speaking OT professionals using the total score. However, test–retest reliability was moderate among Spanish-speaking OT students, indicating that changes in EBP confidence assessed with the EPIC scale in this group should be interpreted with caution.

Abbreviations

EBP	Evidence-based practice
EPIC	Evidence-based practice confident scale
CHERRIES	Checklist for reporting results of internet e-surveys
ICC	Intra-class correlation
IQR	Interquartile range
OT	Occupational therapy

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12909-024-06383-1.

Supplementary Material 1.

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Authors' contributions
PFP, PPG and ASP: conceptualization. DPB and PFP: methodology. AFA and DPB: formal analysis. AFA, PFP and DPB: writing—original draft preparation. All authors: writing—review and editing. VC and JA-PZ: supervision. CES, RFT, and MVC: project administration. All authors agree to be accountable for all aspects of the work.

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Data availability
Anonymized data is available from the corresponding author upon reasonable email request.

Declarations

Ethics approval and consent to participate
This study obtained the approval of the Research Ethics Committee the Miguel Hernández University (DPC.ENM.02.22; DPC.PFP.231017). In addition, this study was carried out following the Declaration of Helsinki and written informed consent was obtained from all the study participants.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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