

RELATIONSHIP BETWEEN COMPETENCY FOR EVIDENCE-BASED PRACTICE AND LEVEL OF BURNOUT OF PHYSICAL THERAPISTS WITH THE ESTABLISHMENT OF THE THERAPEUTIC RELATIONSHIP

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ABSTRACT

Background: Evidence-based practice (EBP) interventions and effective therapeutic alliance (TA) are associated with greater treatment success. Furthermore, burnout syndrome could be detrimental to the development of such TA.

Objective: To examine the association between EBP competencies and burnout level with the quality of TA among Spanish physiotherapists.

Methods: Cross-sectional research with an electronic survey including the EBP Questionnaire-19, Maslach Burnout Inventory and Working Alliance Inventory-Short (WAI-S) and administered to 471 physiotherapists.

Results: Regarding the EBP Questionnaire-19, physiotherapists scored highest on attitude and lowest on knowledge. For WAIS which achieved appropriate results of internal consistency and validity in the sample analyzed, bond scored the highest and goals the lowest. Years of experience was significantly associated with the task ($r = 0.5$; $p = .003$) and bond ($r = 0.7$; $p = .002$) and the WAIS total score ($r = 0.8$; $p < .001$), and all burnout subscales ($-0.7 < r > 0.7$; $p < .001$ for all).

Conclusion: Lower levels of burnout and improved EBP competencies are associated with a TA of greater quality. The association between attitudes toward EBP, a higher level of self-confidence and a lower perception of depersonalization appear to be determinant factors for improving TA.

Introduction

The World Health Organization has stated that health systems must prioritize the understanding of the needs of both individuals and their communities. This may enable professionals to empower people to take an active role in their own health (Morgan and Yoder, 2012). This model of care known as person-centered care is recognized by numerous disciplines as being a standard of quality in clinical practice, and its implementation is considered a priority goal for improving healthcare in the twenty-first century (Sidani and Fox, 2014). The concept of person-centered care, according to Morgan and Yoder (2012) allows care to be negotiated, offering options based on a therapeutic alliance where people are empowered in an attempt to participate, to the extent of their choice, in any decisions about their health. There is evidence that the therapeutic alliance may be the key-stone to achieving person-centered care (Byrne, Baldwin, and Harvey, 2020; Rodríguez-Nogueira, Moreno-Poyato, and Álvarez-Álvarez, 2020; Yun and Choi, 2019) and is also an important element that facilitates the achievement of results in rehabilitation services (Alodaibi et al., 2021; Hall et al., 2010; Kinney et al., 2020).

To evaluate the therapeutic alliance in clinical practice, the most commonly used

instrument is the Working Alliance Inventory (Horvath and Greenberg, 1989). This tool evaluates the level of therapeutic alliance based on Bordin's theoretical contributions who defines this construct as a collaborative relationship between therapist and patient based on three essential elements: (1) agreement on goals; (2) agreement on tasks or treatments; and (3) a collaborative bond that reflects the feelings and attitudes that patient and therapist have toward each other and enables therapeutic work through a sense of collaboration and trust (Bordin, 1979). This bond is considered essential for understanding the patient's needs, facilitating, together with the agreement on tasks and objectives, the achievement of person-centered care (Forchuk et al., 1998).

In parallel, burnout is an important psychosocial problem described as a syndrome of emotional exhaustion, depersonalization and reduced personal fulfillment in the work environment (Maslach and Jackson, 1981). It causes emotional distancing and less responsiveness to the patient's needs, which can weaken the therapeutic alliance and decrease treatment efficacy (Lee et al., 2020). This is prevalent in health professions that are on the front line of patient care (Shanafelt et al., 2012). The symptoms of burnout described by the literature are: emotional exhaustion which causes emotional and cognitive distancing from work exhausting the capacity to get involved and respond to patients' needs; depersonalization described as distancing of service recipients who are considered impersonal objects which derives in an attitude of indifference or cynicism toward others; and personal accomplishment, the lack of which is related to a belief of ineffectiveness leading individuals to identify a lack of control over their own resources to perform their work (Maslach and Jackson, 1986). Depersonalization seems to be related to dehumanization in social interactions, probably reducing empathy (Shanafelt et al., 2005). In this sense, moderating empathy may be a way to protect against intense emotional arousal, but too much may lead to distancing, low concern, depersonalization and dehumanization of care (Maslach, Schaufeli, and Leiter, 2001). Several studies on empathy and burnout have concluded that there is an association between both constructs. Higher burnout seems to reduce empathic capacity (Thirioux, Birault, and Jaafari, 2016; Wilkinson, Whittington, Perry, and Eames, 2017) which seems indispensable to carry out the therapeutic alliance (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021; Morera-Balaguer et al., 2021).

Evidence-based practice (EBP) is the combination of personal clinical experience, the judicious use of the most recent and reliable research, and patient preferences, producing the most appropriate and effective service (André, Aune, and Brænd, 2016; Sackett, Rosenberg, Gray, and Haynes, 1996). The application of EBP interventions in physical therapy contexts is associated with greater treatment success, variations (Childs et al., 2015; Fritz, Cleland, and Brennan, 2007; Gatchel and Okifuji, 2006; Rutten et al., 2010). Studies of nurses have shown that incorporating evidence-based practice into clinical practice increases empathy and improves factors that contribute to establishing a therapeutic alliance such as self-confidence, allowing them to reflect on their practice, present ideas and acquire new knowledge (Moreno-Poyato et al., 2019; Moreno-Poyato et al., 2018). In a cross-sectional study assessing the relationship between EBP and therapeutic alliance, also in nurses, the authors concluded that EBP competencies especially attitude toward EBP seemed to improve the therapeutic alliance (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021).

Few studies have examined the relationship between EBP and burnout in health professionals. Where this has been done, the results are mixed in terms of the impact of EBP implementation on burnout. Patterson, Dulmus, and Maguin (2012) reported lower levels of workplace engagement and higher levels of stress following implementation of EBP-based treatment programs. However, Aarons et al. (2009) reported that the implementation of EBP buffered the impact of high workload and emotional exhaustion in social workers.

Although the literature reflects the importance of the therapeutic alliance in physical therapy services and emphasizes the active role of the professional in this relationship (Miciak et al., 2018; Morera-Balaguer et al., 2021) few studies examine the physical therapist's therapeutic alliance. This information may be useful to identify, describe and overcome shortcomings in this area. It seems evident that the therapeutic alliance is important to achieve person-centered care in physical therapy services, and that the consequences of burnout could lead to a loss in the quality of this relationship. Moreover, EBP could be an important ally, not only for improving the quality of care in physical therapy but also in the attainment of a better therapeutic alliance. Therefore, the present study aimed to examine the association between EBP competencies, the level of burnout, socio-demographic variables and the global perceptions of the therapeutic alliance among Spanish physical therapists. With the previous hypothesis that there is a relationship between EBP competencies and socio-demographic variables with the level of burnout and the therapeutic relationship of physiotherapists.

Methods

Study design and participants

An online cross-sectional survey of Spanish physiotherapists was conducted. The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the University of León (code: 032–2019). The data were treated confidentially and informed consent was obtained from all subjects involved in the study.

The participation of the 17 professional associations of physical therapists in Spain was requested by e-mail between February and September 2020. Google Forms was used as a platform to create the survey, activating the option of one response per user to avoid duplicate responses. All professional associations agreed to participate and they had to send the survey link to each of their members via e-mail or publicize the study through the different social networks at their disposal (Twitter, Facebook, Instagram). In 2020, there were 59592 registered physical therapists according to data from the General Council of Colleges of Physiotherapists of Spain (2021). To identify the minimum sample size, a priori power analysis was conducted with the program G*Power v. 3.1.9.7 for the application of F tests and determining as input parameters an effect size f^2 medium (0.15), α to 0.5, power was set to 80% and eight predictor variables (Faul, Erdfelder, Buchner, and Lang, 2009; Faul, Erdfelder, Lang, and Buchner, 2007). The result showed the need to include 109 participants. Finally, 471 physical therapists participated. The inclusion criteria defined were as follows: (1) be a physiotherapist and (2) belong to one of the existing professional associations of physiotherapists in Spain.

Procedure and variables

The electronic form included a questionnaire with the physical therapists' sociodemographic and professional data and measurement instruments. The sociodemographic and professional variables included were sex, age, years of professional experience, highest education, field of work and shift. The measurement instruments included were the Spanish adaptation of the Working Alliance Inventory-Short Form; the Maslach Burnout Inventory Survey in its version for Human Services, and the Evidence-Based Practice Questionnaire-19.

The Working Alliance Inventory-Short therapists form was used to measure the working alliance. There are two versions of the questionnaire, one for patients and one for professionals, which measure the same dimensions. This is because although the therapeutic alliance is a joint construction between patient and therapist, each may have

different perspective about it. The short version of this scale contains 12 items with a response scale ranging from 1 (never) to 7 (always). This questionnaire is composed of three sub-scales consisting of four items each: (1) bond: the bond between patient and therapist, which includes aspects such as empathy, mutual trust and acceptance; (2) goals: agreement in terms of the goals (i.e., mutual acceptance about what the intervention aims to achieve); and (3) tasks or activities: agreement about the tasks or activities to be carried out. A score is obtained for each subscale and a total score, which can range from 12 to 84 points. The higher the score, the higher the therapeutic alliance. The Spanish therapist's version of the questionnaire has good internal consistency and validity, with a Cronbach's alpha of 0.93 (Moreno-Poyato et al., 2018).

The level of burnout was measured using the Maslach Burnout Inventory – Human Services (Maslach and Jackson, 1986). This instrument consists of three subscales. Previous studies measuring burnout in health-care professionals used cutoff scores for each subscale, classifying them as low, moderate or high (De Paiva, Gomes Canário, Corsino de Paiva China, and Gonçalves, 2017; González-Sánchez et al., 2017; Liebenberg, Coetzee, Conradie, and Coetzee, 2018; Sturzu et al., 2019; Yuguero et al., 2017). The three subscales are as follows: (1) Personal accomplishment at work: Tendency to evaluate oneself negatively, regarding work skills and to relate professionally with patients (higher scores imply lower personal accomplishment and, therefore, less burnout). Personal accomplishment scores ≥ 40 were considered high, from 34 to 39 were considered moderate, and those ≤ 33 were considered low; (2) Emotional exhaustion: In the emotional and affective domain (higher scores imply greater emotional exhaustion and, therefore, more burnout). Emotional exhaustion scores ≥ 27 indicate extreme fatigue, from 19 to 26 correspond to moderate fatigue, and values < 18 indicate a low level of fatigue; and (3) Depersonalization: Feelings and attitudes of cynicism and negative character toward patients. Depersonalization scores ≥ 10 were considered high, from 6 to 9 were considered moderate, and those < 6 were considered low (higher scores imply greater emotional exhaustion and, therefore, more burnout). The Spanish adaptation of the scale showed Cronbach's alpha values above 0.58 for all subscales (Gil-Monte, 2005).

Evidence-based practice was measured using the Evidence-Based Practice Questionnaire-19 (Upton and Upton, 2006). This instrument consists of 19 items, each of which scores from 1 to 7 points, with 1 being the least favorable value and 7 the most favorable in the application of EBP, and three dimensions: (1) practice with a total score between 6 and 42 points; (2) attitude with a total score of between 3 and 21 points; and (3) professional knowledge and skills for EBP with a total score of between 10 and 70 points. Consequently, a total score of between 19 and 133 points is also obtained. The adaptation of the questionnaire to Spanish in a sample of physical therapists showed a Cronbach's alpha higher than 0.7 (De Pedro et al., 2009).

Data analysis

The questionnaire required each question to be answered before moving on to the next one. Therefore, there was no missing data in this research. A descriptive analysis of all the quantitative variables was performed through calculation of the mean values to determine the central tendency and the standard deviation as a measure of dispersion. The categorical variables were expressed as the number and percentage.

The variables showed a normal distribution according to the Kolmogorov–Smirnov test ($p > .05$) and there was homogeneity of variances applying the Levene test. The association between the quantitative variables (i.e. Evidence-Based Practice Questionnaire-19, Maslach Burnout

Inventory – Human Services, and Working Alliance Inventory-Short Form subscales and years of work experience) was evaluated using the Pearson’s correlation coefficient (Schober, Boer, and Schwarte, 2018).

Finally, multivariable linear regression models adjusted for age were used for the Working Alliance Inventory-Short Form subscales as dependent variables and the Evidence-Based Practice Questionnaire-19 and Maslach Burnout Inventory – Human Services subscales, academic training and work experience converted into a continuous variable as independent variables. Statistically significant results were established with a *p*-value of < .05 in all analyses performed. The STATA v.12 statistical package (College Station, TX, USA) was used for statistical analysis.

Results

The mean age of the 471 survey respondents was 33.3 ± 8.1 years, of which women represented 68.4% (Table 1). The mean professional experience of physical therapists was 10.7 ± 7.8 years and 34.7% of participants had postgraduate studies. The employment characteristics revealed that 26.1% worked for the public health system and 73.9% worked in the private sector. Also, the most frequent work schedule was continuous (56.3%).

In relation to the results of EBP, the subscale with the highest mean score was attitude, which reached 81% of the maximum possible score. In contrast, knowledge of EBP was the lowest rated subscale with 64.3% of the total (Table 2). Regarding the therapeutic alliance subscales, bond obtained a score that reached 83.9% of the maximum, while tasks and goals obtained 80% and 70%, respectively, of the maximum possible score.

Table 1. Demographic and employment characteristics of the sample.

	All (n = 471)	Women (n = 322)	Men (n = 149)
Age (years)	33.3 ± 8.1	33.5 ± 7.7	33 ± 9
Work experience (years)	10.7 ± 7.8	11.1 ± 7.6	9.8 ± 8.2
Training (categorical)			
Degree	307 (65.2%)	213 (66.1%)	94 (63.1%)
Master	149 (31.7%)	100 (31.1%)	49 (32.9%)
PhD	15 (3.1%)	9 (2.8%)	6 (4%)
Shift (categorical)			
Split-shift	206 (43.7%)	136 (42.2%)	70 (47%)
Continuous	265 (56.3%)	186 (57.8%)	79 (53%)
Sector (categorical)			
Public	123 (26.1%)	92 (28.6%)	31 (20.8%)
Private	348 (73.9%)	230 (71.4%)	118 (79.2%)

Data provided for age and work experience: mean ± standard deviation; Data provided for categorical variables: n (%).

Table 2. Working Alliance Inventory-Short, Maslach Burnout Inventory –Human Services and Evidence-Based Practice Questionnaire-19 scores (data provided: mean ± standard deviation).

	All (n = 471)	Women (n = 322)	Men (n = 149)
Working Alliance Inventory-Short			

Goals	19.8 ± 3.2	19.9 ± 3.2	19.6 ± 3.1
Tasks	22.4 ± 2.9	22.3 ± 3	22.6 ± 2.6
Bond	23.5 ± 2.4	23.4 ± 2.3	23.7 ± 2.4
Total score	65.7 ± 6.6	65.6 ± 6.9	65.9 ± 5.9
Maslach Burnout Inventory – Human Services			
EE	26.9 ± 10.4	27.2 ± 10.4	26.3 ± 10.2
DP	9.7 ± 4.2	9.3 ± 3.9	10.4 ± 4.8
PA	38.2 ± 5.1	38 ± 5.1	38.6 ± 5
Evidence-Based Practice Questionnaire-19			
Practice	28.3 ± 7	27.7 ± 6.9	29.6 ± 7
Attitude	17.1 ± 2.7	16.8 ± 2.8	17.5 ± 2.6
Knowledge	45.2 ± 11.2	43.9 ± 11.2	48.2 ± 10.8
Total score	90.6 ± 17.9	88.5 ± 17.6	95.3 ± 17.6

EE: emotional exhaustion; DP: depersonalization; PA: personal accomplishment.

More extensive years of experience was related to a significant association with the task ($r = 0.5$; $p = .003$) and bond subscales ($r = 0.7$; $p = .002$) and the Working Alliance Inventory-Short Form total score ($r = 0.8$; $p < .001$) (Table 3). Correlations identified between the Working Alliance Inventory-Short Form and Maslach Burnout Inventory-Human Services indicated that the goals subscale correlated significantly with all three burnout subscales: positively with personal accomplishment ($r = 0.5$; $p = .003$); and negatively with emotional exhaustion ($r = -0.6$; $p < .003$); and depersonalization ($r = -0.5$; $p < .001$). The task subscale scored only with the personal accomplishment subscale ($r = 0.8$; $p < .001$). The bond subscale was related to emotional exhaustion and depersonalization with the same result ($r = -0.7$; $p < .001$) and to personal accomplishment positively ($r = 0.5$; $p < .001$).

Table 3. Correlation between Evidence-Based Practice Questionnaire-19 and years of work experience and Working Alliance Inventory-Short and Maslach Burnout Inventory – Human Services.

Evidence-Based Practice Questionnaire- 19		Years of work experience			
Practice	Attitude	Knowledge	Total score		
Working Alliance Inventory-Short					
Goals	0.08	0.06	0.03	0.05	-0.06
Tasks	0.7***	0.7***	0.2***	0.4***	0.5**
Bond	0.8***	0.8***	0.2***	0.3***	0.7**
Total score	0.4***	0.3**	0.2***	0.2***	0.8***
Maslach Burnout Inventory-Human Services					
EE	-0.6**	-0.2**	-0.7***	-0.1*	-0.2***
DP	-0.5***	-0.2***	-0.7***	-0.1	-0.1**
PA	0.5**	0.8***	0.7***	0.4***	0.2***

EE: emotional exhaustion; DP: depersonalization; PA: personal accomplishment. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Years of experience also correlated inversely with the emotional exhaustion ($r = -0.7$; $p = .001$) and depersonalization subscales ($r = -0.6$; $p < .001$) of burnout, and directly with the personal accomplishment subscale ($r = 0.7$; $p < .001$).

Correlation analysis between the subscales of the Working Alliance Inventory-Short Form and the Evidence-Based Practice Questionnaire-19 revealed significant associations between the practice component with task ($r = 0.7$; $p = .001$) and bond subscales ($r = 0.8$; $p < .001$). The attitude also revealed significant associations with task ($r = 0.8$; $p = .001$) and bond subscales ($r = 0.7$; $p < .001$).

The multivariable linear regression models demonstrated no association between the

years of work experience, the academic background and the emotional exhaustion with the therapeutic alliance and its components (Table 4). The results showed a relationship between the total score in the Working Alliance Inventory-Short Form ($R^2 = 0.28$) and depersonalization (standardized $B = -0.11$; $p = .03$); personal accomplishment (standardized $B = 0.48$; $p < .001$); practice (standardized $B = 0.08$; $p = .02$); attitude (standardized $B = 0.09$; $p = .02$); and knowledge (standardized $B = 0.11$; $p = .002$). The bond subscale showed significant relationship ($R^2 = 0.38$) with depersonalization (standardized $B = -0.15$; $p = .004$); personal accomplishment (standardized $B = 0.48$; $p < .001$); and attitude (standardized $B = 0.16$; $p = .003$). The goals subscale showed significant relationship ($R^2 = 0.17$) with depersonalization (standardized $B = -0.2$; $p = .04$) and personal accomplishment (standardized $B = 0.24$; $p < .0001$). The task subscale showed significant relationship ($R^2 = 0.28$) with depersonalization (standardized $B = -0.2$; $p = .001$); personal accomplishment (standardized $B = 0.44$; $p < .001$); practice (standardized $B = 0.1$; $p = .03$); and attitude (standardized $B = 0.36$; $p = .005$).

Table 4. Multivariable linear regression models for Working Alliance inventory-Short scores (continuous variables) adjusted for age.

Variable	Total score		Bond		Goals		Task	
	B	Standardi	B	St an	B [95	St an	B [95	Stand
Maslach Burnout Inventory – Human Services								
EE	0.00	0.1	0.0	0.0	0.00	0.0	-0.0	-0.0
	[-0.0		[-0.0		[-0.0		[-0.0	
DP	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
	[-0.0		[-0.0		[-0.0		[-0.0	
PA	0.6	0.0	0.2	0.0	0.1	0.0	0.2	0.4
	[0.5		[0.1		[0.0		[0.1	
Evidence-Based Practice Questionnaire-19								
Practice	0.1	0.0	0.0	0.0	-0.0	-0.0	0.0	0.1
	[0.0		[-0.0		[-0.0		[0.0	
Attitude	0.16	0.0	0.1	0.0	0.0	0.0	0.1	0.3
	[0.0		[0.0		[-0.0		[0.0	
Knowledge	0.08	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
	[0.0		[0.0		[-0.0		[0.0	
Years of experience	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	[-0.0		[-0.0		[-0.0		[-0.0	
Academic	0.6	0.2	0.0	0.0	0.3	0.1	0.2	0.0
	[-0.0		[-0.0		[-0.0		[-0.0	
R^2	0.2		0.3		0.1		0.2	

EE: emotional exhaustion; DP: depersonalization; PA: personal accomplishment; B: Regression coefficient; 95% CI: 95% confidence interval. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Discussion

The aim of this study was to examine the association between EBP competence, level of burnout and socio-demographic variables with the global perceptions of the therapeutic alliance among Spanish physical therapists. The study findings revealed strong associations between burnout, EBP, and years of experience and therapeutic alliance. Specific lower levels of burnout and improved EBP competences are associated with a higher perception of quality of the therapeutic alliance. The results on the therapeutic alliance, obtained only from general physical therapists' perceptions, are difficult to compare with other previous studies in the field of physical therapy, since former studies identify the relationship between the therapeutic alliance and the efficacy of the treatments, and therefore the measurements are carried out on patients (Alodaibi et al., 2021; Bliss, 2010; Schönberger, Humle, and Teasdale, 2006). Lawford et al. (2020) measured the therapeutic alliance of

physical therapists and patients, obtaining higher results than those presented here in all the subscales of the Working Alliance Inventory-Short Form and the total score, with a difference of 5 points in the score of the goal subscale. This finding is noteworthy since in our study this subscale obtained the lowest score, which highlights the difficulty or the limited importance given by Spanish physical therapists to the establishment of joint goals, an important characteristic to understand the needs of patients and to be able to provide person-centered care (Cheng et al., 2016; Zimmermann et al., 2014). Future studies should provide an in-depth analysis of this finding. In relation to burnout scores, it should be noted that these are higher than in populations of physical therapists in other studies (Al-Imam and Al-Sobayel, 2014; Balogun et al., 2002; González-Sánchez et al., 2017; Pavlakis, Raftopoulos, and Theodorou, 2010). Our findings showed a low degree of personal accomplishment and moderate degrees of depersonalization and emotional exhaustion except in women where high degrees of emotional exhaustion were identified. In addition, men scored significantly higher on depersonalization. We found it appropriate to point out the difference in the depersonalization subscale, which consists of distancing the professional from the patient's demands, in order to make these more manageable. This could be related to empathy, an attribute necessary to establish a bond with the patient (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021) and which is inversely related to burnout (Wilkinson, Whittington, Perry, and Eames, 2017). Indeed, in the present study an inverse and significant relationship was identified between depersonalization and the bond subscale. Several studies suggest that female health workers are more empathic (Quince et al., 2016; Rodríguez-Nogueira, Moreno-Poyato, and Álvarez-Álvarez, 2020) which could justify these differences in the depersonalization construct.

Concerning the association of the therapeutic alliance components with sociodemographic variables, a significant association was found between the four outcome variables related with the therapeutic alliance and years of professional experience. This finding is compatible with other studies among nurses, where experience was associated with improvements in treatment and agreements for the establishment of treatment goals and methods (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021, 2021). It is worth highlighting a lower association in terms of the agreement of treatment goals, which may be consistent with the lower score obtained in this subscale. However, having more academic training appears to only be associated with the task subscale. This finding is consistent with previous research which identified that Spanish physical therapists base their postgraduate studies on knowledge of manual therapy (Leirós-Rodríguez, Souto-Gestal, and García-Soidán, 2018); however, they show training deficiencies in skills regarding patient relations that are unfulfilled since their university training.

The results show association between burnout and general physical therapy perceptions of therapeutic alliance. Specially, between depersonalization and personal accomplishment with the Working Alliance Inventory-Short Form total score and personal accomplishment also with bonding and tasks. In relation to depersonalization, previous studies have highlighted negative correlations between this dimension and empathy (Schober, Boer, and Schwarte, 2018; Wilkinson, Whittington, Perry, and Eames, 2017). In this line, empathy is an essential construct for building trust and, therefore, creating a strong bond with patients (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021). Conversely, a low personal accomplishment implies a negative view of oneself, which seems to have consequences both in the development of the intrinsic tasks of physical therapists and in their relationship with patients (Maslach, 2003). Consequently, a health professional with low self-confidence could have difficulties in generating an adequate bond, since self-confidence is a prerequisite or, at least, seems to be an important condition for generating trust in the patient (Morera-Balaguer et al., 2021, 2018). Likewise, professionals

who lack confidence in their treatments will find it difficult to reach agreements with their patients.

The aptitudes for EBP were significantly associated with the degree of therapeutic alliance and, specifically, with the variables bonding and tasks. The association between the attitude toward EBP and the bond of trust with the patient, which, in the context of the therapeutic alliance, is an element with a strong behavioral component, is noteworthy (Bordin, 1979). A greater attitude toward EBP would indicate that physical therapists are open to exploring new treatments, to dialogue and change, that they avoid making judgments in the face of criticism of their actions, and that they try to integrate new opinions. Simultaneously, all these factors have been recognized as important determinants that facilitate the therapeutic alliance and agreement on tasks with patients, as the results of better agreement on tasks are also associated with increased implementation of EBP (Moreno-Poyato, Casanova-Garrigos, Roldán-Merino, and Rodríguez-Nogueira, 2021). Consequently, this could confirm that a higher level of attitude toward EBP and practice of EBP by physical therapists would be necessary to improve the therapeutic alliance and achieve person-centered care through shared decision-making.

This study has several limitations that should be acknowledged. First, the cross-sectional design did not allow us to detect changes over time nor to make causal inferences. Second, it is important to note that physiotherapists' general perceptions of their therapeutic alliance with their patients were assessed; however, their relationship with patients' general perceptions of the therapeutic alliance was not analyzed. In addition, the regression models generated are not able to explain most of the variance of the dependent variables analyzed, so we must recognize that there are more covariates influencing the therapeutic alliance that have not been included in this research. Finally, the authors were unable to calculate the response rate to the survey because we are not aware of how many physical therapists received the survey because some may have had their e-mail address out of date or not communicated to their professional association.

However, this study offers new findings on the perspective of physical therapists regarding the phenomenon of the therapeutic alliance. In this sense, the results of our study contribute to a better understanding of the relationship between the level of burnout, the dimensions of evidence-based practice, and the therapeutic alliance in physical therapists. These findings suggest the need for further in-depth studies on the factors that influence the quality of the therapeutic alliance. Furthermore, it would be advisable to replicate the study on an international scale to confirm these findings and develop strategies to improve the levels of burnout and EBP and consequently to improve the quality of the therapeutic alliance.

In conclusion, this research has identified the strong associations between therapeutic alliance and burnout, EBP, and years of experience. Specifically, lower levels of burnout and better EBP competencies are associated with a therapeutic alliance of higher quality. The association of attitudes toward EBP, a higher level of self-confidence, and a lower perception of depersonalization among physical therapists in the professional setting are determinant factors for establishing a better therapeutic alliance with patients. It is important to note that more academic training does not significantly associate with the degree of therapeutic alliance.

These findings should be addressed by academic institutions and university teachers in the area of physical therapy to promote the acquisition of skills and abilities for the professional development of physical therapists in clinical settings in order to more effectively meet patient demands. It should be noted that the internal consistency and validity of the Working Alliance Inventory-Short varies according to the sample analyzed and should be taken into account if the results obtained are extrapolated to other populations.

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