


## EVALUATION INSTRUMENTS IN COMPETENCY-BASED TRAINING IN PHYSICAL THERAPY: AN INTEGRATIVE LITERATURE REVIEW

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### ABSTRACT

Learning and teaching is a continuous process that involves the evaluation of learning, bringing in its context meaningful understandings to students, teachers and educational institutions. Evaluation systematically allows the measurement of the learning achieved, through self-evaluation processes, experiences and the formulation of strategies to improve the educational process. This study aims to identify assessment instruments in the competency-based training of physical therapy students or professionals, and to obtain the results of the validation of each instrument. For this study, an Integrative Literature Review was carried out that explored the concept of competency-based training in physiotherapy

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professionals, in the Capes Periódicos, BIREME, Scielo, ERIC and PUBMED directories, with descriptors used in Portuguese, English and Spanish. From the search, a total of 24,821 articles were found and after the selection stages, 14 articles remained. As a result, most of the articles were between two directories Capes Periódicos and BIREME, the English language, and the descriptors "Physiotherapy x Evaluative instrument" and "Physiotherapy x Professional evaluation". And with the highest publication between the years 2020 and 2022 and carried out in different contexts such as academics, physiotherapists and teaching professionals. It is concluded that the research showed that educational instruments in the training of physiotherapists provide positive results, improving theoretical-practical learning and developing essential skills such as communication and clinical reasoning. However, more research and development of new instruments is needed to cater to students' individualities in diverse practice settings.

**Keywords:** Universities, Professional competence, Competency-based education, Health evaluation.

## INTRODUCTION

The training of health professionals is a complex and multifaceted process that requires the integration of theoretical and practical knowledge. In the current context, the competency-based approach has stood out as an effective strategy to ensure that professionals acquire the necessary skills to meet the demands of the health system, in this case competence is the ability to mobilize various cognitive resources to develop strategies for identifying and solving problems (Borgues, 2018).

Professional competence encompasses the challenges of knowing how to think and learn. The notion of science as a stock of available knowledge, accessible through simple transmission, no longer fits; the notion of a permanent process of innovation prevails. Knowledge innovates so much because it is renewed uninterruptedly (Paiva; Melo, 2008).

Learning and teaching are continuous processes that involve the evaluation of learning, bringing in its context significant understandings to students, teachers and educational institutions, this training model requires the use of accurate and appropriate evaluation instruments, which not only measure technical knowledge, but also the ability to apply this knowledge in real situations (Felix et al., 2022).

Evaluation systematically allows the measurement of the learning achieved, through self-evaluation processes, experiences and the formulation of strategies to improve the educational process (Alexandre; Coluci, 2011).

As a result, the implementation of active methodologies and the inclusion of students in the labor market earlier can facilitate the learning process and contribute to students developing skills necessary for professional practice, which for Amaral et al. (2022) also enables the definition of maintenance strategies or changes in the professional qualification proposals presented at the government levels, institutional, school, associative and class movements in defense of the quality of care offered by these professionals (Chamber; Santos, 2012).

Active methodologies represent a set of pedagogical approaches that place the student at the center of the learning process, promoting their active participation and engagement, unlike traditional methods, where the teacher is the main transmitter of knowledge, active methodologies encourage students to explore, question and build knowledge in a collaborative and dynamic way, Examples of these methodologies include problem-based learning (PBL), team-based learning, flipped classroom, project-based teaching, and collaborative learning (Gomes et al., 2021).

Once this is understood, it is necessary to understand the context and the main teaching instruments used among physiotherapy health professionals in the training process, in order to discuss the possibilities of using competency-based curricula. This research seeks to analyze the evaluation instruments of professional competencies used for the training of physiotherapy professionals.

## **METHODOLOGY**

The present investigation is an Integrative Literature Review that, according to Ramos (2014), requires a methodological sequence that guarantees the rigor of the research, having 6 steps: (i) identification of the theme and selection of the hypothesis or research question; (ii) establishment of criteria for inclusion and exclusion of studies; (iii) definition of the information to be extracted from the selected studies/categorization of the studies; (iv) evaluation of the included studies; (v) interpretation of the results; (vi) presentation of the review/synthesis of knowledge. For a better understanding, a protocol based on the literature was developed (Silva; Padula, 2021).

Initially, we sought to explore what has been researched around the concept of "How does the use of competency-based evaluation instruments happen in the learning process of health professionals". After delimiting the theme, the question used to guide the research was defined (Step 1). To this end, the P.V.O. technique was used, an adaptation of the acronym P.I.C.O., which is a search strategy widely used in the health area, in clinical trial studies (Reubenson; NG; Gucciardi, 2020). The P.V.O. is interpreted as follows: (P) refers to the problem situation, participants or context; (V) this is the study variable; (O) refers to outcomes, which are the expected results.

Therefore, using the P.V.O. technique, it is considered that (P) corresponds to physiotherapy professionals, since the training of health professionals is related to the assessment instruments used in higher education education; (V) it is related to the evaluation instruments professional competence, specifically in physiotherapy; and (O) refers to the final product, intended in this review, in order to carry out a survey of research on studies on the concept of competence applied to the training of physiotherapists. Thus, based on the definition of the variables and participants/context, the following question-problem was formulated: "In the last 5 years, has there been an evolution in the evaluation methods of the concept of professional competence in the context of health and the training of physiotherapy professionals?" (Step 1).

In Step 2, the directories, descriptors, cross-referencing, and selection of inclusion and exclusion criteria were defined. The directories used were Capes Periódicos, SciELO, BIREME, Eric and Pubmed. The descriptors used were in Portuguese, English and Spanish, to provide ample possibility of directing the foundation, analysis and discussions, in addition to supporting the searches of the objects in the databases. The main descriptor used was the terms "physiotherapy", "physiotherapy" and "physiotherapy" in conjunction with the other descriptors used in the three languages, as shown below:

**Portuguese**

Evaluation sheet  
Performance sheet  
Evaluation instruments  
Professional competence  
Professional Assessment

**English**

Evaluation form  
Performance sheet  
Evaluation instrument  
Professional competence  
Professional assessment

**Spanish**

Form of evaluation  
Performance Sheet  
Assessment instrument  
Professional competence  
Professional Evaluation

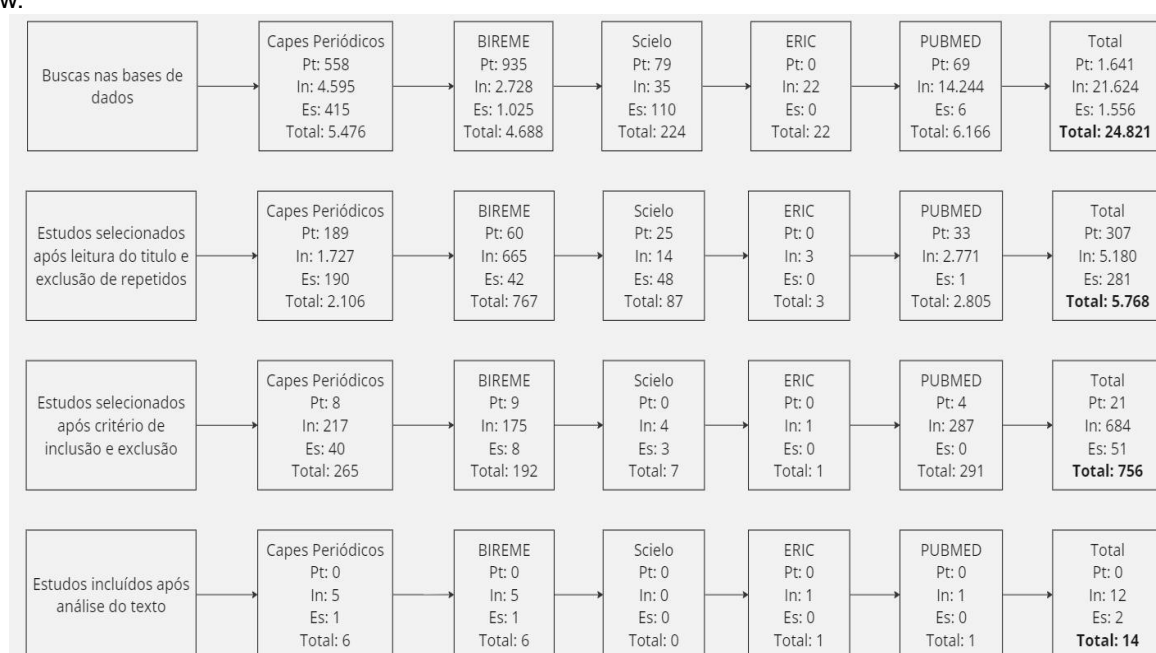
The searches were made in Portuguese, Spanish and English, according to their relevance to the research. In order to refine the retrieved studies, the following inclusion criteria were used: articles from the last 5 years; free and in full; with the descriptors in the keywords or title; that uses the perspective of health education, and exclusion, limited to articles that do not use the health context (Step 2).

After these stages, the studies underwent a critical evaluation, carried out through a Relevance Test, in order to evaluate the framing of the studies in the research in question, and to refine the repertoire of articles selected and suitable for data analysis. For analysis, the following aspects were chosen: (1) characterization of the articles (year), (2) methodological data (type of study and nature of the research) and (3) keywords.

## DATA ANALYSIS

At the time of the search, the findings were selected as suitable for this research, based on the reading of the abstracts of the articles, and interpreted as related to this Integrative Literature Review. The searches were organized in the flowchart represented in figure 1.

Figure 1. Flowchart of the methodological steps used in the selection phase of the articles of this integrative review.



Source: Prepared by the author (2024).

\*Note: Portuguese; In: English; Es: Spanish;

According to figure 1, the search in the directories presented almost twenty-five thousand articles in the database search, which was reduced after reading the title and excluding the repeated ones to less than 65%, leaving only 756 articles eligible. Finally, only 14 articles were included, with the largest number of articles being Capes Periódicos and BIREME, the English language, and the descriptors "Physiotherapy x Evaluative Instrument" and "Physiotherapy x Professional Evaluation".

## RESULTS

A total of 14 studies were found for the present review. These findings are shown in Chart 1, with title, first author, year of publication, journal, and abstract.

Table 1. Description of the characteristic aspects of the articles collected for this Integrative Literature Review about evaluation instruments in physical therapy.

TITLE	1° AUTHOR	ANUS	NEWSPAPER
The Assessment of Physiotherapy Practice tool provides informative assessments of clinical and professional dimensions of student performance in undergraduate placements: a longitudinal validity and reliability study	Alan Reubenson	2020	Capes Newspaper
Quality of learning cases based on Problems used in physiotherapy education	Xochiquetzalli Tejada Castellanos	2022	Capes Newspaper
Self-regulated learning in physical therapy education: a non-randomized experimental study comparing self-directed and instruction-based learning	Wim van Lankveld	2019	Capes Newspaper
Impact of classroom-based MASK-ED™ (KRS simulation) on physiotherapy student clinical performance: a randomized cluster trial	Tayne Ryall	2022	Capes Newspaper
Perception of clinical educational environment by student of physiotherapy based on the Postgraduate Hospital Educational Environment Measurement Questionnaire in Chile	Karen Córdova-León	2019	BIREME
Adaptation of the person centered therapeutic relationship patient version (PCTR-PT) to a version for physiotherapists (PCTR-PHYS) and evaluation of its psychometric Properties	- Oscar Rodriguez-Nogueira	2023	BIREME
Physiotherapists' Evidence-Based Practice profiles by HS-EBP questionnaire in Spain: A cross-sectional normative study	Juan C. Fernández-Domínguez	2022	PUBMED
Acceptance of the 'Assessment of Physiotherapy Practice (Chinese)' as a standardised evaluation of professional competency in Chinese physiotherapy students: an observational study	Jia Hu	2020	Capes Newspaper
Factor structure and short version of the modified Fresno test to assess the use of the evidence-based practice in physiotherapists	Anderson Martins da Silva	2021	BIREME
Assessment of Evidence-Based Practice (EBP) among physiotherapists in Cameroon: a cross-sectional survey	Dilane Landry Nsangou Muntessu	2024	BIREME
Self-evaluated ethical competence of a practicing physiotherapist: a national study in Finland	Kati Kulju	2020	Capes Newspaper
Methodological approaches for identifying competencies for the physiotherapy profession: a scoping review	Stephanie Scodras	2022	ERIC
Learning styles of physiotherapy students of basic courses and training practices of a university in Colombia	Esperanza Gómez Ramírez	2021	BIREME
Development of the Feedback Quality Instrument: a guide for health professional educators in fostering learner-centred discussions	Christina E. Johnson	2021	BIREME

Source: Prepared by the author (2024).

## DISCUSSION

From the review, it was evidenced that the use of teaching tools to assess the clinical competencies of undergraduate students in physiotherapy proved to be positive for the exercise of the profession. Reubenson et al. (2020) corroborates this finding, the author states that clinical supervisors' evaluations of the performance of undergraduate physiotherapy students using the "Practical Assessment in Physiotherapy" tool are better



characterized by two factors that represent clinical and professional skills. It also provides users with confidence that the same constructs are being evaluated equally well over time and context.

The problem-based learning strategy, cited by Tejeda et al. (2022), adds to the evaluative instruments used in the training of physiotherapy professionals. The author states that this type of method is essential for students, as it favors the stimulation of analysis and clinical reasoning. In agreement, Silva; Padula (2021) considers that the inclusion of curricular content related to the institutional political and pedagogical project and the curricular guidelines in Physiotherapy is the main source of change in this situation. Studies carried out in other countries have shown the effectiveness of this action during professional training.

The review shows that self-directed learning, emphasizing the student's responsibility in their own learning process, according to Lankveld et al. (2019), enabled the same response when compared to traditional and structured classroom teaching, used in physiotherapy training. In agreement, Zampieri et al. (2022) state that open communication and understanding of the evaluative instrument between student-faculty allow the construction of critical thinking, greater learning in a differentiated way, and provides the retention of superior knowledge and assistance to clinical practice.

The Hospital Educational Environment Measurement Questionnaire observed the experience of students in different environments, and showed an increase in the score as they advanced, therefore, improving the perception of the educational clinical environment as long as it uses the same evaluative instrument in different types of scenario. Therefore, it reflects the perception of the learning process with the same evaluative instrument, making students face changes in scenarios with greater security and understanding of how it will be charged.

The Person-Centered Relationship Scale had a version adapted for the relationships of the physiotherapist, according to Córdova-León; Fernández-Huerta; Rojas-Vargas (2019). The author obtained positive results with the use of this scale, resulting in a validated and viable instrument in relation to the quality of the therapeutic relationship.

The Health Sciences Evidence-Based Practice Questionnaire (HS-EBP) is one of the pillars of evidence-based physiotherapy research with the aim of eliminating detected barriers and improving specific facilitators in clinical settings. With the above report, Fernández-Domínguez et al. (2022) states that statistical analysis should be applied in the



evaluation instruments and thus have significant results for academic training. In addition, the results obtained result from differential patterns of the EBP, based on the score obtained in the questionnaire and showing the deficiencies for a better fit of the EBP practice, which allows a starting point for improvement in the implementation of this method.

However, according to Muntessu et al. (2024) The study carried out with physiotherapists showed unfavorable values. The professionals showed low knowledge and low level of practice in the use of the EBP, which for the author is a reason to inform about the improvement in the training of physiotherapy students on the mastery and implementation of these evaluation instruments in Cameroon.

Regarding the validated instrument "Assessment of Physiotherapy Practice" (APP), the author states that validated and reliable assessment instruments are important to ensure a good result and are measured as expected. According to Hu et al. (2020), the perception of physiotherapy clinicians and students with the use of this validated instrument was positive, and in both groups they considered the performance indicators a useful guide for the expected clinical education behavior.

Finally, the Feedback Quality Instrument clarifies how educators can work together with students to promote high-quality, student-centered feedback discussions in clinical practice, as per Johnson et al. (2021) and that the items promote educators behaviors to engage students in a learning debate. This exchange between educator and student has to be focused on individuality, knowing that each feedback depends on the individuals and the context applied.

## **FINAL CONSIDERATIONS**

Based on what was evidenced in the research, the instruments used to provide a better education of students and physiotherapy professionals are present in this integrative review and provide many positive results according to the use of these methods. It can be observed that these tools used by educators or education professionals favor the development of these students to have better undergraduate experiences and promote more advanced skills when they become competent professionals.

These adopted materials, in addition to having improved the practical theoretical learning format, were also a way to develop or improve essential skills for students and physiotherapists, favoring communication, ethics and quick clinical reasoning.

However, the encouragement of more research on validated assessment instruments and more instruments to be developed is necessary, so that they can have more resources to use and improve students taking into account their individualities and situations in different practice scenarios.

## REFERENCES

1. ALEXANDRE, N. M. C.; COLUCI, M. Z. O. (2011). Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. *Ciências & Saúde Coletiva*, 16(7), 3061-3068, jul.
2. AMARAL, B. V. E. do; GRANEIRO, T. S.; MIRANDA, T. L.; SILVA, J. S. da; ROCHA, C. R. da. (2022). Instrumentos de avaliação de competência profissional em enfermagem: uma revisão integrativa. *Research, Society and Development*, 11(6), e33311629085, 29 abr.
3. BORGES, K. P. (2018). Competências para formação do fisioterapeuta no âmbito das diretrizes curriculares e promoção da saúde. *Saúde e Pesquisa*, 11(2), 347, 30 ago.
4. CÂMARA, A. M. C. S.; SANTOS, L. L. de C. P. (2012). Um estudo com egressos do curso de fisioterapia da Universidade Federal de Minas Gerais (UFMG): 1982-2005. *Revista Brasileira de Educação Médica*, 36(1), 5-17, 1 mar.
5. CÓRDOVA-LEÓN, K.; FERNÁNDEZ-HUERTA, L.; ROJAS-VARGAS, M. (2019). Perception of clinical educational environment by student of physiotherapy based on the Postgraduate Hospital Educational Environment Measurement Questionnaire in Chile. *Journal of Educational Evaluation for Health Professions*, 16, 16, 14 jun.
6. FELIX, O. L. P.; FEDERIGHI, E.; ROCHA, R.; FRANCO, S. (2022). Teste de progresso: um instrumento avaliativo para o curso de fisioterapia. *Brazilian Journal of Development*, 8(1), 2668-2687, 12 jan.
7. FERNÁNDEZ-DOMÍNGUEZ, J. C.; DE PEDRO-GÓMEZ, J. E.; JIMÉNEZ-LÓPEZ, R.; ROMERO-FRANCO, N.; BAYS MONEO, A. B.; OLIVA-PASCUAL-VACA, Á. et al. (2022). Physiotherapists' Evidence-Based Practice profiles by HS-EBP questionnaire in Spain: A cross-sectional normative study. *PLOS ONE*, 17(6), e0269460, 3 jun.
8. GOMES, D. F.; MOITA, M. P.; DE OLIVEIRA, L. C.; ARAÚJO DIAS, M. S. de. (2021). Avaliação formativa em saúde: uma análise das evidências latino-americanas. *Saúde (Santa Maria)*, 47(1), 13 set.
9. HU, J.; JONES, A. Y. M.; ZHOU, X.; ZHAI, H.; NGAI, S. P. C.; SIU, K. C. et al. (2020). Acceptance of the "Assessment of Physiotherapy Practice (Chinese)" as a standardised evaluation of professional competency in Chinese physiotherapy students: an observational study. *BMC Medical Education*, 20(1), 9 abr.
10. JOHNSON, C. E.; KEATING, J. L.; LEECH, M.; CONGDON, P.; KENT, F.; FARLIE, M. K. et al. (2021). Development of the Feedback Quality Instrument: a guide for health professional educators in fostering learner-centred discussions. *BMC Medical Education*, 21(1), 12 jul.
11. LANKVELD, W.; MAAS, M.; VAN WIJCHEN, J.; VISSER, V.; STAAL, J. B. (2019). Self-regulated learning in physical therapy education: a non-randomized experimental study

comparing self-directed and instruction-based learning. BMC Medical Education, 19(1), 8 fev.

12. MUNTESSU, D. L. N.; GHASSI, H. T.; BUH, F. C. et al. (2024). Avaliação da Prática Baseada em Evidências (PBE) entre fisioterapeutas em Camarões: uma pesquisa transversal. BMC Medical Education, 24, 332.
13. PAIVA, K. C. M. de; MELO, M. C. de O. L. (2008). Competências, gestão de competências e profissões: perspectivas de pesquisas. Revista de Administração Contemporânea, 12(2), 339-368, jun.
14. RAMOS, A.; FARIA, P. M.; FARIA, Á. (2014). Revisão sistemática de literatura: contributo para a inovação na investigação em Ciências da Educação. Revista Diálogo Educacional, 14(41), 17.
15. REUBENSON, A.; NG, L.; GUCCIARDI, D. F. (2020). The Assessment of Physiotherapy Practice tool provides informative assessments of clinical and professional dimensions of student performance in undergraduate placements: a longitudinal validity and reliability study. Journal of Physiotherapy, 66(2), 113-119, abr.
16. SILVA, A. M. da; PADULA, R. S. (2021). Factor structure and short version of the modified Fresno test to assess the use of the evidence-based practice in physiotherapists. BMC Medical Education, 21(1), 27 fev.
17. TEJEDA CASTELLANOS, X.; ALPUCHE HERNÁNDEZ, A.; ABURTO-ARCINIEGA, M. B.; GUTIÉRREZ CAMACHO, C. (2022). Calidad de los casos de aprendizaje basado en problemas empleados en educación fisioterapéutica. Investigación en Educación Médica, 11(44), 67-75, 9 out.
18. ZAMPIERI, R. N. V. G.; MUZEKA, A. L. P.; BATISTA, E.; ISRAEL, V. L. (2022). Metodologias ativas na graduação em fisioterapia neurofuncional infantil: um relato de experiência no processo ensino-aprendizagem. Extensão em Foco, 26, 27 jan.