

Original Article

Design and validation of the professional identity scale for occupational therapists

Desenvolvimento e validação da escala de identidade profissional para terapeutas ocupacionais

Ana-Isabel Souto-Gómez^{a,b} , Miguel-Ángel Talavera-Valverde^{b,c,d} , María-del-Pilar García-de-la-Torre^c , Luis-Javier Márquez-Álvarez^{c,e}

How to cite: Souto-Gómez, A.-I., Talavera-Valverde, M.-Á., García-de-la-Torre, M.-P., & Márquez-Álvarez, L.-J. (2025). Design and validation of the professional identity scale for occupational therapists. *Cadernos Brasileiros de Terapia Ocupacional, 33*, e3948. https://doi.org/10.1590/2526-8910.cto404439482

Resumo

Introdução: A identidade profissional é um constructo complexo e altamente contextualizado, influenciado por fatores educacionais, sociais e culturais. No campo da terapia ocupacional, existe uma necessidade crescente de instrumentos específicos que permitam avaliar essa identidade ao longo do desenvolvimento profissional. Contudo, os instrumentos atualmente disponíveis apresentam limitações, especialmente em contextos como o da Espanha, onde a profissão possui características próprias. Objetivo: O objetivo deste estudo foi desenvolver e validar a Escala de Identidade Profissional em Terapia Ocupacional (OT-PIS) em uma amostra de profissionais atuantes na Espanha. **Método:** Foi realizada uma análise fatorial para construir e validar a OT-PIS. A amostra incluiu n=365 terapeutas ocupacionais divididos em duas metades para cada parte da análise. O questionário foi dividido em quatro seções: dados sociodemográficos e profissionais, a escala OT-PIS, a Escala de Identidade Profissional de MacLeod e o questionário de Ashby. **Resultados:** Os resultados demonstraram alta confiabilidade da escala (alfa de Cronbach = 0,845; KMO = 0,843). A análise fatorial confirmatória (AFC) validou a estrutura de dois fatores, com índices de ajuste adequados. Conclusão: O fator "Pertencimento" apresentou uma relação mais forte e significativa com as variáveis dependentes em ambos os modelos de regressão, destacando seu papel central na construção da identidade profissional. A OT-PIS mostra-se um instrumento válido e confiável para avaliar a identidade profissional de terapeutas ocupacionais, oferecendo contribuições valiosas para futuras pesquisas e práticas na área.

Palavras-chave: Identificação Social, Terapia Ocupacional, Exercício Profissional.

Received on Sept. 17, 2024; 1st Revision on May 23, 2025; Accepted on July 4, 2025.



This is an Open Access article distributed under the terms of the Creative Commons Attribution license (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

^aEscola Universitaria de Traballo Social, Universidade Santiago de Compostela, Santiago de Compostela, Spain.

^bIntegra Saude Unit Research, Universidade da Coruña, A Coruña, Spain.

[°]Universidade da Coruña, A Coruña, Spain.

^dComplejo Hospitalario Universitario de Ferrol, Ferrol, Spain.

^eGalicia Sur Health Research Institute – IIS Galicia Sur, Vigo, Spain.

Abstract

Introduction: Professional identity is a complex and contextual construct, influenced by educational, social, and cultural factors. In the field of occupational therapy, there is a growing need for specific tools that can assess this identity throughout professional development. However, current instruments have notable limitations, especially in contexts such as Spain, where the profession has particular characteristics. Objective: The aim of this study was to develop and validate the Occupational Therapy Professional Identity Scale (OT-PIS) in a sample of occupational therapy professionals in Spain. Method: A factor analysis was conducted to construct and validate the OT-PIS scale. The sample consisted of n=365 professionals divided in two halves for each part of the analysis. The questionnaire included four sections: sociodemographic and professional data, the OT-PIS scale, The MacLeod Professional Identity Scale, and the Ashby questionnaire. Results: The results indicate high reliability of the scale (Cronbach's α=0.845; KMO=0.843). Confirmatory Factor Analysis (CFA) supported the two-factor structure through acceptable goodness-of-fit indices. Conclusion: The "Belonging" factor showed a stronger and more significant relationship with the dependent variables in both regression models, underscoring its key role in the construction of professional identity. The OT-PIS is a valid and reliable instrument for assessing professional identity in occupational therapists, offering valuable insights for future research and practical application.

Keywords: Social Identification, Occupational Therapy, Practice, Professional.

Background

Professional identity, understood as the core perception of oneself as a professional, is constructed from beliefs, values, motivations, attributes, and experiences (Healey & Hays, 2012; Hurt-Avila & Castillo, 2017). According to Nugent & Jones (2009), this identity arises from the fusion between personal identity and the specific characteristics of the professional field, evolving through professional interactions, knowledge acquisition, and skill and value development. Beyond being key to professional success, identity encompasses practices, philosophies, beliefs, and ethical codes that can sometimes generate conflicts when personal values clash with professional expectations (Colley et al., 2007; Smith & Robinson, 1995).

Context and challenges in occupational therapy

In occupational therapy, the construction of professional identity is especially complex and has been subject to debate both within and outside the discipline (Talavera-Valverde, 2013). The literature describes the profession as lacking a clear and shared identity narrative, generating perceptions of ambiguity, fragmentation, and low social and institutional visibility (Souto-Gómez et al., 2023a, 2023b). This situation has historical roots, linked to the profession's development in different countries under heterogeneous conceptual frameworks, often influenced by other disciplines such as medicine, psychology, or physiotherapy. Consequently, occupational therapy has faced tensions between the need to legitimize itself within

hegemonic biomedical systems and its distinctive proposal centered on occupation as the therapeutic core (Moruno-Miralles & Talavera-Valverde, 2007).

This ambivalence manifests in difficulties clearly delimiting its field of action, the coexistence of multiple theoretical frameworks, and the absence of a univocal professional definition (Souto-Gómez et al., 2023b). Various authors have noted that occupational therapists may experience uncertainty regarding their professional role, especially when interacting with other health professionals, which can lead to feelings of invisibility, lack of recognition, or even an "identity crisis" within clinical or institutional settings. Furthermore, there is a mismatch between the theoretical vision taught in educational programs—based on a holistic perspective focused on occupation and meaningful participation—and real practice, often constrained by healthcare system logics, labor regulations, and interdisciplinary work demands (Souto-Gómez et al., 2023a, 2023b, 2023c).

This tension between theory and practice, combined with the constant need to justify its specific contribution in contexts dominated by other professions, has led to defining occupational therapy as a "professional space in dispute," in permanent construction and still seeking to consolidate its identity vis-à-vis other disciplines (Durocher & Kinsella, 2021; Lecours et al., 2021; Souto-Gómez et al., 2023b). This situation affects not only how professionals represent themselves but also conditions processes of training, labor insertion, and continuous professional identity development throughout their careers.

Training and professional identity development

Matthews et al. (2019) characterize professional identity as a shared set of attitudes, values, knowledge, and skills within a professional group, which transforms over time (Walder et al., 2022). Its development involves acquiring professional knowledge, understanding ethical demands, and strengthening moral practice (Dige, 2009; Trede et al., 2012). Healey & Hays (2012) and Hurt-Avila & Castillo (2017) also emphasize the role of individual experiences and social relationships in shaping this identity.

The concept of professional identity (Beijaard et al., 2004; Olesen, 2001) is linked to recognizing distinctive traits and self-awareness, as well as relationships with others and understanding differences. It is intertwined with social practices and relationships, defining the belonging and status of individuals and groups in society. Understanding identity involves examining how groups shape reality through symbolic and material processes (Olesen, 2001; Walder et al., 2022).

Professional identity is shaped through past interactions with people, languages, and sociocultural elements, expressed through discourses and practices that transform external norms, values, and work methods into personally meaningful constructs (Monrouxe, 2010; Holland, 1998). This shared identity among professionals serves as a foundation for future interactions, fostering a dynamic existence, ongoing development, and transformation throughout the professional lifespan (Wenger, 1998; Holland, 1998; Monrouxe, 2010).

Understanding how educational institutions influence learning and professional identity formation is essential. While completing a university program provides the necessary

knowledge and skills for professional practice (Beagan, 2001; Souto-Gómez et al., 2023c), this alone does not guarantee the consolidation of professional identity (Tan et al., 2017). Identity formation begins with socialization, which can start even before choosing a career and evolves continuously through vocational training and professional experience (Adams et al., 2006; Sutherland et al., 2010; Weaver et al., 2011; Pillen et al., 2013; Stockhausen, 2005).

The formation of professional identity is a complex and dynamic process that integrates cognitive, emotional, and social aspects related to individuals' perception of and identification with their profession and colleagues (Brandford et al., 2022; Sun et al., 2021). In the field of occupational therapy, understanding the relationship between expectations prior to professional practice and identity construction is fundamental to fostering the development of committed and satisfied professionals in their roles (Bowman et al., 2022; Brandford et al., 2022; Talavera-Valverde, 2013). Clarity regarding the tasks, skills, environments, and activities specific to the profession during academic training facilitates this process, promoting a sense of belonging and long-term commitment (Cruess et al., 2019). Likewise, encouraging spaces for dialogue and reflection between teachers and students is considered crucial for creating an enriching learning environment where experiences and perspectives are shared, contributing to the consolidation of professional identity (Brown et al., 2020; Silveira et al., 2019).

Career choice, influenced by upbringing and education, responds to both primary and secondary factors, and valuing learning strengthens autonomy, commitment, enjoyment, and perseverance during training (Berger & Luckmann, 1991; Ryan & Connell, 1989; Ryan & Deci, 2003; Souto-Gómez et al., 2023c). A clear vocational preference enhances student engagement and facilitates the development of a strong professional identity (Vansteenkiste et al., 2005).

Personal role models, such as family or friends within the profession, play a significant role in professional success. During training, access to role models bridges theory and practice, demonstrating expected professional reasoning and behaviors, while critiques and feedback help refine students' thought patterns (Beagan, 2001; Dall'Alba, 2009; Monrouxe, 2010; Ottewil, 2002; Goldie et al., 2007; Ajjawi & Higgs, 2008; Beckett & Gough, 2004; Timmerman, 2009; Finn et al., 2010; Fitzpatrick et al., 1996; Hunter et al., 2007; Ibarra, 1999).

Specific characteristics in occupational therapy

In occupational therapy, professional identity is a multifaceted construct involving workplace interactions with other professionals and self-differentiation that deepens through practice, skills acquisition, and internalization of core professional values (Adams et al., 2006; Creek, 2003). This identity is uniquely characterized by its focus on occupation as both a means and an end in therapy, a holistic understanding of the human being as an occupational being, and a profound appreciation of the individual's culture, context, and uniqueness. Unlike other health professions, occupational therapy aims to promote meaningful participation in everyday activities within diverse sociocultural environments, recognizing the wide diversity in ways of living and doing.

Professional development and identity consolidation

After completing university studies, occupational therapists must consolidate themselves as autonomous professionals. Developing self-efficacy—understood as the belief in one's ability to face future situations—is essential, as it directly influences perseverance, effort, and confidence in performance (Bandura & Schunk, 1981; Zimmerman & Kitsantas, 1999; Zimmerman & Ringle, 1981). Real professional practice often presents new and challenging situations, requiring continuous training to maintain competence (Walder et al., 2022), a key aspect for the ongoing development of professional identity. Additionally, participation in professional associations strengthens this identity by deepening understanding of occupational therapists' roles and functions (Souto-Gómez et al., 2023a).

Measuring professional identity in occupational therapy

Professional identity scales vary among disciplines but lack longitudinal exploration tools specific to occupational therapy (Barbour & Lammers, 2015; Bebeau & Monson, 2012; Cheung, 2008; Crossley & Vivekananda-Schmidt, 2009; Swisher et al., 2004).

Despite the growing importance given to professional identity in occupational therapy, there are few instruments specifically designed or validated to measure this identity in local contexts such as the Spanish one. Most available tools come from other countries and disciplines, and tend to focus on students or partial stages of the professional trajectory, which limits their applicability for evaluating professional identity in occupational therapists throughout their entire careers. Therefore, it is necessary to develop contextualized instruments that allow for a more precise and comprehensive understanding of this phenomenon in Spain.

Existing scales are unsuitable for this purpose, as they were designed with different objectives (Adams et al., 2006; Dobrow & Higgins, 2005; Tan et al., 2017). Facing this gap, this study proposes to establish a solid foundation for professional identity research in occupational therapy.

It is expected that identity development occurs at least in three stages: before, during, and after university education. Therefore, the aim of this study is to develop a scale with a validated construct based on these phases.

Currently, available tools to explore professional identity in occupational therapy are limited and primarily focus on student development rather than professionals' progression (Clarke et al., 2014; Derakhshanrad et al., 2022; Ikiugu & Rosso, 2003; Mak et al., 2022; Walder et al., 2022). One of the few instruments designed specifically for occupational therapists is the Professional Identity Questionnaire (PIQ), evaluated by Scanlan (2018) in the Australian context. Although it represents an important contribution, it was conceived within a specific cultural and educational framework that differs significantly from the Spanish context, particularly in terms of professional training models, healthcare systems, and sociocultural influences. Consequently, the PIQ does not encompass the full complexity of professional identity across its different stages (before, during, and after university education) nor its application in diverse cultural and professional contexts. Furthermore, it lacks the fundamental contextual and longitudinal dimensions necessary to understand the evolution of professional identity throughout the occupational

therapist's career. Thus, although the PIQ is a valuable precedent, it reinforces—rather than resolves—the need for more comprehensive and context-sensitive tools.

The professional identity of occupational therapists in Spain is influenced by a range of sociocultural, educational, and healthcare system factors specific to the country. Unlike other international contexts where the profession is more consolidated and homogeneous, occupational therapy in Spain is characterized by significant diversity in training programs, variable professional recognition, and particular challenges for integration within the healthcare system. These particularities shape a unique way in which occupational therapists construct their professional identity, generating specific challenges and opportunities. Therefore, it is essential to develop evaluation instruments that reflect these singularities to allow for a more accurate and contextualized analysis of professional identity in the country.

The present study aims to address this need by creating and validating a new instrument specifically designed for occupational therapy that contemplates the progressive development of professional identity before, during, and after university education.

Materials and Methods

This study utilized a factor analysis design to thoroughly investigate the underlying structure and validate the construct of the scale.

Participants

Quota and convenience sampling were used to recruit active professional occupational therapists who voluntarily participated in the study. Contact with professional associations and colleges facilitated recruitment, which began in December 2022 and continued until June 2024 for the final validation. Inclusion criteria included occupational therapists who were registered with a Spanish professional association, were actively practising in a clinical, community, educational or research setting within Spain, had at least six months of post-registration experience, and gave informed consent; exclusion criteria were undergraduate students, retired or unemployed therapists and professionals on extended leave. Duplicate submissions and questionnaires with missing data were excluded.

A total of 365 individuals were recruited after discarding incomplete questionnaires, divided in n=183 individuals for first part of the analysis and n=182 for the final part. Of these, 85.2% were women (n=311), 14.5% were men (n=53), and 0.3% were non-binary (n=1). Ages ranged from 20 to 61 years (M=34.31 years, SD = 8.269 years). Work experience as an occupational therapist ranges from 0 to 40 years (M=10.93; SD=7.56).

Procedure

This study builds upon a previous study (Souto-Gómez et al., 2023b) that gathered 40 statements from literature research and expert input. Using these results, a cross-sectional form was developed to assess professional identity and related factors.

In December 2022, the form was created on the Microsoft Forms platform and distributed via occupational therapy professional associations in Spain.

The necessary sample size was determined taking into account two processes. According to the 2023 release of the *Estadística de Profesionales Sanitarios Colegiados* (Instituto Nacional de Estadística, 2024), universe included by N=8423 occupational therapists were registered in Spain on 31 December 2023. For the creation and validation of the measurement tool, an n>100 was required to provide stability to the factor analysis using Pearson correlations (Ferrando et al., 2022) for each subsequent analysis (a total of n>200). Additionally, guidelines for factor analysis typically recommend a minimum sample size of 5-10 participants per item (Costello & Osborne, 2005), ensuring robustness of the factor analysis results.

An initial sample of n=45 occupational therapists was used for a pilot test, which was not included in the final analyses. After this step, the first set of results was collected in January 2023. Prior to analysis, incomplete questionnaires were discarded. The initial sample (n=183) was used for exploratory factor analysis (EFA), while results collected up to June 2024 (n=182) were used for confirmatory factor analysis (CFA) and validation of the scale (Figure 1).

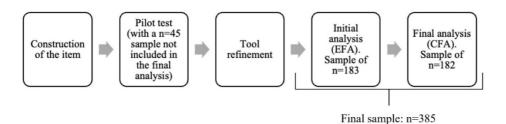


Figure 1. Flow diagram of the process.

Participants voluntarily consented to take part in the study after being informed about the project's objectives and methodology. Socio-demographic variables were collected for data analysis, ensuring strict anonymity to prevent identification of individuals. This research follows the recommendations of protection of personal data and guarantee of digital rights, the Declaration of Helsinki and was approved by the University of A Coruña's Ethics Committee, with number 2022-001.

Construction of the item

A two-part form was created for initial data collection: one section gathered sociodemographic and professional information, while the other contained the Occupational Therapist's Professional Identity Scale (OT-PIS). Sociodemographic data encompassed age, gender, job tenure, alma mater, familial ties to occupational therapy, involvement in professional associations, work sectors, and years of experience in each sector. Professional identity was delineated through literature review, expert interviews, and examination of existing occupational therapy scales. Drawing from Souto-Gómez et al.'s (2023b) Q-sort method, the OT-PIS was developed.

The instrument underwent expert review to enhance content and construct validity. Subsequently, it was pilot-tested with 45 occupational therapists to ensure clarity and comprehension (Edwards & Dirette, 2010). After achieving satisfactory reliability (α >0.7), the scale was refined into its final version, featuring Likert-type scale responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) for various identity-related statements. A five-category format was chosen because it maximizes score variance, remains cognitively manageable for respondents, and matches the response options used in established professional-identity instruments (Johnson & Morgan, 2016)

Based on the framework presented in the Introduction, the initial instrument comprised four different parts, reflecting the significant role of education in shaping the professional identity of occupational therapists. These subscales were designed to revolve around this central concept:

- (a) Job satisfaction and knowledge of the profession: To evaluate professional identity in occupational therapy, it would be valuable to include items assessing job satisfaction and knowledge of the profession. Job satisfaction items can gauge an individual's perception of fulfillment and reward in their work, which influences professional identity. Likewise, measuring knowledge of the profession can provide insights into one's understanding of occupational therapy's role and expertise level, contributing to professional identity. Incorporating these factors would enhance the OT-PIS by offering a more comprehensive assessment with ten items;
- (b) Professional identity development before starting the studies: The development of professional identity starts with professional socialization, which can begin before a career choice (Adams et al., 2006; Sutherland et al., 2010; Weaver et al., 2011). To account for potential variability before starting occupational therapy studies, nine items were included in the assessment;
- (c) Professional identity development during the studies: During their studies, occupational therapy students learn from professional role models, bridging theoretical knowledge with real-world practice. Observing professionals' approaches to professional issues helps students understand the essence of being a professional and how to adapt to the role of an occupational therapist. To gain insights into an individual's professional identity, it is beneficial to include items that assess the development of professional identity during their studies (Ajjawi & Higgs, 2008; Beckett & Gough, 2004; Finn et al., 2010; Fitzpatrick et al., 1996; Goldie et al., 2007; Hunter et al., 2007; Ottewil, 2002; Timmerman, 2009);
- (d) Professional identity development in the practice of the profession: Occupational therapists must become autonomous professionals after completing their university training, and this requires developing self-efficacy (Bandura, 1982; Bandura & Schunk, 1981; Zimmerman & Kitsantas, 1999; Zimmerman & Ringle, 1981). Having confidence in their ability to perform effectively is crucial for professionals. The reality of encountering unfamiliar situations in daily practice underscores the need for continuous training to enhance competence (Walder et al., 2022). By including items that assess self-efficacy and continuous learning, this assessment can offer insights into individuals' adaptability to new situations and their commitment to professional development.

After EFA was finished, second questionnaire was developed in May 2024, complementing the final version of the scale (9 items) for the CFA with two additional scales for the external validation of the professional identity construct, based on reviewers' feedback on the initial research. This second form was distributed until a similar sample size to EFA was achieved to conduct the CFA. In addition to the two initial parts, we selected The MacLeod Professional Identity Scale (Adams et al., 2006; Matthews et al., 2019), and the Professional Identity Questionnaire developed by Ashby et al. (2016) due to their similar response formats, previous validation in health sciences-related populations, and ease of accessibility. Both instruments have demonstrated adequate psychometric properties and were used in this study to examine the convergent validity of the newly developed OT-PIS.

The MacLeod Professional Identity Scale (Adams et al., 2006; Matthews et al., 2019) is an 8-item Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). It was validated through an EFA with an internal reliability of Cronbach's $\alpha = 0.79$. The questionnaire used by Ashby et al. (2016) was adapted from a prior survey to investigate the influence of curriculum content on professional identity in one undergraduate program and the Professional Identity Questionnaire developed by Edwards & Dirette (2010) to explore professional identity in occupational therapists. For the purpose of this study, it showed an internal reliability of Cronbach's $\alpha = 0.743$. These scales were considered suitable because they use a 1 to 5 rating scale, similar to our scale, which facilitates comparisons in the validation process.

Data analysis

Scale validation included factor analysis on the final sample, split into two halves. EFA was conducted the first half of the final sample, and CFA was performed on the second half (Timmerman & Lorenzo-Seva, 2011).

The exploratory factor analysis (EFA) was conducted using the Factor software, employing Pearson correlation as the analysis method (Lorenzo-Seva & Ferrando, 2022). Robust Diagonally Weighted Least Squares (RDWLS) was chosen as a method for factor extraction, suitable for Likert-type variables and small sample sizes, considering the large number of items in this study (Ferrando et al., 2022; Fraser & McDonald, 1988). No items required reversing. The analysis involved 1000 bootstrap samples, and Robust Promin rotation was utilized (Lorenzo-Seva & Ferrando, 2019). Items that reduced Cronbach's α level were eliminated after the initial analysis, followed by those with a factor loading <0.3. Additionally, item communalities were assessed, removing those with a value <0.4 from the analysis.

CFA was performed using JASP 0.16.3 software on the second half of the sample, assessing fit with the DWLS method. The analysis examined first and second order factors, with fit indices including CFI, TLI, RMSEA, SRMR, GFI, and NNFI. Acceptable fit criteria included CFI and NNFI >0.90 and RMSEA <0.08.

A second-order factor analysis was conducted using CFA to assess the model fit and relationship between confirmed subscales. The subscales were treated as first-order factors, while the overall professional identity served as the second-order factor. Model fit was evaluated using CFI, TLI, NNFI, and RMSEA fit indices.

Construct validity was assessed through correlation indices between the factor scores of the scale and the two external scales: The Ashby questionnaire (Ashby et al., 2016) and The MacLeod Professional Identity Scale (Adams et al., 2006; Matthews et al., 2019). Additionally, regression analyses were performed to determine the predictive validity of the scale factors concerning the external scales. This dual approach ensured that the new scale accurately measured the intended construct and demonstrated the expected relationships with established measures of professional identity.

Results

OT-PIS emerged as a deliberately concise, nine-item questionnaire that can be completed in busy clinical or educational settings in under two minutes. Each item is rated on a five-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree"). Instructions direct respondents to consider their current practice context—whether that be the first month after graduation or advanced specialist practice. Consequently, scores are sensitive to developmental stage while remaining comparable across cohorts. Responses are summed to yield a total score ranging from 9 to 45; higher values reflect a stronger, clearer professional identity. Because the OT-PIS provides a dimensional profile rather than a pass/fail cut-off, educators, managers and researchers can benchmark groups, identify development needs or even evaluate programs aimed at fostering identity formation.

Exploratory factor analysis results for OT-PIS

The reliability of the initial set of questions was McDonald's ω =0.861 with a 95%CI=(0.82, 0.903) and Cronbach's α =0.873, with a 95%CI=(0.83, 0.907). The results of the factor analysis showed a KMO=0.775 with a 95%CI=(0.545, 0.823). The results showed three possible first-order factors that accounted for a total of 48.436% of the variance in the actual data when the 95th percentile was considered, and four factors if the mean was considered. The factor analysis was repeated to delineate the four possible factors, with optimal robust goodness of fit statistics after Losefer correction (Lorenzo-Seva & Ferrando, 2022). However, the communalities of some items <0.4 and the presence of factors with a loading <0.3 suggested a readjustment of the analysis.

The final analysis with 9 items in only two factors yielded a Bartlett's statistic=958.9 (df =36; p<0.001) and a KMO=0.843 with a 90% confidence interval=(0.786, 0.858). The reliability of this final set of items yielded Cronbach's α =0.845 with a 95%CI=(0.806, 0.878) and McDonald's ω =0.817 with a 95%CI=(0.778,0.857). The items grouped into these two first-order factors explained a total of 77.535% of the variance in the data. Table 1 presents the included items and their factor loadings and Table 2 the Pearson's correlation matrix of the items. The OT-PIS was originally developed and administered in Spanish. For reporting purposes, items in Table 1 were translated into English using a standard forward–backward translation procedure involving two independent bilingual translators. This translation aimed to ensure conceptual clarity for international readers, not to validate the instrument for use in English-speaking populations.

Table 1. Final OT-PIS configuration with factor loadings and communality on each item.

Item	English translation	F1	F2	Communality
 Ser terapeuta ocupacional me hace feliz. 	Being an occupational therapist makes me happy		-0.067	0.477
He desarrollado una identidad profesional clara	I have developed a clear professional identity.	0.655	-0.016	0.420
3. Me siento miembro de esta profesión	I feel like a member of this profession.	0.836	0.038	0.728
4. Puedo identificarme positivamente con otros y otras terapeutas ocupacionales	I can positively identify with other occupational therapists.	0.908	0.035	0.854
5. Siento que comparto características con otros miembros de la profesión.	I feel that I share characteristics with other members of the profession.	0.916	-0.026	0.820
6. Como terapeuta ocupacional, aprovecho bien mi competencia.	As an occupational therapist, I make good use of my competence.	0.752	-0.040	0.540
7. Durante mis estudios, sabía qué tipo de teorías iban a forma parte de mi actividad laboral	During my studies, I knew what types of theories would be part of my professional activity.	-0.168	0.762	0.497
8. Durante mis estudios, sabía qué tipos de entornos iban a forma parte de mi actividad laboral	During my studies, I knew what types of settings would be part of my professional activity.	0.007	0.811	0.663
 Durante mis estudios, sabía qué tipo de intervenciones iban a forma parte de mi actividad laboral 	During my studies, I knew what types of interventions would be part of my professional activity.	-0.006	0.849	0.716

F1: Factor "Belonging"; F2: Factor "Past expectations".

Table 2. Correlations Between OT-PIS Factors and External Scales.

	Mean (SD)	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Item 1	4.393 (0.869)	1								
Item 2	3.918 (1.037)	0.572** (0.000)	1							
Item 3	4.443 (0.899)	0.542** (0.000)	0.463** (0.000)	1						
Item 4	4.339 (0.855)	0.514** (0.000)	0.459** (0.000)	0.812** (0.000)	1					
Item 5	4.355 (0.825)	0.486** (0.000)	0.464** (0.000)	0.779** (0.000)	0.857** (0.000)	1				
Item 6	4.098 (0.944)	0.562** (0.000)	0.569** (0.000)	0.576** (0.000)	0.605** (0.000)	0.597** (0.000)	1			
Item 7	2.525 (1.222)	0.053 (0.477)	0.117 (0.116)	0.123* (0.098)	0.150* (0.043)	0.141* (0.057)	0.127* (0.088)	1		
Item 8	3.230 (1.125)	0.210** (0.004)	0.223** (0.002)	0.323** (0.000)	0.296** (0.000)	0.231** (0.002)	0.170* (0.021)	0.528** (0.000)	1	
Item 9	2.896 (1.122)	0.228** (0.002)	0.224** (0.002)	0.345** (0.000)	0.375** (0.000)	0.295** (0.000)	0.222** (0.002)	0.597** (0.000)	0.676** (0.000)	1

^{*}Significative correlation with p<0.05. **Significative correlation with p<0.01.

The goodness-of-fit indices demonstrate an optimal fit to the data, with values of CFI=0.978 and NNFI=0.958. The value that did not fit well with the model was the RMSEA=0.129 with a 90%CI=(0.0727, 0.1703). This discrepancy could be attributed to several reasons, such as inadequate fit to the data or departure from multivariate normality assumptions. While 0.1 is often used as a cutoff, slightly higher values can be acceptable, considering factors like sample size and model complexity (Hu & Bentler, 1999). Given the satisfactory results of CFI and NNFI in the EFA, we proceeded with the CFA using the current model.

In terms of theoretical content, the items effectively distinguished between two factors. The first factor, labeled "Past expectations", encompasses understanding and confidence in occupational therapy tasks, skills, environments, and activities prior to completing studies. It focuses on pre-existing perceptions of profession-related expectations and requirements.

The second factor, "Belonging", addresses personal and present perceptions of connection and identity within the profession, including happiness, satisfaction, emotional attachment, and a sense of purpose as an occupational therapist.

Confirmatory factor analysis results for OT-PIS

The two-factor model was tested and demonstrated a good fit to the data (X2=49.662; DF=25; p=0.002). "Factor Belonging" showed an R2 value of 0.353, and Factor "Past expectations" showed an R2 value of 0.413 in the final model. The results of the confirmatory analysis indicated an acceptable fit of the proposed model, with the following goodness-of-fit indices (Table 3). These values suggest that the adjusted model fits well with the data and that the factors included in the scale have a significant relationship with the professional identity of the occupational therapist.

Table 3. CFA Goodness-of-Fit Indices for the two-factor structure of the OT-PIS.

	CFI	TLI	RMSEA	SRMR	GFI	NNFI
Criterial values	≥0.95	≥0.95	≤0.10	≤0.08	≥0.95	≥0.95
Two-Factor model	0.997	0.996	0.074	0.066	0.996	0.996

Comparative Fit Index (CFI); Tucker-Lewis Index (TLI); Root Mean Square Error of Approximation (RMSEA); Standardized Root Mean Square Residual (SRMR); Goodness of Fit Index (GFI); Non-Normed Fit Index (NNFI).

Given the high correlation between both factors, a second-order factor was performed after the CFA. The first-order factors were treated as indicators of professional identity, which was considered as the latent factor. The results indicated a significant positive relationship between the first-order factors and the second-order factor, with regression coefficients of 0.739 and 0.839 (standardized values of 0.59 and 0.64) respectively (p<0.01).

These results collectively suggest that the overall professional identity is composed of the first-order factors identified in the exploratory and confirmatory factor analyses (Figure 2).

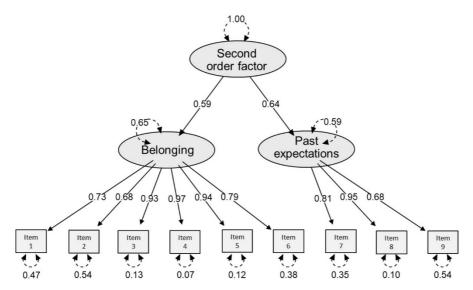


Figure 2. Confirmatory factor analysis model of the Occupational Therapist Professional Identity Scale with standardized values.

Correlational analysis and construct validity

After the model was confirmed, a descriptive and correlational analysis was taken with the full sample, comprised a total of n=365 occupational therapists. Construct validity was assessed through correlation indices between the factor scores of the OT-PIS and the two external scales: The Ashby questionnaire (Ashby et al., 2016) and The MacLeod Professional Identity Scale (Adams et al., 2006; Matthews et al., 2019). The OTPIS comprises two factors along with a total score, which is the mean of the two factors. Descriptive statistics for the two factors of OTPIS, The MacLeod Professional Identity Scale (Adams et al., 2006; Matthews et al., 2019) and The Ashby questionnaire (Ashby et al., 2016) are presented in Table 4. Due to violations of normality assumptions in the data, Spearman's Rho was used for correlation analysis.

The OT-PIS "Past expectations" factor showed a significant positive correlation with The Ashby questionnaire (Ashby et al., 2016) (ρ =0.368, p<0.01) and the MacLeod scale (Adams et al., 2006; Matthews et al., 2019) (ρ =0.294, p<0.01). This indicates that "Past expectations" as measured by OTPIS are moderately related to professional identity as assessed by The Ashby questionnaire (Ashby et al., 2016) and The MacLeod scales (Adams et al., 2006; Matthews et al., 2019). However, the Belonging factor displayed a strong positive correlation with the Ashby questionnaire (Ashby et al., 2016) (ρ =0.680, p<0.01) and an even stronger correlation with the MacLeod scale (Adams et al., 2006; Matthews et al., 2019) (ρ =0.849, p<0.01). This suggests that the sense of belonging is highly associated with professional identity. The overall professional identity score correlated significantly with both the Ashby questionnaire (Ashby et al., 2016) (ρ = 0.603, p < 0.01) and The MacLeod scale (Adams et al., 2006; Matthews et al., 2019) (ρ =0.635, p<0.01). These high correlations demonstrate the convergent validity of the OTPIS total score with established measures of professional identity.

Measurement	Mean	Std. Error	Median	Interquartile Range
OTPIS-Past expectations	2.883	0.073	3.000	1.500
OTPIS-Belonging	4.171	0.055	4.300	1.100
OTPIS–Total mean	3.527	0.051	3.550	0.875
MacLeod scale	4.426	0.047	4.625	0.938
Ashby questionnaire	3.693	0.042	3.750	0.833

Table 4. Descriptive analysis of the professional identity core measurements.

To further evaluate construct validity, linear regression analyses were performed to predict scores on The Ashby questionnaire (Ashby et al., 2016) and The MacLeod Scale (Adams et al., 2006; Matthews et al., 2019) scales using the factors of the OT-PIS. The regression model explained 50.1% of the variance in The Ashby questionnaire (Ashby et al., 2016) scores (R2=0.501, p<0.01). A similar regression analysis was performed with The MacLeod scale (Adams et al., 2006; Matthews et al., 2019) as the dependent variable and both factors as predictors.

Table 5. OT-PIS regression analysis models with MacLeod scale and Ashby questionnaire.

Dependant variable	Predictor	В	Standard error	Beta	t	p	R2	F	p (ANOVA)
Asbhy	Constant	1.357	0.176	-	7.689	< 0.001	0.501	90.385	< 0.001
	Past expectations	0.121	0.032	0.211	3.851	< 0.001	-	-	-
	Belonging	0.476	0.042	0.619	11.284	< 0.001	-	-	-
MacLeod	Constant	1.368	0.142	-	9.622	< 0.001	0.725	477.135	< 0.001
	Belonging	0.733	0.034	0.851	21.843	< 0.001	-	-	-

While "Belonging" was a significant predictor, "Past expectations" was marginally significant (p>0.05). The regression model explained 72.5% of the variance in The MacLeod scale (Adams et al., 2006; Matthews et al., 2019) scores (R2=0.725, p<0.01). Both models are summarized in Table 5.

Discussion

The aim of the present study was to create and validate a specific tool to measure professional identity in occupational therapists. As mentioned in the introduction, there is a significant lack of validated tools specifically designed to measure professional identity among occupational therapists in the Spanish context. This gap limits a comprehensive understanding of how professional identity is constructed and evolves within our particular cultural and educational reality. Because the OT-PIS yields a graded measure—not a binary "have/do not have" outcome—repeat administrations can track professional-identity growth from graduation through advanced practice and pinpoint areas, such as belonging, that might benefit from targeted mentoring.

The development and validation of the OT-PIS respond to this need by providing an adapted instrument that allows exploration of professional identity across different stages

and dimensions, from pre-study expectations to consolidation in professional practice. This contributes to closing the gap highlighted by previous studies (Morrison et al., 2018; Talavera-Valverde, 2008), offering a solid foundation for future research and practical applications in Spain and similar contexts.

The OT-PIS was developed specifically for the Spanish context, which is characterized by heterogeneity in training programs, variable professional recognition, and the particular influence of the national healthcare system. These characteristics significantly affect how occupational therapists construct and experience their professional identity. Therefore, although international instruments like the Professional Identity Questionnaire (PIQ) used in Australia exist, they do not fully capture the complexities and specificities of the Spanish context. Consequently, the development of a tool adapted to the national context, such as the OT-PIS, is essential to enable a comprehensive and accurate exploration of professional identity in Spain.

The OT-PIS showed a two-factor structure explaining 77.5% of the total variance, named "Belonging" and "Past expectations." The "Belonging" factor reflects identification, personal satisfaction, and a sense of belonging to the profession, while "Past expectations" encompasses prior understanding of theories, settings, and interventions in occupational therapy. Confirmatory factor analysis supported this model with excellent fit indices (CFI=0.997; TLI=0.996), and both factors demonstrated high internal reliability (\$\alpha\$>0.81). Convergent validity was confirmed through significant correlations with recognized external scales. Regression analyses indicated that "Belonging" is a strong predictor of professional identity, explaining up to 72.5% of the variance in one of the assessed scales. These results not only corroborate previous findings on the importance of a sense of belonging in professional identity but also extend the literature by providing a specific and validated tool for the Spanish context, allowing for a deeper understanding of the formation and consolidation of professional identity among occupational therapists.

Furthermore, although the OT-PIS was designed and validated for the Spanish context, its structure based on universal factors of professional identity suggests it could be adapted and used in other cultural and professional contexts. With appropriate linguistic and cultural adaptation and subsequent local validations, this tool could contribute to the assessment and understanding of occupational therapists' professional identity internationally, thus enriching comparative research and professional development across different countries.

Professional identity, a dynamic process evolving over time (Kielhofner, 2009), was analyzed across three stages: pre-study, training, and professional practice. By employing this scale, we gain precise insights into crucial professional identity elements (Souto-Gómez et al., 2023b), illuminating their impact on training perceptions and professional socialization for enhanced development and performance (Ashby et al., 2016).

To contextualize this contribution, it is relevant to compare the OT-PIS with existing instruments. There are several well-recognized tools for measuring professional identity, such as the Professional Identity Questionnaire (PIQ) developed by Edwards & Dirette (2010) and later evaluated by Scanlan (2018), which focused on Australian occupational therapists, and the Group Identification Scale (GIS) by Toben et al. (2021), originally derived from Brown et al.'s (1986) PIQ and primarily

designed for medical students. While these scales have made valuable contributions to the study of professional identity, they were not specifically developed or validated for Spanish occupational therapists or within the Spanish cultural and professional context. In contrast, the OT-PIS scale presented in this study was rigorously designed and psychometrically validated for the Spanish context, taking into account the unique cultural and professional characteristics of occupational therapists in Spain. This specificity, combined with a robust psychometric process—including exploratory and confirmatory factor analyses, high reliability, and convergent validity—positions the OT-PIS as a novel and particularly suitable instrument for assessing professional identity in this population. Therefore, this research not only corroborates and extends existing knowledge on professional identity but also provides a solid and contextualized methodological resource, addressing an important gap and facilitating future research and practical applications in the field of occupational therapy in Spain.

Once the factor structure was established, we further examined the meaning and relevance of each factor. The factors were labeled as "Past expectations" and "Belonging." "Past expectations" explores how previous experiences influence therapists' perception and professional development, shedding light on identity formation. "Belonging" encompasses job satisfaction and professional knowledge, crucial for understanding therapists' commitment to their profession.

Past expectations

The results show that the "Past expectations" factor has a significant relationship with The Ashby questionnaire (Ashby et al., 2016), but not with The MacLeod scale (Adams et al., 2006; Matthews et al., 2019). This may be explained by the fact that The Ashby questionnaire (Ashby et al., 2016), originally designed for students, aligns better with the early stages of the professional career, as reflected in the statements included in this factor. Thus, "Past expectations" serves as a good indicator of prior knowledge and early perceptions about the profession during academic training.

The three statements with high factor loadings, related to prior knowledge of theories, settings, and professional interventions, reflect how clarity in these aspects contributes to the construction of professional identity. These findings align with previous studies (Ahmad et al., 2018; Leep-Hunderfund et al., 2022), which highlight the importance of past experiences for the formation and consolidation of professional identity. However, they partially differ from Chien et al. (2022), who propose a more continuous and dynamic identity formation process throughout the career.

The absence of multicollinearity between the "Belonging" and "Past expectations" factors indicates that each contributes independent information to professional identity. In our analysis, "Belonging" showed a stronger and more significant relationship with both scales, suggesting that the sense of belonging may be a more decisive component in consolidated professional identity, while "Past expectations" is more relevant in the early stages or specific aspects of professional knowledge. These results reinforce the importance of clarifying and managing expectations during academic training, promoting spaces for dialogue and reflection between students and teachers to foster a solid and conscious professional identity.

Belonging

The significant contribution of "Belonging" underscores its critical role in occupational therapists' professional identity, emphasizing its influence on job satisfaction, commitment, and self-perception within the profession. The "Belonging" factor of the OT-PIS exhibits a much stronger relationship with other scales compared to "Past expectations", explaining the majority of the variability. This suggests that the "Belonging" factor is a robust predictor of professional identity in this context.

Comparing these results to other studies reveals several noteworthy findings. For instance, the item "I have developed a clear professional identity" indicates that individuals affirming this statement possess greater clarity in their professional identity. This finding aligns with research in the palliative care field (Reigada et al., 2021) but contrasts with studies in pharmacy and psychiatry (Hussein et al., 2021; McDermott et al., 2023; Möller-Leimkühler et al., 2016), underscoring the strategic communication of a clear professional identity in occupational therapy (Walsh, 2018).

Similarly, the statement "I feel that I share characteristics with other members of the profession" demonstrates a moderately strong relationship with the corresponding factor, highlighting the importance of understanding necessary skills and collaborating with diverse professional categories in professional identity formation. Additionally, "Being an occupational therapist makes me happy" suggests that individuals agreeing with this statement are likely to experience high levels of satisfaction and happiness in their profession. This finding is consistent with nursing research, emphasizing the role of support from patients, family, and colleagues in enhancing job satisfaction (Jiang & Jin, 2022). Conversely, a lack of a clear professional identity can lead to tensions between role requirements and healthcare organizations, emphasizing the importance of recognizing specialized roles in developing a strong professional identity (Souto-Gómez et al., 2020).

Furthermore, items such as "I feel like a member of this profession" and "I can positively identify with other occupational therapists" showed very high factor loadings (above 0.9) within the "Belonging" dimension. This confirms their strong capacity to capture the sense of professional belonging, a construct that has been consistently associated with higher levels of job satisfaction, engagement, and professional commitment (Fleury et al., 2017, 2018a, 2018b). These findings corroborate previous literature highlighting belonging as a core component of professional identity. Moreover, they add specificity by validating this association within a Spanish sample of occupational therapists, where cultural and educational contexts may influence identity formation. Promoting a strong sense of belonging has been recognized as a protective factor against burnout and professional detachment (Hitch et al., 2014; Snodgrass & Shachar, 2008; Souto-Gómez et al., 2023c; Tran et al., 2018), underscoring the practical relevance of this dimension not only in occupational therapy but across health professions. Thus, the present results not only align with prior evidence but also reinforce the importance of designing educational and workplace strategies that actively foster professional identification and peer connectedness from early stages of training.

Research limitations

The factor analysis used in this study, a widely accepted and robust analytical approach, allows for effective generalization of results within the sample (Floyd & Widaman, 1995). This technique has been extensively employed across various disciplines to investigate professional identity. For example, it has been applied by Barbour & Lammers (2015) in the medical field, Eason et al. (2018) in sports, Rognstad et al. (2004) in nursing, and Tan et al. (2017) in healthcare. These studies validate the utility and stability of factor analysis in understanding professional identity.

Factor analysis benefits from consistent results and broad support in the literature across disciplines, making it an effective tool for data dimensionality reduction, pattern identification, variable selection, and scale validation (Williams et al., 2010). Therefore, it is considered an appropriate and valuable method compared to alternative approaches.

Nevertheless, it is important to acknowledge the limitation of sample size in this study, which may affect the representativeness of the Spanish occupational therapy professional community. In particular, a more diverse sample would be desirable in terms of geographical regions, years of professional experience, practice areas (e.g., pediatrics, geriatrics, mental health), and demographic variables such as gender. Greater diversity in these aspects would allow for better generalization of the findings and provide a more nuanced understanding of how professional identity may vary among different subgroups within the profession.

Future Research Directions

For future studies, translating the scale into languages other than Spanish and validating it in diverse contexts, including specific occupational therapy settings, is recommended. This will allow continued exploration of the various constructs constituting professional identity. Additionally, investigating the role of emotions in constructing and defining professional identity in occupational therapy is deemed essential for future research.

Practical implications and tool availability

The OT-PIS has the potential to be a valuable resource in both educational and professional contexts. Its use can help identify areas of strength and development in the professional identity of occupational therapists, particularly in training or early career stages. Given its psychometric robustness, the tool can also contribute to planning targeted interventions that enhance a sense of belonging and alignment with the profession.

The OT-PIS version version is available as an appendix to this article and is freely accessible for research, clinical, and educational purposes (Appendix A and B). However, we recognize that for very busy professionals, especially in high-demand clinical environments, the current length may represent a limitation. Future work may focus on the development of a shorter version that maintains the scale's psychometric integrity while increasing its practicality in routine use.

We recommend using the OT-PIS not only as a one-off assessment during training or onboarding but also as part of ongoing career development processes. Its application at different stages could help monitor the evolution of professional identity, supporting strategies for retention, well-being, and job satisfaction among occupational therapists.

References

- Adams, K. S., Hean, S., Sturgis, H. P., & Clark, J. M. (2006). Investigating the factors influencing professional identity of first year health and social care students. *Learning in Health and Social Care*, 5(2), 55-68. http://doi.org/10.1111/j.1473-6861.2006.00119.x.
- Ahmad, A., Bahri, M. S., Zahiruddin, W. M., & Mat, M. Z. (2018). Nurturing professional identity through a community based education program: medical students experience. *Journal of Taibah University Medical Sciences*, 13(2), 113-122. http://doi.org/10.1016/j.jtumed.2017.12.001.
- Ajjawi, R., & Higgs, J. (2008). Learning to reason: a journey of professional socialisation. Advances in Health Sciences Education: Theory and Practice, 13(2), 133-150. http://doi.org/10.1007/s10459-006-9032-4.
- Ashby, S. E., Adler, J., & Herbert, L. (2016). An exploratory international study into occupational therapy students' perceptions of professional identity. *Australian Occupational Therapy Journal*, 63(4), 233-243. http://doi.org/10.1111/1440-1630.12271.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *The American Psychologist*, *37*(2), 122-147. http://doi.org/10.1037/0003-066X.37.2.122.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology*, 41(3), 586-598. http://doi.org/10.1037/0022-3514.41.3.586.
- Barbour, J. B., & Lammers, J. C. (2015). Measuring professional identity: a review of the literature and a multilevel confirmatory factor analysis of professional identity constructs. *Journal of Professions and Organization*, 2(1), 38-60. http://doi.org/10.1093/jpo/jou009.
- Beagan, B. L. (2001). Even if I don't know what I'm doing I can make it look like I know what I'm doing": becoming a doctor in the 1990s. *Canadian Review of Sociology*, 38(3), 275-292. http://doi.org/10.1111/j.1755-618X.2001.tb00974.x.
- Bebeau, M. J., & Monson, V. E. (2012). Professional identity formation and transformation across the life span. In A. McKee & M. Eraut (Eds.), *Learning trajectories, innovation and identity for professional development* (pp. 135-162). New York: Springer.
- Beckett, D., & Gough, J. (2004). Perceptions of professional identity: a story from paediatrics. *Studies in Continuing Education*, 26(2), 195-208. http://doi.org/10.1080/158037042000225218.
- Beijaard, D., Meijer, P. C., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education*, 20(2), 107-128. http://doi.org/10.1016/j.tate.2003.07.001.
- Berger, P., & Luckmann, T. (1991). The social construction of reality: a treatise in the sociology of knowledge. London: Penguin Books.
- Bowman, T. G., Thrasher, A. B., Kasamatsu, T. M., & Lyons, S. M. (2022). Multi-stakeholder perceptions of young professionals' integration during role transition. *Journal of Athletic Training*, 59(1), 99-110. http://doi.org/10.4085/1062-6050-0505.22.
- Brandford, E., Wang, T., Nguyen, C., & Rassbach, C. E. (2022). Sense of belonging and professional identity among combined pediatrics-anesthesiology residents. *Academic Pediatrics*, 22(7), 1246-1253. http://doi.org/10.1016/j.acap.2022.05.017.
- Brown, M. E. L., Coker, O., Heybourne, A., & Finn, G. M. (2020). Exploring the hidden curriculum's impact on medical students: professionalism, identity formation and the need for transparency. *Medical Science Educator*, 30(3), 1107-1121. http://doi.org/10.1007/s40670-020-01021-z.

- Brown, R. J., Condor, S., Mathews, A., Wade, G., & Williams, J. A. (1986). Explaining intergroup differentiation in an industrial organization. *Journal of Occupational Psychology*, 59(4), 273-286. http://doi.org/10.1111/j.2044-8325.1986.tb00230.x.
- Cheung, H. Y. (2008). Measuring the professional identity of Hong Kong in-service teachers. Journal of In-service Education, 34(3), 375-390. http://doi.org/10.1080/13674580802003060.
- Chien, J., Axon, D. R., & Cooley, J. (2022). Student pharmacists' perceptions of their professional identity. *Currents in Pharmacy Teaching & Learning*, 14(6), 712-719. http://doi.org/10.1016/j.cptl.2022.06.001.
- Clarke, C., Martin, M., Sadlo, G., & de-Visser, R. (2014). The development of an authentic professional identity on role-emerging placements. *British Journal of Occupational Therapy*, 77(5), 222-229. http://doi.org/10.4276/030802214X13990455043368.
- Colley, H., James, D., & Diment, K. (2007). Unbecoming teachers: towards a more dynamic notion of professional participation. *Journal of Education Policy*, 22(2), 173-193. http://doi.org/10.1080/02680930601158927.
- Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, 10(10), 1-9.
- Creek, J. (2003). Occupational therapy defined as a complex intervention. *British Journal of Occupational Therapy*, 72(3), 105-115. http://doi.org/10.1177/030802260907200304.
- Crossley, J., & Vivekananda-Schmidt, P. (2009). The development and evaluation of a Professional Self Identity Questionnaire to measure evolving professional self-identity in health and social care students. *Medical Teacher*, 31(12), 603-607. http://doi.org/10.3109/01421590903193547.
- Cruess, S. R., Cruess, R. L., & Steinert, Y. (2019). Supporting development professional identity: general principles. *Medical Teacher*, 41(6), 641-649. http://doi.org/10.1080/0142159X.2018.1536260.
- Dall'Alba, G. (2009). Learning to be professionals. New York: Springer.
- Derakhshanrad, S. A., Piven, E. F., & Zeynalzadeh, B. (2022). Evolution of professional identity in Iranian occupational therapy students and new graduates: a comparative study. *British Journal of Occupational Therapy*, 85(4), 231-240. http://doi.org/10.1177/03080226211017752.
- Dige, M. (2009). Occupational therapy, professional development, and ethics. *Scandinavian Journal of Occupational Therapy*, 16(2), 88-98. http://doi.org/10.1080/11038120802409754.
- Dobrow, S. R., & Higgins, M. C. (2005). Developmental networks professional identity: longitudinal study. Career Development International, 10(6-7), 567-583. http://doi.org/10.1108/13620430510620629.
- Durocher, E., & Kinsella, E. A. (2021). Ethical tensions in occupational therapy practice: conflicts and competing allegiances. *Canadian Journal of Occupational Therapy*, 88(3), 244-253. http://doi.org/10.1177/00084174211021707.
- Eason, C. M., Mazerolle, S. M., Denegar, C. R., Burton, L., & McGarry, J. (2018). Validation of the professional identity and values scale among an athletic trainer population. *Journal of Athletic Training*, 53(1), 72-79. http://doi.org/10.4085/1062-6050-209-16.
- Edwards, H., & Dirette, D. (2010). The relationship between professional identity and burnout among occupational therapists. *Occupational Therapy in Health Care*, 24(2), 119-129. http://doi.org/10.3109/07380570903329610.
- Ferrando, P. J., Lorenzo-Seva, U., Hernández-Dorado, A., & Muñiz, J. (2022). Decalogue for the factor analysis of test items. *Psicothema*, 34(1), 7-17. http://doi.org/10.7334/psicothema2021.456.
- Finn, G., Garner, J., & Sawdon, M. (2010). 'You're judged all the time!' Students' views on professionalism: a multicentre study. *Medical Education*, 44(8), 814-825. http://doi.org/10.1111/j.1365-2923.2010.03743.x.

- Fitzpatrick, J. M., While, A. E., & Roberts, J. D. (1996). Key influences on the professional socialisation and practice of students undertaking different pre-registration nurse education programmes in the United Kingdom. *International Journal of Nursing Studies*, 33(5), 506-518. http://doi.org/10.1016/0020-7489(96)00003-X.
- Fleury, M. J., Grenier, G., & Bamvita, J. M. (2017). A comparative study of job satisfaction among nurses, psychologists/psychotherapists and social workers working in Quebec mental health teams. BMC Nursing, 16(62), 1-12. http://doi.org/10.1186/s12912-017-0255-x.
- Fleury, M. J., Grenier, G., Bamvita, J. M., & Chiocchio, F. (2018a). Associated and mediating variables related to job satisfaction among professionals from mental health teams. *The Psychiatric Quarterly*, 89(2), 399-413. http://doi.org/10.1007/s11126-017-9543-6.
- Fleury, M. J., Grenier, G., Bamvita, J. M., & Farand, L. (2018b). Variables associated with job satisfaction among mental health professionals. *PLoS One*, *13*(10), 1-16. http://doi.org/10.1371/journal.pone.0205963.
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299. http://doi.org/10.1037/1040-3590.7.3.286.
- Fraser, C., & McDonald, R. P. (1988). NOHARM: least squares item factor analysis. *Multivariate Behavioral Research*, 23(2), 267-269. http://doi.org/10.1207/s15327906mbr2302_9.
- Goldie, J., Dowie, A., Cotton, P., & Morrison, J. (2007). Teaching professionalism in the early years of a medical curriculum: qualitative study. *Medical Education*, 41(6), 610-617. http://doi.org/10.1111/j.1365-2923.2007.02772.x.
- Healey, A. C., & Hays, D. G. (2012). A discriminant analysis of gender and counselor professional identity development. *Journal of Counseling and Development*, 90(1), 55-62. http://doi.org/10.1111/j.1556-6676.2012.00008.x.
- Hitch, D., Pépin, G., & Stagnitti, K. (2014). In the footsteps of Wilcock, Part two: the interdependent nature of doing, being, becoming, and belonging. Occupational Therapy in Health Care, 28(3), 247-263. http://doi.org/10.3109/07380577.2014.898115.
- Holland, D. C. (1998). Identity and agency in cultural worlds. Cambridge: Harvard University Press.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1-55. http://doi.org/10.1080/10705519909540118.
- Hunter, A. B., Laursen, S. L., & Seymour, E. (2007). Becoming a scientist: the role of undergraduate research in students'cognitive, personal and professional development. *Science Education*, 91(1), 36-74. http://doi.org/10.1002/sce.20173.
- Hurt-Avila, K. M., & Castillo, J. (2017). Accreditation, professional identity development, and professional competence: a discriminant analysis. *Journal of Counselor Leadership and Advocacy*, 4(1), 39-51. http://doi.org/10.1080/2326716X.2017.1282331.
- Hussein, R., Whaley, C. R. J., Lin, E. C. J., & Grindrod, K. (2021). Identifying barriers, facilitators and behaviour change techniques to the adoption of the full scope of pharmacy practice among pharmacy professionals: using the theoretical domains framework. *Research in Social & Administrative Pharmacy*, 17(8), 1396-1406. http://doi.org/10.1016/j.sapharm.2020.10.003.
- Ibarra, H. (1999). Provisional selves: experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, 44(4), 764-791. http://doi.org/10.2307/2667055.
- Ikiugu, M., & Rosso, H. (2003). Facilitating professional identify in occupational therapy students. Occupational Therapy International, 10(3), 206-225. http://doi.org/10.1002/oti.186.
- Instituto Nacional de Estadística INE. (2024). Terapeutas ocupacionales colegiados por año y sexo: estadística de profesionales sanitarios colegiados 2023. Retrieved in 2024, September 17, from https://www.ine.es/jaxi/Tabla.htm?tpx=30732&L=0

- Jiang, T., & Jin, Q. (2022). Status quo of occupational identity of nursing staff in rehabilitation department and its relationship with work stressors. *Contrast Media & Molecular Imaging*, 2022(1), 1-13. http://doi.org/10.1155/2022/9974311.
- Johnson, R. L., & Morgan, G. B. (2016). Survey scales: a guide to development, analysis, and reporting. New York: Guilford Press.
- Kielhofner, G. (2009). Conceptual foundations of occupational therapy practice. Philadelphia: F.A. Davis Company.
- Lecours, A., Baril, N., & Drolet, M. J. (2021). What is Professionalism in Occupational Therapy? Canadian Journal of Occupational Therapy, 88(2), 117-130. http://doi.org/10.1177/0008417421994377.
- Leep-Hunderfund, A. N., Kumbamu, A., O'Brien, B. C., Starr, S. R., Dekhtyar, M., Gonzalo, J. D., Rennke, S., Ridinger, H., & Chang, A. (2022). "Finding my piece in that puzzle": a qualitative study exploring how medical students at four U.S. schools envision their future professional identity in relation to health systems. *Academic Medicine*, 97(12), 1804-1815. http://doi.org/10.1097/ACM.00000000000004799.
- Lorenzo-Seva, U., & Ferrando, P. J. (2019). Robust Promin: a method for diagonally weighted factor rotation. *Liberabit*, 25(1), 99-106. http://doi.org/10.24265/liberabit.2019.v25n1.08.
- Lorenzo-Seva, U., & Ferrando, P. J. (2022). A simulation-based scaled test statistic for assessing model-data fit in least-squares unrestricted factor-analysis solutions. Technical report. *Methodology*, 19(2), 96-115. http://doi.org/10.5964/meth.9839.
- Mak, S., Hunt, M., Boruff, J., Zaccagnini, M., & Thomas, A. (2022). Exploring professional identity in rehabilitation professions: a scoping review. Advances in Health Sciences Education: Theory and Practice, 27(3), 793-815. http://doi.org/10.1007/s10459-022-10103-z.
- Matthews, J., Bialocerkowski, A., & Molineux, M. (2019). Professional identity measures for student health professionals-a systematic review of psychometric properties. *BMC Medical Education*, 19(308), 1-10. http://doi.org/10.1186/s12909-019-1660-5.
- McDermott, I., Astbury, J., Jacobs, S., Willis, S., Hindi, A., Seston, E., & Schafheutle, E. (2023). To be or not to be: the identity work of pharmacists as clinicians. *Sociology of Health & Illness*, 45(3), 623-641. http://doi.org/10.1111/1467-9566.13605.
- Möller-Leimkühler, A. M., Möller, H. J., Maier, W., Gaebel, W., & Falkai, P. (2016). EPA guidance on improving the image of psychiatry. *European Archives of Psychiatry and Clinical Neuroscience*, 266(2), 139-154. http://doi.org/10.1007/s00406-016-0678-5.
- Monrouxe, L. V. (2010). Identity, identification and medical education: why should we care? *Medical Education*, 44(1), 40-49. http://doi.org/10.1111/j.1365-2923.2009.03440.x.
- Morrison, R., Cantero-Garlito, P. A., Mella, S., Moruno-Miralles, P., & Villarroel, V. (2018). Identidad profesional en estudiantes de último año de terapia ocupacional. Una experiencia piloto en el contexto español. TOG(A Coruña), 15(28), 194-202.
- Moruno-Miralles, P., & Talavera-Valverde, M. Á. (2007). Occupational therapy: an historical perspective, 90 years after its establishment. *TOG (A Coruña)*, 4(Monog1), 1-326.
- Nugent, F. A., & Jones, K. D. (2009). Introduction to the profession of counseling. Upper Saddle River: Pearson.
- Olesen, H. S. (2001). Professional identity as learning processes in life histories. *Journal of Workplace Learning*, 13(7-8), 290-298. http://doi.org/10.1108/13665620110411076.
- Ottewil, R. (2002). Tutors as professional role models, with particular reference to undergraduate business education. *Higher Education Quarterly*, 55(4), 436-451. http://doi.org/10.1111/1468-2273.00197.
- Pillen, M. T., Beijaard, D., & den Brok, P. J. (2013). Professional identity tensions of beginning teachers. Teachers and Teaching, 19(6), 660-678. http://doi.org/10.1080/13540602.2013.827455.

- Reigada, C., Centeno, C., Gonçalves, E., & Arantzamendi, M. (2021). Palliative care professionals' message to others: an ethnographic approach. *International Journal of Environmental Research and Public Health*, 18(10), 1-7. http://doi.org/10.3390/ijerph18105348.
- Rognstad, M. K., Nortvedt, P., & Aasland, O. (2004). Helping motives in late modern society: values and attitudes among nursing students. *Nursing Ethics*, 11(3), 227-239. http://doi.org/10.1191/0969733004ne691oa.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749-761. http://doi.org/10.1037/0022-3514.57.5.749.
- Ryan, R. M., & Deci, E. L. (2003). On assimilating identities to the self: A self-determination theory perspective on internalisation and integrity within cultures. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 253-272). New York: Guilford Press.
- Scanlan, J. N. (2018). Evaluation of the construct and internal validity of the Professional Identity Questionnaire: a Rasch analysis. Australian Occupational Therapy Journal, 65(5), 395-404. http://doi.org/10.1111/1440-1630.12489.
- Silveira, G. L., Campos, L. K. S., Schweller, M., Turato, E. R. T., Helmich, E., & Carvalho-Filho, M. A. (2019). "Speed up"! The influences of the hidden curriculum on the professional identity development of medical students. *Health Profession Education*, 5(3), 198-209. http://doi.org/10.1016/j.hpe.2018.07.003.
- Smith, H. B., & Robinson, G. P. (1995). Mental health counseling: past, present, and future. Journal of Counseling and Development, 74(2), 158-162. http://doi.org/10.1002/j.1556-6676.1995.tb01842.x.
- Snodgrass, J., & Shachar, M. (2008). Faculty perceptions of occupational therapy program directors' leadership styles and outcomes of leadership. *Journal of Allied Health*, 37(4), 225-235.
- Souto-Gómez, A. I., Talavera-Valverde, M. A., & Rial-Sánchez, A. F. (2020). Aspectos que conforman la identidad profesional del profesorado de formación y orientación laboral. *Estudios Sobre Educación*, 38, 29-57. http://doi.org/10.15581/004.38.29-57.
- Souto-Gómez, A. I., Talavera-Valverde, M. Á., Márquez-Álvarez, L. J., & García-de-la-Torre, M. D. (2023a). Analysis of occupational therapy students' pedagogical practices for the forging of professional identity and development of professional intelligence: a scoping review. *Journal of Intelligence*, 11(3), 1-22. http://doi.org/10.3390/jintelligence11030048.
- Souto-Gómez, A. I., Talavera-Valverde, M. Á., García-de-la-Torre, M. D., & Márquez-Álvarez, L. J. (2023b). Exploring occupational therapists' professional identity: a Q-method study. *Healthcare*, 11(4), 1-18. http://doi.org/10.3390/healthcare11040630.
- Souto-Gómez, A. I., Talavera-Valverde, M. Á., Márquez-Álvarez, L. J., & García-de-la-Torre, M. P. (2023c). La educación interprofesional en el desarrollo de la identidad profesional en terapia ocupacional: una revisión de alcance. *Cadernos Brasileiros de Terapia Ocupacional*, 31, e3381. http://doi.org/10.1590/2526-8910.ctoao258833813.
- Stockhausen, L. J. (2005). Learning to become a nurse: students' reflections on their clinical experiences. *The Australian Journal of Advanced Nursing*, 22(3), 8-14. http://doi.org/10.37464/2005.223.1969.
- Sun, H., Chen, D., Warner, D. O., Zhou, Y., Nemergut, E. C., Macario, A., & Keegan, M. T. (2021). Anesthesiology residents' experiences and perspectives of residency training. *Anesthesia and Analgesia*, 132(4), 1120-1128. http://doi.org/10.1213/ANE.000000000005316.
- Sutherland, L., Howard, S., & Markauskaite, L. (2010). Professional identity creation: examining the development of beginning to perceive teacher's understanding of their work as teachers. *Teaching and Teacher Education*, 26(3), 455-465. http://doi.org/10.1016/j.tate.2009.06.006.
- Swisher, L. L., Beckstead, J. W., & Bebeau, M. J. (2004). Factor analysis as a tool for survey analysis using a professional role orientation inventory as an example. *Physical Therapy*, 84(9), 784-799. http://doi.org/10.1093/ptj/84.9.784.

- Talavera-Valverde, M. Á. (2013). La cotidianeidad de nuestras actividades. *Cadernos Brasileiros de Terapia Ocupacional*, 21(2), 211-214. Retrieved in 2024, September 17, from https://www.cadernosdeterapiaocupacional.ufscar.br/index.php/cadernos/article/view/832
- Talavera-Valverde, M.-Á. (2008). Identidad profesional en terapia ocupacional. TOG(A Coruña), 5, 1-190.
- Tan, C. P., Van-der-Molen, H. T., & Schmidt, H. F. G. (2017). A measure of professional identity development for professional education. *Studies in Higher Education*, 42(8), 1504-1519. http://doi.org/10.1080/03075079.2015.1111322.
- Timmerman, G. (2009). Teacher educators modelling their teachers? *European Journal of Teacher Education*, 32(3), 225-238. http://doi.org/10.1080/02619760902756020.
- Timmerman, M. E., & Lorenzo-Seva, U. (2011). Dimensionality assessment ordered polytomous items with parallel analysis. *Psychological Methods*, 16(2), 209-220. http://doi.org/10.1037/a0023353.
- Toben, D., Mak-van der-Vossen, M., Wouters, A., & Kusurkar, R. A. (2021). Validation the professional identity questionnaire among medical students. *BMC Medical Education*, 21(359), 1-8. http://doi.org/10.1186/s12909-021-02704-w.
- Tran, C., Kaila, P., & Salminen, H. (2018). Conditions interprofessional education for students in primary healthcare: a qualitative study. *BMC Medical Education*, *18*(122), 1-8. http://doi.org/10.1186/s12909-018-1245-8.
- Trede, F., Macklin, R., & Bridges, D. (2012). Professional identity development: a review of the higher education literature. *Studies in Higher Education*, *37*(3), 365-384. http://doi.org/10.1080/03075079.2010.521237.
- Vansteenkiste, M., Zhou, M., Lens, W., & Soenens, B. (2005). Experiences of autonomy and control among Chinese learners: vitalising or immobilising? *Journal of Educational Psychology*, 97(3), 468-483. http://doi.org/10.1037/0022-0663.97.3.468.
- Walder, K., Bissett, M., Molineux, M., & Whiteford, G. (2022). Understanding professional identity in occupational therapy: scoping review. *Scandinavian Journal of Occupational Therapy*, 29(3), 75-197. http://doi.org/10.1080/11038128.2021.1974548.
- Walsh, W. E. (2018). Investigating public perception of occupational therapy: an environmental scan of three media outlets. *The American Journal of Occupational Therapy*, 72(3), 1-10. http://doi.org/10.5014/ajot.2018.024513.
- Weaver, R., Peters, K., Koch, J., & Wilson, I. (2011). 'Part of the team': professional identity and social exclusivity in medical students. *Medical Education*, 45(12), 1220-1229. http://doi.org/10.1111/j.1365-2923.2011.04046.x.
- Wenger, E. (1998). *Communities of practice: learning, meaning, and identity.* Cambridge: Cambridge University Press.. http://doi.org/10.1017/CBO9780511803932.
- Williams, B., Onsman, A., & Brown, T. (2010). Exploratory factor analysis: a five-step guide for novices. Australasian Journal of Paramedicine, 8, 1-13. http://doi.org/10.33151/ajp.8.3.93.
- Zimmerman, B. J., & Kitsantas, A. (1999). Acquiring writing revision skill: shifting from process to outcome self-regulatory goals. *Journal of Educational Psychology*, 91(2), 241-250. http://doi.org/10.1037/0022-0663.91.2.241.
- Zimmerman, B. J., & Ringle, J. (1981). Effects of model persistence and statements of confidence on children's self-efficacy and problem solving. *Journal of Educational Psychology*, 73(4), 485-493. http://doi.org/10.1037/0022-0663.73.4.485.

Author's Contributions

Ana-Isabel Souto-Gómez and Miguel-Ángel Talavera-Valverde are the lead authors and Miguel-Ángel Talavera-Valverde is the corresponding author. All other authors are listed according to their contributions, as defined by the CRediT taxonomy. Ana-Isabel Souto-Gómez was responsible for writing – original draft, writing – review & editing, conceptualization, methodology and formal analysis. Luis-Javier Márquez-Álvarez was responsible for writing – original draft, writing – review & editing, conceptualization, methodology and formal analysis. Miguel-Ángel Talavera-Valverde was responsible for writing – original draft, writing – review & editing, conceptualization and methodology. María-del-Pilar García-de-la-Torre was responsible for writing – review & editing, conceptualization and methodology. All authors approved the final version of the text.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Corresponding author

Miguel-Ángel Talavera-Valverde e-mail: miguel.angel.talavera.valverde@udc.es

Section editor

Prof. Dr. Vagner dos Santos

Appendix A. Cuestionario de identidad professional en terapia ocupacional OT-PIS (Occupational Therapy – Professional Identity Scale).

A continuación, se presentan una serie de afirmaciones relacionadas con tu experiencia como terapeuta ocupacional. Estas afirmaciones hacen referencia a dos momentos de tu trayectoria profesional: durante tu formación universitaria y en tu situación profesional actual.

Por favor, indica en qué medida estás de acuerdo o en desacuerdo con cada una de las afirmaciones, teniendo en cuenta el momento al que se refiere cada una. Es importante que respondas todas las preguntas, de forma individual y sincera.

Marca la opción que mejor refleje tu experiencia personal, utilizando la siguiente escala de respuesta:

- 1 Totalmente en desacuerdo
- 2 En desacuerdo
- 3 Ni de acuerdo ni en desacuerdo
- 4 De acuerdo
- 5 Totalmente de acuerdo

Factor 1: Sentido de pertenencia	1 2 3 4 5
1. Ser terapeuta ocupacional me hace feliz.	
2. He desarrollado una identidad profesional clara	
3. Me siento miembro de esta profesión	
4. Puedo identificarme positivamente con otros y otras terapeutas ocupacionales	
5. Siento que comparto características con otros miembros de la profesión.	
6. Como terapeuta ocupacional, aprovecho bien mi competencia.	
Factor 2: Expectativas pasadas	
7. Durante mis estudios, sabía qué tipo de teorías iban a forma parte de mi actividad laboral	
8. Durante mis estudios, sabía qué tipos de entornos iban a forma parte de mi actividad laboral	
9. Durante mis estudios, sabía qué tipo de intervenciones iban a forma parte de mi actividad laboral	

Appendix B. Occupational Therapy Professional Identity Scale (OT-PIS).

Below you will find a series of statements related to your experience as an occupational therapist. These statements refer to two moments in your professional trajectory: during your university training and in your current professional situation.

Please indicate to what extent you agree or disagree with each of the statements, taking into account the moment to which each one refers. It is important that you answer all the questions, individually and sincerely.

Mark the option that best reflects your personal experience, using the following response scale:

- 1 Strongly disagree
- 2 Disagree
- 3 Neither agree nor disagree
- 4 Agree
- 5 Strongly agree

Factor 1: Belonging	1 2 3 4 5
1. Being an occupational therapist makes me happy	
2. I have developed a clear professional identity.	
3. I feel like a member of this profession.	
4. I can positively identify with other occupational therapists.	
5. I feel that I share characteristics with other members of the profession.	
6. As an occupational therapist, I make good use of my competence.	
Factor 2: Past Expectations	
7. During my studies, I knew what types of theories would be part of my professional activity	·.
8. During my studies, I knew what types of settings would be part of my professional activity	
9. During my studies, I knew what types of interventions would be part of my professional	
activity. laboral	