

# **Evidence-Based Practice Sample Work**

## **Assessing Evidence-Based Practice in Physical Therapy: A Multifaceted Mixed-Methods Approach**

## Abstract

**Background:** Health practitioners (such as physical therapists) see [evidence-based Practice](#) (EBP) as the "holy grail" of patient management. However, patients are sometimes not treated with the appropriate therapies for their illness. Although studies have already investigated the facilitators and barriers to this issue, the relevance of the information obtained increases if it is context-appropriate. Because the profession is still relatively young in Portugal, little is known regarding the adoption of EBP in the context of Portuguese physical therapists. So, the purpose of this study is to determine whether or not Portuguese physical therapists use an EBP, as well as to gather and better understand the causes, challenges, and facilitators related to EBP.

**Methods:** The study used a mixed-methods design, including both quantitative and qualitative methods. To ensure a correct sample, a National Professional Association email database and past students' emails were used. Quantitative data was collected through an e-survey adapted from the EBP: Beliefs, Attitudes, Knowledge, and Behaviors of Physical Therapists Portuguese version questionnaire, which was analyzed using logistic regression. Qualitative data was collected through semi-structured interviews with selected physical therapists, focusing on sociodemographic factors and [systematic review](#) survey responses. The interviews were conducted online using online software, with audio contact and thematic exploration.

**Results:** A study of 277 physical therapists in Portugal found that 193 completed a questionnaire, and 10 participated in interviews. The Portuguese therapists reported positive beliefs, attitudes, knowledge, and behaviours regarding evidence-based Practice (EBP). Age, education, and workplace were identified as key factors in EBP implementation. Evidence, patients, clinical experience, schools, country, and physical therapy characteristics also acted as facilitators or barriers when performing EBP. The study highlights the importance of understanding [experimental design](#) and implementing EBP in Portugal.

**Keywords:** Physical therapists, thematic exploration, clinical experience, e-surveys, triangulating analysis, orthopaedic conditions, systematic reviews, meta-analyses, RCTs, Philosophy Doctors, logistic regression analysis, clinical instructors

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## INTRODUCTION

Many healthcare practitioners nowadays use the phrase evidence-based practice (EBP). EBP was developed in the 1980s at McMaster Medical School in Canada and is defined as the conscientious, explicit, and judicious use of current relevant available evidence combined with clinical expertise of healthcare providers and the patient's preferences to guide clinical decisions about patients' care (Hammell, 2001; Rosenberg & Donald, 1995; Sackett et al., 1996; Guyatt et al., 1992). Despite its importance (e.g., improving healthcare quality), professional organizations prioritized it, and influential researchers and clinicians argue that healthcare practitioners (such as Physical Therapists (PTs)) have an ethical obligation to base their Practice on research findings, many still do not practice EBP (Dannapfel, Peolsson, & Nilsen, 2013).

So, the aim of this study is to know if the Portuguese PTs use an EBP and collect and deeper understand the factors, barriers and facilitators associated with EBP.

## Materials & Methods

This study followed the Ethical Principles of the Helsinki Declaration (WMA, 2013) and was approved by the Porto University Faculty of Sport Ethics Committee (CEFADE24-2019).

This study incorporated a concurrent mixed-methods design (McPherson & Kayes, 2012; Creswell et al., 2011; Dixon-Woods et al., 2005; Driscoll et al., 2007; Sandelowski, Voils & Barroso, 2006; Schifferdecker & Reed, 2009; Jones et al., 2006), collecting quantitative (e-survey) and qualitative (semistructured interviews) data to answer the research question.

## Sample gathering

The Portuguese PT professional association, Associação Portuguesa de Fisioterapeutas (APFISIO), requested an email database for working-class recruitment of Portugal PTs. To increase enrollment, past students from 19 national schools were contacted, with a target of 12,000 PTs.

## Quantitative design

For the quantitative data, it was chosen to apply a self-administered e-survey. The e-survey was evaluated, designed, administered, conducted and collected according to established guidelines (Burns et al., 2008; Passmore et al., 2002; Sierles, 2003; Eysenbach, 2004).

The e-survey was sent to all PTs in the APFISIO database and past PT students via email. Participants were invited to click on the e-survey link after reading the study's information. The study's purpose, data protection rights, selection criteria, reasons for non-participation, termination options, and instructions for completion were clearly stated. Consent was obtained through an informed consent statement. The e-survey was an adaptation of the Evidence-Based Practice questionnaire, which included 55 close-ended questions, 23 sociodemographic-related items, and 32 EBP-related items. Sociodemographic data included personal, professional, and academic data. (Table 1):

Inclusion	Exclusion
have an active PT license;	do not have an active PT license or have another profession than PT;
obtained at least a PT bachelor's degree;	obtained the PT bachelor's degree in a foreign country;
work or have worked as a PT in the past 6 months in Portugal;	do not work in Portugal;
be able to read, write and speak Portuguese;	do not be able to read, write or speak Portuguese;
	Be a PT bachelor student.

## **Qualitative design**

The study used e-surveys to conduct a qualitative study on volunteer physical therapists (PTs). Semistructured interviews were conducted using Skype software, with no face-to-face or written contact. The sample was selected based on sociodemographic factors and survey responses regarding PTs' beliefs, attitudes, knowledge, and behaviours. To ensure high participation, thank you notes, interview objectives, and convenient interview dates were sent after 1, 2, and 4 weeks respectively. The interview script had 12 core questions, validated by an expert panel, and was performed according to Leech (2002) guidelines. The number and order of questions were sometimes altered to maintain a positive relationship with the interviewees. An introductory section with the study's purpose, protection rights, data usage, and "warm-up" questions was included to build empathy and comfort. The interview script was tested on the first participant, who provided feedback on the interview conduction, structure, design, and phrasing of questions.

## **Data analysis—quantitative**

The survey used Microsoft Excel and IBM SPSS 26.0 software to determine response frequencies for survey questions. Some categories were collapsed to use them as dependent measures in logistic regression analyses. For items with a four-point Likert scale, the "Strongly Agree" and "Agree" categories were combined, and the "Do Not Know" and "No" categories were combined. For items categorized by the number of times, the lowest categories were distinguished from the higher ones, and the lowest categories were combined in "Poor" for lower values and "Good" for high values. For items examining the degree of understanding of research terms, the "Understand Completely" and "Understand Somewhat" categories were combined to obtain a 2-category response. Barriers were also collapsed into "Present" or "Absent" for PTs' choices. For smaller subsamples, categories were collapsed to derive stable models. Logistic regression analyses were conducted to examine associations with PTs' characteristics, using an  $\alpha$  of 0.05 to determine if a model needed to be reported. (McCormack, Vandermeer & Allan, 2013).

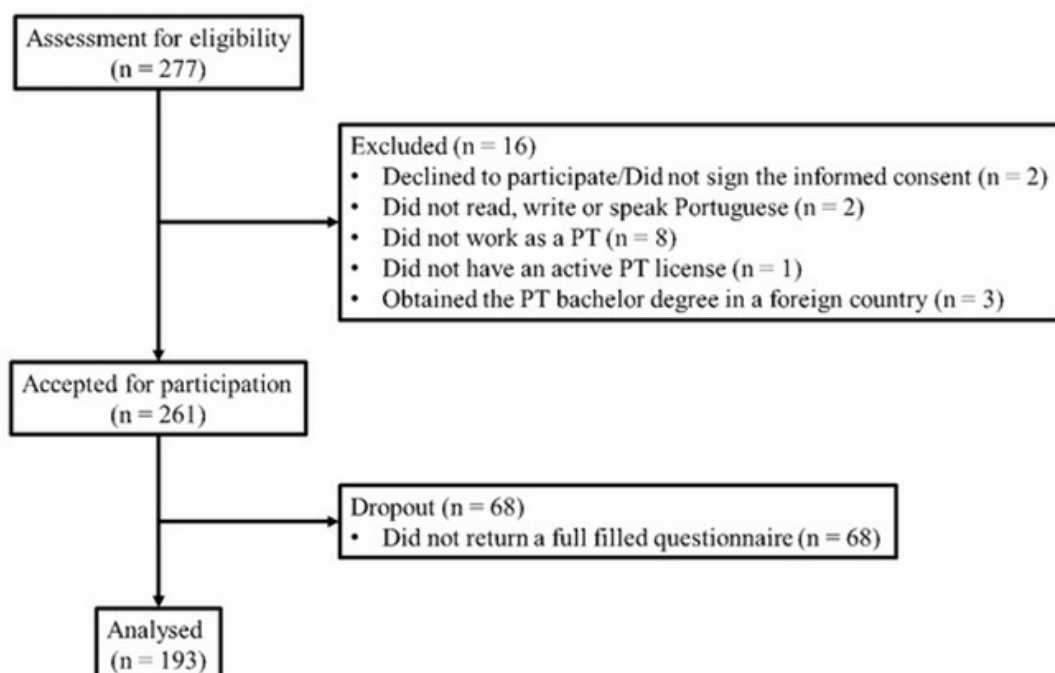
## Data analysis–qualitative

The study used NVivo v12 for data analysis and anonymized and transcribed audio from interviews. The texts were explored using the six phases of the thematic approach. Data collection and analysis were iterative, with three authors reflecting on, comparing, discussing, and adjusting codes and themes. Authors independently read transcripts, identified coding units, and merged them into context units. These units were then merged into categories based on similarity. The categories were then transformed into system levels. Triangulating analysis was performed using FreeMind software. Discussions continued until no inconsistencies existed, preventing bias and strengthening internal validity. The original classification tree was analyzed and discussed with an expert panel, with some categories being collapsed, eliminated, or renamed. Quotations were identified to report findings and illustrate content and translated from Portuguese to English. The methodology followed established guidelines for complete and transparent data reporting. (Goodell, Stage & Cooke, 2016; DiCicco-Bloom & Crabtree, 2006; Wu, Wyant & Fraser, 2016; CASP, 2018; O'Brien et al., 2014; De Casterle et al., 2012; Tong, Sainsbury & Craig, 2007).

## Results

### Quantitative

From the 277 PTs that showed interest in participating in the study, only 193 (69.7%) fully completed the questionnaire (Fig. 1).



**Figure 1: Questionnaire views, participation and completion**

The e-survey took an average of 12 minutes to complete. The bulk of the PTs who responded to the survey were females (73.1%), between the ages of 30-39 (44.6%), and with a valid PT working license received between 5 and 10 years ago (32.1%). Furthermore, despite the fact that the majority only hold a bachelor degree (61.1%), they have shown a desire to pursue a higher academic degree in the future (66.3%). The majority of them (20.7%) earned a Certificate/Baccalaureate from the Escola Superior de Sade de Alcoito and worked as clinical teachers for PT students (51.3%). They also reported belonging to a practice-oriented group (78.8%) and taking continuing education courses at least once a year (89.1%). In terms of practice, the majority of PTs (44.6%) worked more than 40 hours per week, focusing their time on patient care (57.9%), with research and teaching taking a back seat (87.6% and 82.4% within the 0-25% range, respectively). PTs often handled more than 15 adult orthopaedic patients each day (58%, 63.9%, and 39.9%, respectively). The majority (35.2%) worked in Lisbon, in an urban context (82.9%), with 5 to 10 PTs, in the private sector (76.7%, 43.5%, and 63.2%, respectively)-private clinics (21.2%).

## Qualitative

From the 193 PTs that completed the e-survey, only 67 (34.7%) volunteered for the interviews. From those, 23 PTs were selected, but only 10 responded to the emails.

The interviews were conducted between January and April of 2020. Finally, 313 minutes of recordings were acquired (31 minutes on average - 21 minutes lowest [FT 3]; 72 minutes maximum [FT 5]), resulting in 71 transcript pages (7 average - 5 minutes minimum; 13 maximum). The interviews provided fascinating snippets of physical therapists' experiences, opinions, and attitudes concerning evidence-based practice. In most situations, qualitative evidence supports survey findings. "Persons" is the most often used term by PTs, followed by "evidence" and "practice" (191 times, 179 times, and 128 times, respectively).

With the interviews, six main themes were identified: EBP definition, EBP concept origin, Main actors and their importance, Relations between the main actors, EBP in the workplace, and EBP national-wide.

## Discussion

The purpose of this study was to determine whether or whether Portuguese PTs utilize an EBP to gather data and get a better understanding of the variables, challenges, and facilitators related with EBP. Some of the negative responses included "I have access to current research through professional journals in their paper form" , "EBP does not take into account patient preferences" , "My reimbursement rate will increase if I incorporate EBP into my practice" , "The adoption of EBP places an unreasonable demand on PTs" , as well as "Strong evidence is lacking to support most of the interventions I use with my patients" , in which the responses were Disagree or No. Still, there was the question "EBP does not take into account the limitations of my clinical practice setting," with responses ranging from Agree (44.6%) to Disagree (44.6%). Despite their unfavorable responses to these items, they demonstrated progressive views about EBP, as disagreeing with the bulk of these assertions is deemed positive (Bernhardsson et al., 2014). PEDro, for example, indexed 44,309 publications in August 2019 (34,619 trials, 9,004 reviews, and 686 recommendations), and the amount is expected to treble by 2025 (Moseley et al., 2020). Nonetheless, the Internet and the availability of very complex search engines and databases have considerably assisted the effort of finding relevant information (Haines & Silagy, 2001). The majority of Portuguese PTs appear to be competent in their search abilities and aware of internet databases, since they agree on both items, recommendations, systematic reviews, meta-analyses, RCTs, and expert opinion articles, which are the most prevalent studies. PTs preferred reading from higher levels of the evidence hierarchy, such as recommendations, meta-analyses, systematic reviews, or reviews. Evidence supports these choices, which are connected with positive attitudes toward EBP (Jones et al., 2006; Haines & Silagy, 2001; Harris et al., 2014; Dijkers, Murphy, & Krellman, 2012). Furthermore, Salbach et al. (2011) discovered that PTs preferred online access to study summaries or systematic reviews to save time filtering and critiquing research publications. In the Iles and Davidson (2006) survey, for example, 42% of respondents acknowledged that they formally shared and discussed evidence with others in their department or Practice. Furthermore, in the Nilsagrd and Lohse (2010) study, 38% of the PTs cited colleagues as providers of EBP knowledge. Individuals are more likely to be attached to those who are physically close to them and have comparably homophilous social qualities (Hoffmann, Probst, & Christinck, 2007). As a result, this method might be a useful facilitator for work and evidence-related hurdles. Being a clinical instructor is another relevant component. When there was a statistically significant correlation in our qualitative data, individuals who were clinical instructors had more favorable views, attitudes, knowledge, and behaviors about EBP. As a result, because clinical instructors are often older PTs (20-29 years 31%, 30-39 years 54%, 40-49 years 64%, and 50 years 67%), the clinical teacher role may "force" PTs to be more patient.



## Conclusions

The Portuguese Physical Therapists (PTs) have positive beliefs, attitudes, knowledge, and behaviours regarding EBP. Factors such as age, education, and workplace influence EBP implementation. Evidence, patients, clinical experience, schools, country, and physical therapy characteristics can also act as facilitators or barriers.

The study had limitations, including a lack of valid questionnaires, a minimal sample size of 12,000 Portuguese physical therapists, and 26% of the questionnaires being incomplete. The questionnaires were complex and may have been extended due to fatigue or discomfort. The sociodemographic questions could have been added after the EBP-related questions, potentially increasing the number of complete questionnaires. The questionnaire may need revision to represent better Portuguese reality and the PTs' lack of interest in participating in national studies.

In musculoskeletal diseases, for example, discrepancies in therapy utilization were discovered between surveys completed by PTs and audits of clinical notes (Zadro, O'Keeffe, & Maher, 2019). In surveys, 54% of physical therapists picked suggested therapies, 43% chose not recommended treatments, and 81% chose no-recommendation treatments. According to clinical note audits, 63% of patients received suggested physical therapy-delivered treatments, 27% did not get recommended treatments, and 45% received no suggestion. The sample size constraint may also have an impact on the logistic regression analysis. It is predicted that increasing the sample size will enhance the frequency and strength of significant logistic regressions.

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