

EVALUATION OF PHYSIOTHERAPY STUDENTS' KNOWLEDGE ABOUT PROFESSIONAL IDENTITY IN TWO SPANISH PUBLIC UNIVERSITIES

L. Ramírez-Pérez¹, C. García-Conejo¹, A. Escriche-Escuder², V. Corrienero-Ramírez¹, N. Moreno-Morales¹, C. Roldán-Jiménez¹

¹University of Málaga (SPAIN)

²University of Valencia (SPAIN)

Abstract

Introduction: Physiotherapy, like other health disciplines, is an autonomous and regulated profession in most countries of the European Union, also in Spain. However, other pseudo-health professions treat patients despite lacking the necessary formal training and certificates. This fact, together with the existence of pseudoscientific therapeutic approaches without scientific evidence, represents a source of confusion between patients and professionals, but also between students, which can represent a decrease in the quality of care practice and a risk to patient safety. The objective of the study was to analyze the prior knowledge and beliefs of first-year students of the Degree in Physiotherapy at two Spanish public universities to identify the identity aspects of the profession associated with greater knowledge gaps, thus allowing them to be addressed favorably during the students' formation.

Methodology: This transversal study recruited first-year students of the Degree in Physiotherapy from two Spanish public universities. In the first session of one of the subjects of the first semester, the students anonymously completed a digital questionnaire designed specifically for this study, which included questions related to professional identity, its scope of application, its therapeutic instruments, and its legal and scientific basis. Additionally, potential confounding factors were identified, such as the existence of medical relatives, to improve the interpretation of the results.

Results: Two hundred and forty-five first-year students participated in this study. According to the results obtained through the students' responses, Physiotherapy is identified as a health profession (99.6% of the responses), although the criteria that define health professions are not known by 32.7% of the students. Physiotherapists are distinguished by students compared to other professionals such as massage therapists or osteopaths. However, among some students, there are doubts about whether or not other pseudo-healthcare professions are categorized as health disciplines. It is largely considered that Physiotherapy, as a profession, should be guided by scientific evidence. Likewise, there are doubts regarding the competencies and mechanisms of action of some physiotherapy techniques.

Conclusions: Although physiotherapy students access university training with certain knowledge, there are still some deficiencies regarding the identity knowledge of the profession. These shortcomings are especially related to the competencies of the profession, the differences between Physiotherapy and other pseudo-health professions, and the requirements to consider a profession as health. The role of physiotherapy in some areas of application must also be clarified, as well as the differentiation between physiotherapy tools and other pseudoscientific tools frequently used in clinical practice. The introduction of informative content during undergraduate training that allows addressing these deficiencies should be promoted.

Keywords: Education, knowledge, physiotherapy.

1 INTRODUCTION

Physiotherapy, like other health disciplines, is an autonomous and regulated profession in most countries of the European Union [1]. This aspect is decisive for a health profession such as Physiotherapy because it requires the course of regulated university training for qualification, as well as facilitates the existence of procedural standards, professional practice guides, and codes of ethics and conduct, providing a guarantee for patients. However, physiotherapy in each country is influenced by the socio-political context and the historical past in the development of each country. For example, in Spain, Physiotherapy was not incorporated into the University until the 80s, through the publication of a Royal Decree [2]. The first professional college of physiotherapists created in Spain was that of Catalonia in 1990, only 3 decades ago. On the other hand, in Spain, physiotherapy was defined even

more recently, in the Law on the Regulation of Health Professions published in 2003 [3]. Its later professionalisation compared to other countries and continents has meant that this profession is still relatively unknown by the Spanish population itself. Currently, there are more than 66.000 practicing physiotherapists in Spain and a total of 59 university programs in Spain to access this academic degree [4]. However, the reality of the health context is complex, and other pseudo-health professions treat patients despite lacking the necessary formal training and certificates. This fact, together with the existence of pseudoscientific therapeutic approaches without scientific evidence, represents a source of confusion between patients and professionals, but also between students, which can represent a decrease in the quality of care practice and a risk to patient safety [5]. The objective of the study was to analyze the prior knowledge and beliefs of first-year students of the Degree in Physiotherapy at two Spanish public universities to identify the identity aspects of the profession associated with greater knowledge gaps, thus allowing them to be addressed favorably during the students' formation.

2 METHODOLOGY

This transversal study recruited first-year students of the Degree in Physiotherapy from two Spanish public universities. During the beginning of the academic year, the analysis of students' knowledge about the identity of the profession was addressed. With this objective, in the first session of one of the subjects of the first semester, the students anonymously completed a digital questionnaire hosted on LimeSurvey that was designed specifically for this study. The questionnaire included questions (Q) related to professional identity, its scope of application, its therapeutic instruments, and its legal and scientific basis. Also, descriptive outcomes such as potential confounding factors were identified, such as the existence of medical relatives, to improve the interpretation of the results. A total of 14 questions were included. Descriptive analyses were applied to calculate the means, minimum, and maximum age outcomes. Qualitative dichotomous outcomes were described as number of subjects (n) and percentage (%) (Q1-Q9, yes/no response). Polidichotomus outcomes (multi-choice questions) were expressed as proportion (x/x). Analyses were performed using the Jamovi statistical platform (version 2.2.28).

Questions related to professional identity with yes/no responses are presented below for better comprehension of the results section:

Q1: Do you know what requirements are necessary to consider a profession as a health profession?

Q2: Do you think physiotherapy is a health profession?

Q3: Is a massage therapist the same as a physiotherapist?

Q4: Do you think that someone who has taken a massage course and is not a physiotherapist can treat patients through massage? For example, sports injuries or back pain.

Q5: Is an osteopath the same as a physiotherapist?

Q6: Do you think that a physiotherapist can and knows how to “crunch” (manipulate) the back?

Q7: The physiotherapist can “correct” the spine and make modifications with his hands through techniques such as massage and repositioning of the vertebrae.

Q8: Do you think physiotherapy should be guided by scientific evidence?

Likewise, multichoice questions are also presented:

Q9: Point out the options that you consider as tools for the physiotherapist.

Q10: From 0 to 10 (with “0” being nothing and “10” being the maximum), indicate the weight you think massage has among the treatment tools in Physiotherapy.

Q11: Indicate the places where you think a physiotherapist can work or collaborate while practicing their profession. Response options.

Q12: Indicate which answer you think is most appropriate.

Q13: Indicate the correct answer about legislation and regulation in Spain.

Q14: What group of words do you think best defines physical therapy?

3 RESULTS

Two hundred and forty-five first-year students were included. The average age of the students included was 19.8 years (between 17 and 58). 72.% of the participants had a previous academic level of General Certificate of Education (known in Spain as "*Bachillerato*"), and 41.6% of them had a family member or person with whom they had lived who had a health professional (Table 1).

Table 1. Characteristics of the sample (n=245).

Age (years)	Mean: 19.8 Minimum: 17 Maximum: 58
The highest academic level obtained before entry into this Degree	General Certificate of Education (" <i>Bachillerato</i> ") (182; 72,5%) Certificate of Higher Education (" <i>Ciclo formativo de Grado Superior</i> ") (46; 18.8%) University Degree (" <i>Grado</i> ") (14; 5.7%) Master's Degree (" <i>Máster</i> ") (3; 1.2%)
A family member or person with whom they have lived has a health profession	Yes (102; 41.6%) No (143; 58.4%)

According to the results obtained through the students' responses, Physiotherapy is identified as a health profession (Q2: 99.6% of the responses), although the criteria that define health professions are not known by 32.7% of the students (Q1). Physiotherapists are distinguished by students compared to other professionals such as massage therapists (Q3: 99.6% of the responses) or osteopaths (Q5: 94.3% of the responses). It is largely considered that Physiotherapy, as a profession, should be guided by scientific evidence (Q8: 98.4% of the responses). Likewise, there are doubts regarding the competencies and mechanisms of action of some physiotherapy techniques (Q6 and Q7) (Table 2).

Table 2. Results of yes or no questions.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Response Yes (%)	165 (67,3)	244 (99.6)	1 (0.4)	33 (13.5)	14 (5.7)	149 (60.8)	179 (73.1)	241 (98.4)
Response No (%)	80 (32.7)	1 (0.4)	244 (99.6)	212 (86.5)	230 (94.3)	96 (39.2)	66 (26.9)	4 (1.6)

Likewise, additional data of interest can be obtained from the multi-choice answers. For example, the results report that common physiotherapy techniques (massage, electrotherapy, hydrotherapy, strength exercise, passive mobilizations, stretching, and thermotherapy) are mostly related to physiotherapy (Q9). Other physiotherapy techniques such as aerobic exercise are less related to the profession (Q9). Techniques considered pseudoscientific (e.g.: wood therapy, Bach flowers, foot reflexology) are not mostly identified with the profession (Q9) (Figure 1). The students give important weight to the use of massage in Physiotherapy (Q10). Although many of the contexts where Physiotherapy can be developed are identified by the majority of students, some such as schools or community swimming pools are still barely related to this profession (Q11). Finally, osteopathy and chiropractic are identified by many students as health professions, despite not being so (Q13) (Table 3).

Table 3. Results of multi-choice questions.

	Response (number of students per option/total students)	
Q9: Point out the options that you consider as tools for the physiotherapist	Massage (221/245) Electrotherapy (228/245) Wood therapy (84/245) Hydrotherapy (206/245) Bach Flowers (16/245) Strength exercise (192/245) Passive joint mobilizations (192/245) Osteopathy (134/245) Chiropractic (105/245) Stretching (224/245) Foot reflexology (58/245) Thermotherapy (190/245) Aerobic exercise (119/245) Reiki (16/245)	
Q10: From 0 to 10 (with "0" being nothing and "10" being the maximum), indicate the weight you think massage has among the treatment tools in Physiotherapy.	0 (1/245) 1 (1/245) 2 (1/245) 3 (6/245) 4 (11/245) 5 (37/245)	6 (46/245) 7 (65/245) 8 (56/245) 9 (13/245) 10 (8/245)
Q11: Indicate the places where you think a physiotherapist can work or collaborate while practicing their profession. Response options	Public hospital: 236/245 Private hospital: 237/245 School: 86/245 Sports teams: 243/245 Dental clinic: 26/245 Gynecology clinic: 76/245 Veterinary clinic: 41/245 Residence or day center: 193/245 High-performance sports center: 235/245 Aesthetic clinic: 26/245 Community pool: 78/245 Sports centre: 210/245	
Q12: Indicate which answer you think is most appropriate.	Physiotherapists cannot prescribe exercise because it is the responsibility of sports physical educators: 10/245 Physiotherapists can prescribe therapeutic exercise: 235/245	
Q13: Indicate the correct answer about legislation and regulation in Spain	Osteopathy, Chiropractic, and Physiotherapy are health professions: 99/245 The Physiotherapy profession is the only health profession of the 3: 91/245 Osteopathy is only considered a health profession when Physiotherapy has previously been studied: 35/245 None of the above is correct: 20/245	
Q14: What group of words do you think best defines physical therapy?	Massage, stretching, and bandages 6/245 Massage, manual therapy, and machines 15/245 Massage, manual therapy, and exercise 69/245 Education, exercise, and manual therapy 107/245 Education, massage, and exercise 11/245 Education, manual therapy, and machines 37/245	

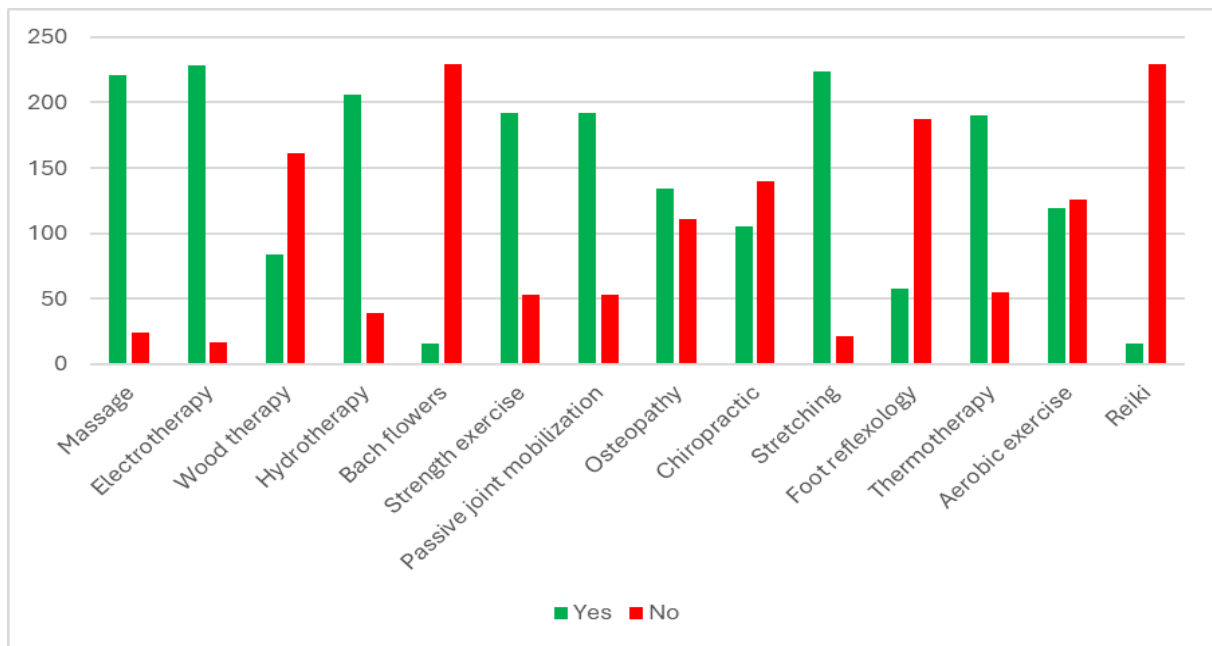


Figure 1. Student's perception of physiotherapy tools (Q9)

4 CONCLUSIONS

Results from the present study suggest that first-year students of a Degree in Physiotherapy face some deficiencies regarding the identity knowledge of the profession, despite accessing university training with certain knowledge. These shortcomings are especially related to the competencies of the profession, the differences between Physiotherapy and other pseudo-health professions, and the requirements to consider a profession as health. The role of physiotherapy in some areas of application must also be clarified, as well as the differentiation between physiotherapy tools and other pseudoscientific tools frequently used in clinical practice. The introduction of informative content during undergraduate training could address these deficiencies.

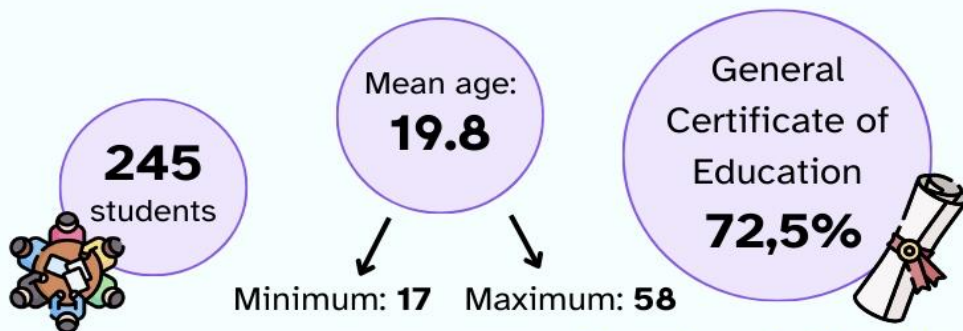
ACKNOWLEDGEMENTS

The authors thank the University of Málaga for providing financial support to develop this project and to publish these results at the present conference, through the call INNOVA22 of the Vice-rector of Teaching and Research Staff.

REFERENCES

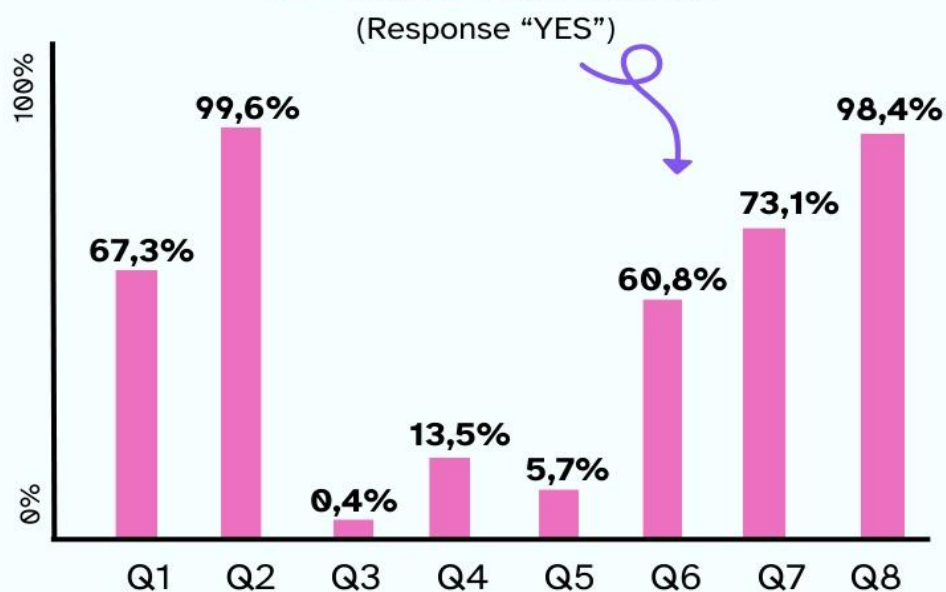
- [1] J. Gotlib, D. Białoszewski, J. Opavsky, R. Garrod, N.E. Fuertes, L.P. Gallardo, B.P. Lourido, S. Monterde, C.S. Serrano, M. Sacco, I. Kunicka. "Attitudes of European physiotherapy students towards their chosen career in the context of different educational systems and legal regulations pertaining to the practice of physiotherapy: implications for university curricula", *Physiotherapy*, 2012, vol. 98, no. 1, pp. 76-85. doi: 10.1016/j.physio.2011.02.003.
- [2] Real Decreto 2965/1980, de 12 de diciembre, sobre integración en la Universidad de los estudios de Fisioterapia como Escuelas Universitarias de Fisioterapia, 1981.
- [3] Ley 44/2003, de 21 de noviembre, de ordenación de las profesiones sanitarias., s. f.
- [4] Spanish Association of Physiotherapists. "Spain: a profile of the profession in 2023". Retrieved from: <https://world.physio/membership/spain>
- [5] Gardner, T., Refshauge, K., Smith, L., McAuley, J., Hübscher, M. y Goodall, S. (2017). Physiotherapists' beliefs and attitudes influence clinical practice in chronic low back pain: A systematic review of quantitative and qualitative studies. *Journal of Physiotherapy*, 63 (3), 132-143.

SUPPLEMENTARY INDEX (GRAPHICAL ABSTRACT)



Questions related to professional identity

YES OR NOT QUESTIONS



- **Q1:** Do you know what requirements are necessary to consider a profession as a health profession?
- **Q2:** Do you think physiotherapy is a health profession?
- **Q3:** Is a massage therapist the same as a physiotherapist?
- **Q4:** Do you think that someone who has taken a massage course and is not a physiotherapist can treat patients through massage? For example, sports injuries or back pain.
- **Q5:** Is an osteopath the same as a physiotherapist?
- **Q6:** Do you think that a physiotherapist can and knows how to "crunch" (manipulate) the back?
- **Q7:** The physiotherapist can "correct" the spine and make modifications with his hands through techniques such as massage and repositioning of the vertebrae.
- **Q8:** Do you think physiotherapy should be guided by scientific evidence?

MULTI-CHOICE QUESTIONS

Q9: Point out the options that you consider as tools for the physiotherapist



- **Massage:** 90,20%
- **Electrotherapy:** 93,06%
- **Wood therapy:** 34,28%
- **Hydrotherapy:** 84,08%
- **Bach Flowers:** 6,53%
- **Strength exercise:** 78,36%
- **Passive joint mobilizations:** 78,36%
- **Osteopathy:** 54,69%
- **Chiropractic:** 42,85%
- **Stretching:** 91,42%
- **Foot reflexology:** 23,67%
- **Thermotherapy:** 77,55%
- **Aerobic exercise:** 48,57%
- **Reiki:** 6,53%

Q10: From 0 to 10 (with "0" being nothing and "10" being the maximum), indicate the weight you think massage has among the treatment tools in Physiotherapy.

- **0:** 0,4%
- **1:** 0,4%
- **2:** 0,4%
- **3:** 2,44%
- **4:** 4,48%
- **5:** 15,10%
- **6:** 18,77%
- **7:** 26,53%
- **8:** 22,85%
- **9:** 5,3%
- **10:** 3,26%

Q11: Indicate the places where you think a physiotherapist can work or collaborate while practicing their profession. Response options

- **Public hospital:** 96,32%
- **Private hospital:** 96,73%
- **School:** 35,10%
- **Sports teams:** 99,18%
- **Dental clinic:** 10,61%
- **Gynaecology clinic:** 31,02%
- **Veterinary clinic:** 16,73%
- **Residence or day centre:** 78,77%
- **High performance sports centre:** 95,91%
- **Aesthetic clinic:** 10,61%
- **Community pool:** 31,83%
- **Sports centre:** 85,71%

Q12: Indicate which answer you think is most appropriate.

- **Physiotherapists cannot prescribe exercise because it is the responsibility of sports physical educators:** 4,08%
- **Physiotherapists can prescribe therapeutic exercise:** 95,91%

Q13: Indicate the correct answer about legislation and regulation in Spain.

- **Osteopathy, Chiropractic and Physiotherapy are health professions:** 40,40%
- **The Physiotherapy profession is the only health profession of the 3:** 37,14%
- **Osteopathy is only considered a health profession when Physiotherapy has previously been studied:** 14,28%
- **None of the above is correct:** 8,16%

Q14: What group of words do you think best defines physical therapy?

- **Massage, stretching and bandages:** 2,44%
- **Massage, manual therapy and machines:** 6,12%
- **Massage, manual therapy and exercise:** 28,16%
- **Education, exercise and manual therapy:** 43,67%
- **Education, massage and exercise:** 4,48%
- **Education, manual therapy and machines:** 15,10%