

**COMMUNICATION SKILLS IN BASIC TRAINING OF PHYSIOTHERAPY STUDENTS: E-DELPHI STUDY**  
**COMPETÊNCIAS DE COMUNICAÇÃO NA FORMAÇÃO BASE DE ESTUDANTES DE FISIOTERAPIA: ESTUDO E-DELPHI**  
**TÉCNICAS DE COMUNICACIÓN EN LA FORMACIÓN BÁSICA DE LOS ESTUDIANTES DE FISIOTERAPIA: ESTUDIO E-DELPHI**

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## RESUMO

**Introdução:** A elevada importância da comunicação clínica/em saúde como competência vital na prestação de cuidados e fundamental na educação para a saúde, determinou a relevância do seu ensino, aconselhando-se que este seja introduzido na aprendizagem pré-graduada.

**Objetivos:** Identificar, por consenso de peritos, as competências de comunicação clínica/em saúde a ensinar aos estudantes de fisioterapia, na sua formação de base (licenciatura).

**Métodos:** De maio a setembro de 2020 procedeu-se à aplicação de questionários online a um painel de 21 peritos em comunicação clínica/em saúde, seguindo a técnica e-Delphi até se obter consenso.

**Resultados:** Foram identificadas 27 competências de comunicação clínica/em saúde, das quais 25 obtiveram consenso  $\geq 80\%$  na classificação do grau de importância, bem como as 10 mais importantes a ensinar aos estudantes de fisioterapia, no que respeita à sua formação de base (licenciatura).

**Conclusão:** O estudo permitiu especificar e listar as competências de comunicação centrais, na formação pré-graduada em fisioterapia, podendo futuramente servir como proposta de novos conteúdos programáticos nesta área, bem como no desenvolvimento de uma unidade curricular transversal aos cursos de licenciatura em fisioterapia do ensino superior em Portugal, procurando dotar os futuros fisioterapeutas portugueses com as mesmas competências de comunicação clínica/em saúde.

**Palavras-chave:** comunicação em saúde; técnica de Delphi; estudantes; fisioterapia

## ABSTRACT

**Introduction:** The high relevance of clinical/healthcare communication as a vital skill in the provision of care and paramount in healthcare education determined the relevance of its teaching, and recommendations are to introduce it in undergraduate learning.

**Objectives:** Identify, via expert consensus, the clinical/healthcare communication skills to be taught to physiotherapy students in their basic training (degree).

**Methods:** From May to September 2020 online questionnaires was implemented in a panel of 21 experts in clinical/healthcare communication, following the e-Delphi technique until consensus was attained.

**Results:** Twenty-seven clinical/healthcare communication skills were identified, of which 25 had a consensus of  $\geq 80\%$  in the ranking of the degree of importance, as well as the 10 most important to teach to physiotherapy students in terms of their basic training (degree).

**Conclusion:** The study allowed the specification and listing of the central communication skills in pre-graduate training in physiotherapy, which may serve, in the future, as a proposal for new syllabuses in this area, as well as for the development of a curricular unit that cuts across the higher education physiotherapy degree courses in Portugal, seeking to equip future Portuguese physiotherapists with the same clinical/healthcare communication skills.

**Keywords:** healthcare communication; delphi-technique; students; physiotherapy

## RESUMEN

**Introducción:** La gran importancia de la comunicación en materia de salud, como competencia vital en la prestación de cuidados y primordial en la educación sanitaria, determinó la pertinencia de su enseñanza, y las recomendaciones son introducirla en el aprendizaje de pregrado.

**Objetivos:** Identificar, a través del consenso de expertos, las habilidades de comunicación en salud que deben ser enseñadas a los estudiantes de fisioterapia en su formación básica (grado).

**Métodos:** De mayo a septiembre de 2020 se aplicó cuestionarios online en un panel de 21 expertos en comunicación en salud, siguiendo la técnica e-Delphi hasta alcanzar el consenso.

**Resultados:** Se identificaron 27 habilidades de comunicación en salud, de las cuales 25 tuvieron un consenso de  $\geq 80\%$  en el ranking del grado de importancia, así como las 10 más importantes para enseñar a los estudiantes de fisioterapia en cuanto a su formación básica (grado).

**Conclusión:** El estudio permitió especificar y enumerar las competencias comunicativas centrales en la formación de pregrado en fisioterapia, lo que puede servir, en el futuro, como propuesta para nuevos planes de estudio en esta área, así como para el desarrollo de una unidad curricular transversal a los cursos de grado de fisioterapia de la enseñanza superior en Portugal, buscando dotar a los futuros fisioterapeutas portugueses de las mismas competencias comunicativas en salud.

**Palabras Clave:** comunicación en salud; técnica Delphi; estudiantes; fisioterapia

## INTRODUCTION

The high relevance of clinical/healthcare communication, as a vital skill in the practice of care and fundamental in healthcare education, determined the importance of its teaching, particularly in undergraduate learning, inasmuch that such skills are continuously developed from the initial stage of training (Dong et al., 2015; Duffy et al., 2004; Morgado et al., 2019; Parry & Brown, 2009; Salgado et al., 2018; Taveira-Gomes et al., 2016).

The healthcare professional seeks to build the therapeutic relationship through communication; while communicating, they identifies and regulates expectations, analyses symptoms and feelings, combine treatment plans, and provides explanations and clarifications. Communication is, therefore, a key factor in the quality of the care provided, interfering with the users' adherence to proposals for additional diagnostic tests and treatment plans (Braga, 2014; Doorenbos et al., 2016; Manze et al., 2015; Tavakoly-Sany et al., 2020).

## 1. THEORETICAL FRAMEWORK

Over the last decade, clinical/healthcare communication skills in the higher education training of healthcare professionals have received special attention from researchers and competent bodies, both nationally and internationally. In 2011, the European Association for Communication in Healthcare (EACH), through the Core Curriculum subgroup of the Teach Committee (tEACH), presented the Healthcare Professions Core Communication Curriculum, for a core curriculum in clinical communication that cuts across all undergraduate training from all healthcare professions in Europe, created on the basis of consensus through a Delphi-like process (Bachmann et al., 2013; Loureiro et al., 2015). In Portugal, in 2016, Sociedade Portuguesa de Comunicação Clínica em Cuidados de Saúde (Portuguese Society for Clinical Communication in Healthcare) (SP3CS) is formally introduced, taking on the role of a centre for stimulating training and research in the teaching of clinical communication skills in the country.

According to the World Physiotherapy (WCPT, 2011), the curriculum should be designed to prepare students, including skills inherent in a professional physiotherapist, which encompass communication skills. In Portugal, the Physiotherapy education model abides by the guidelines of the Directorate-General for Higher Education, in accordance with the structure of the European Qualifications Framework. It includes communication skills in the physiotherapist's abilities, inherent in their professional skills at the degree level, which is the minimum academic degree for accessing the profession in Portugal. Likewise, Associação Portuguesa de Fisioterapeutas (Portuguese Association of Physiotherapists) (APFisio) made available in 2020 the revision of the document "The Profile of Physiotherapist's Skills", with the area of skill – communicator, deserving special visibility among the seven areas of specific skills, at the entry to the profession. This skill is defined as: "The physiotherapist develops and uses effective communication strategies to clearly, transparently and efficiently inform the user/group, and promote a good therapeutic and professional relationship. The communication strategy should serve the purpose of clarifying, involving and motivating the user/group in the Physiotherapy care process, aiming at their satisfaction. In addition to the beneficiaries of physiotherapy services, the physiotherapist also communicates with other professionals, and scientific, social and political communities" (APFISIO, p.13).

Thus, preparing physiotherapy students according to the recommended guidelines is paramount, as their communication skills will have a positive impact on the quality of healthcare services provided, in particular on users who have communication and language disorders, as these are an important hindrance in the communication process, with consequences in the therapeutic relationship (Eadie et al., 2018) and, therefore, in the adherence to the treatment plan and therapeutic gains.

Hence, with the purpose of specifying and listing the core skills of clinical/healthcare communication in basic training in physiotherapy, particularly in Portugal, a Delphi study was chosen, inasmuch that none of the guidelines for the teaching of physiotherapy is clear about which ones to teach.

The Delphi technique is a widely used and acknowledged approach to obtaining expert opinion, generating ideas and setting priorities on a topic, and is commonly used to develop guidelines with healthcare and teaching professionals (Barrett & Heale, 2020; Black et al., 1999; Marques & Freitas, 2018; McMillan, et al., 2016; de Villiers et al., 2005). It is a systematic and formal method of gaining expert consensus, which helps ensure the content validity of the results (Humphrey-Murto et al., 2017). This technique is used in the design of skill frameworks, for the development of units or curriculum plans in health areas (Bachmann et al., 2013; García de Leonardo et al., 2016; Gordon et al., 2015; Tognetto et al., 2019). It is referred to by the World Health Organization (WHO, 2014, p.206) as one of the three main formal methods of reaching consensus in the health sector, with the scope of physical therapy not being an exception, and researchers frequently use this technique with the same goals (Cook et al., 2018; Davies et al., 2017; Ingram, 1997; McGinnis et al., 2010; McMahan et al., 2014; Miller et al., 2020; Mori et al., 2015; Roberts & Cooper, 2020; Timmerberg et al., 2019).

Therefore, given the clear relevance and scientific evidence of clinical/healthcare communication skills, their teaching during undergraduate studies, as well as the Delphi technique, the results of this study seek to identify and list the core skills of clinical/healthcare communication to teach in basic physiotherapy training and make others (researchers, professional regulators,

policymakers) aware of the legitimacy of designing a specific and mandatory curricular unit in the curricular plan of the degree in physiotherapy, in the public and private education in Portugal.

## 2. METHODS

Considering its original form, also known as “Classic Delphi” (Keeney et al., 2011), the process consists of two or more rounds of questionnaires submitted to the experts’ panel. The first round is in the form of an open question, which allows participants to freely give their opinion on the topic, contributing to increasing the wealth of data collected and minimizing biases (Powell, 2003). The answers are then analysed by the researchers and sent back to the experts’ panel, in the form of a questionnaire, giving rise to the second round, which is more structured and in which the questions are put forth by items (pointed out by the experts). The participants are invited to respond by ranking or ordering these items (Yousuf, 2007) using scales of importance, the most common being the Likert scale (Romero-Collado, 2020). Each round is built with the results of the previous one, and rounds continue until a predetermined consensus is reached on some or all of the items (Keeney et al., 2011).

For a very good to good level of consensus, the most common thresholds range from 90%, 80%, 75%, two-thirds or 60%; a simple majority of consensus is reached with 51% (Davies et al., 2017; Hasson et al., 2000; WHO, 2014, capítulo 16, p. 205). Humphrey-Murto (2017) consider that a 70% consensus in the two upper levels in the ranking of the degree of importance of each item is reasonable.

According to some authors (Humphrey-Murto et al., 2017; Romero-Collado, 2020), there is no standard practice outlined for consensus studies with the Delphi technique, which was confirmed after exhaustive research. There are, however, recommendations regarding the selection of experts, the size of the expert panel, the number of rounds, the analysis of data, and the presentation of a clear consensus explanation (Keeney et al., 2011; Nair et al., 2011; Romero-Collado, 2020; Waggoner et al., 2016), to improve the quality and reliability of the results attained.

The term e-Delphi was originally used by MacEachren (2006), who associated the Delphi technique to the internet, using questionnaires in an online platform and, thus, offering incomparable advantages in terms of time, cost reduction and new data management and storage options, which makes it a relevant technique in reaching consensus (Donohoe et al., 2012; Romero-Collado, 2020; Toronto, 2017).

The main advantages of the e-Delphi technique are the communication via email and the implementation of online questionnaires, the time to weigh the answers, the collaboration of participants from different geographical locations, diverse institutions and with distinct academic backgrounds, thus increasing the heterogeneity of the experts’ panel and the anonymity among participants (Donohoe et al., 2012; Fink-Hafner et al., 2019; Romero-Collado, 2020), except for those indicated by other experts, but ensuring the anonymity of the responses.

### 2.1 Sample

The selection of the experts’ panel is one of the mainstays of the Delphi technique, ensuring the strength and reliability of the results, and researchers should use clear inclusion criteria to establish the limits for participation (Toronto, 2017).

Evidence also suggests that heterogeneity in a decision-making group may lead to better performance, particularly by considering all relevant aspects of the topic and tending to produce higher quality and acceptance solutions (Black et al., 1999; Lis et al., 2017; Powell, 2003).

Thus, the following criteria for inclusion of an expert in clinical/healthcare communication were defined: 1) be a doctorate, doctoral or master’s student, preferably in clinical/healthcare communication (Fisher & Keil, 2016; Persky & Robinson, 2017); 2) have more than seven years of experience as a trainer in communication skills for healthcare professionals, in particular, physiotherapists (Benner, 1982; Nunes, 2010; Persky & Robinson, 2017); 3) develop or have developed recent research in clinical/healthcare communication (Hall et al., 2018; King et al., 2008; Nunes, 2010).

### 2.2 Procedures and instruments

The study was approved by the Ethics Committee of the Fernando Pessoa University, and the form used received a favorable review by the Data Protection of the Fernando Pessoa Foundation.

Participants were initially selected through an online search of recent works in clinical communication with Portuguese authors and, subsequently, through the “snowball” effect. Thirty-two experts were identified and invited, with the final experts’ panel consisting of 21 participants, as the others declined the invitation or did not reply.

The invitation to join the experts’ panel was made by email, explaining the study’s nature, purpose and procedure. Informed consent was given when accessing the form used at the first round, guaranteeing the confidentiality of the participants and the data collected.

First Round – 1) sending to the 21 experts of the link to the form, with the sociodemographic characterization questionnaire, and the questionnaire with the starting question “As an expert in clinical/healthcare communication, regarding basic training for physiotherapists (degree), what communication skills should be trained with students?”; 2) analysis of the results and listing of all

the clinical/healthcare communication skills mentioned in the experts' answers (by the first two authors); 3) production of the second round questionnaire, based on the results of the first round; the skills identified, that emerged from the analysis of the answers in the first round, had as a reference framework for their definition the one found in works by Portuguese authors (Mota Cardoso, 2012; Sequeira, 2016).

Second Round – 1) sending to the experts who participated in the first round of the results of that first round, as well as the link to the form, with two questions. In the first question, experts were asked to rate the degree of importance of the skills identified in the first round, using a 5-point Likert-type scale (1 is “not important at all” and 5 is “very important”). In the second question, experts were asked to list, from the skills identified in the first round, the 10 that they believe are the most important to be taught to physiotherapy students during pre-graduation; 2) analysis of the results, by percentage; 3) production of the third round questionnaire, aiming to improve the degree of convergence of opinions among the members of the expert panel regarding the list of the 10 most important skills to be taught, insofar that, from those that gathered consensus on the degree of importance on the Likert scale, only nine were listed more frequently, with three emerging with the same frequency.

Third Round – 1) sending to the experts who participated in the second round of the link to the form with a single question, asking them to select only one clinical communication skill from among the three that attained the same degree of consensus in the previous round, and which they deem the most important, to be included in the list of the 10 skills to be taught to physiotherapy students in their basic training (degree); 2) analysis of the results, by percentage; 3) the study was concluded, after attaining a consensus on the responses received.

For this study, the e-Delphi technique was used in three rounds, and a consensus of  $\geq 80\%$  was established from the outset, which Grisham (2009) considers a good objective.

Data were collected from May to September 2020.

### 2.3 Statistical and data analysis

Data were subjected to analysis by the first two authors and treatment was performed using Microsoft Excel 14.0 (Office 2010) for Windows.

First Round – content analysis of the answers to the starting question, with a subsequent listing of all the clinical/healthcare communication skills identified in the experts' answers.

Second Round – after the sum of the two upper levels (4-Important; 5-Very Important) of the 5-point Likert scale, in the ranking of the degree of importance ascribed to each of the skills, those that attained a degree of consensus by the experts were identified (pre-defined)  $\geq 80\%$ .

Second and Third Rounds – calculation of the percentage of skills most often selected by experts according to their degree of importance, for later identification of the 10 most important ones to be taught to physiotherapy students.

## 3. RESULTS

The sample, according to the sociodemographic questionnaire, 80% are female and 20% male, with an average age of 44.50 years. Regarding basic training, 40% have a degree in physiotherapy, 20% in psychology, 15% in nursing and 15% in medicine, with the remaining 10% in pharmaceutical sciences (5%) and law (5%). Regarding the educational qualifications, 80% have completed their doctorate, 15% are doctoral students, and 5% have a master's degree. The sample has an average of 15.15 years of professional experience as a trainer/teacher in clinical communication for healthcare professionals and/or students, with the majority (80%) having teaching in Portuguese higher education as the main activity.

The e-Delphi study allowed the identification of 27 clinical/healthcare communication skills, of which 25 had a consensus  $\geq 80\%$  in the ranking of the degree of importance. It further allowed the selection of the 10 most important to be taught to physiotherapy students, regarding their basic training (degree) according to the opinion by consensus of the experts' panel. From the content analysis carried out to the answers in the first round, 27 communication skills were identified and sent to the experts for feedback and ranking of the degree of importance during the second round.

The analysis of the results of the second round, taking into account the predefined degree of consensus  $\geq 80\%$ , and after the sum of the two upper levels (4-Important; 5-Very Important) in the ranking of the degree of importance ascribed to each item, allowed concluding that 25 out of the 27 skills met a consensus. Empathy stood out, as it reached 100% consensus as “Very Important” and was also the skill most often listed (85% of experts) in the 10 most important ones to be taught to physiotherapy students regarding their basic training (degree). However, in that same list, it was found that after identifying the nine communication skills that attained the highest percentage of responses, there was a tie between the three capable of filling the 10th place (negotiation, support for autonomy and allowing silence). Negotiation was the skill selected by 55.6% of the experts in the third round, showing that it was in agreement with the 100% consensus on the degree of importance ascribed on the Likert scale (20% Important + 80% Very Important), compared to the other two skills.

In contrast, the confrontation, besides having not reached a consensus on the degree of importance, was not selected by any of the experts as one of the 10 most important skills.



Table 1 summarizes the results of the three rounds (27 communication skills identified; ranking according to their degree of importance; selection of the 10 most important ones according to the degree of importance ascribed).

**Table 1** - Summary of the results of the three rounds

	1th round	2nd round	2nd round	3rd round
	Clinical Communication Competence	Degree of Importance (Very Important + Important)	Selection by Importance	Selection by Importance
1	Empathy	100% (VI 100%)	85%	
2	Relationship/Alliance	100% (VI 80% + I 20%)	75%	
3	Active Listening	100% (VI 80% + I 20%)	65%	
4	Assertiveness	90% (VI 65% + I 35%)	65%	
5	Information Collection	90% (VI 65% + I 25%)	65%	
6	Accessible/Understandable Language	95% (VI 75%+ I 20%)	60%	
7	Suitability to the Subject/Context	100% (VI 70% + I 30%)	55%	
8	Information Sharing/Provision	90% (VI 65% + I 25%)	55%	
9	Encourage/Support	85% (VI 60% + I 25%)	50%	
10	Negotiation	100% (VI 80% + I 20%)	45%	55.6%
11	Support for Autonomy	90% (VI 60% + I 30%)	45%	27.8%
12	Allow Silence	85% (VI 65% + I 20%)	45%	16.7%
13	Summary/Synthesis	95% (VI 55% + I 40%)	35%	
14	Positive language	80% (VI 55% + I 25%)	35%	
15	Body Language	95% (VI 50% + I 45%)	30%	
16	Explanation/Clarification	90% (VI 65% + I 25%)	25%	
17	Social	90% (VI 50% + I 40%)	25%	
18	Exploration	95% (VI 40% + I 55%)	20%	
19	Feedback	85% (VI 60% + I 25%)	20%	
20	Interpretation	80% (VI 50% + I 30%)	20%	
21	Validation	90% (VI 55% + I 35%)	15%	
22	Paralanguage	90% (VI 40% + I 50%)	15%	
23	Focusing	90% (VI 40% + I 50%)	15%	
24	Reformulation	85% (VI 70% + I 15%)	10%	
25	Argumentation	80% (VI 20% + I 60%)	5%	
26	Touch	75% (VI 25% + I 50%)	20%	
27	Confrontation	75% (VI 10% + I 65%)	0%	

#### 4. DISCUSSION

This study relied on the collaboration of a heterogeneous panel of experts in clinical/healthcare communication from several higher education institutions with extensive experience in the fields of teaching and research and with relevant knowledge in the topic, thus contributing to increasing the validity of the content of the results, as supported by several authors (Hasson et al., 2000; Lis et al., 2017; Powell, 2003).

The ranking and selection, by the experts' panel, of the 10 most important clinical/healthcare communication skills are supported by previous studies, particularly those that attained 100% consensus in the ranking of the degree of importance and were listed by a majority: 1) "Empathy"; Bayliss and Strunk (2015), the authors of the study on empathy changes during student training, consider that empathy is a skill that can be learned/trained and describe it as a critical communication skill and an integral part of effective therapeutic communication, improving outcomes and therapist satisfaction; 2) "Relationship/Alliance", in a recently published article (Brun-Cottan et al., 2020), the therapeutic relationship physiotherapist-user is referred to as paramount, and its effect may be as relevant in the results as the intervention chosen, and its teaching should be incorporated into the physiotherapists' basic training; 3) "Active listening" is mentioned in a study with users in the terminal phase (Andrade et al., 2013) as one of the main communication skills needed by healthcare professionals; it must be attentive and reflective, so that they can identify the real needs of users, demonstrating availability; 4) "Suitability to the subject/context", is supported by a study to identify the fundamental elements of the communication of clinical reasoning (Ajjawi & Higgs, 2011); the results of this study reveal that it was perceived by physiotherapists as more than a simple delivery of a message, as they considered the target audience (users or healthcare professionals) and the context; the authors deem that their teaching needs to be integrated into the physiotherapy basic syllabus.

In line with the definition of "Classic Delphi" (Keeney et al., 2011), three rounds were needed to reach consensus, which is also in agreement with the results of a systematic review of 100 Delphi studies (Diamond et al., 2014). In this study, a relevant number of studies ended on the third round; the same systematic review also corroborates the number of 18 experts who answered the last question, being within the range of 11 to 25 experts that most studies had in the final round.

In a scoping review of the use of Delphi or other group consensus methods in medical education research, Humphrey-Murto (2017b) concluded that the Delphi technique is the most used (76.2%), with the most common purpose being the development of a new curriculum or its redesign, and used mainly to address issues at the national level, rather than at the international or local level.

Of the wide range of senior diagnostic and therapeutic technicians, only physiotherapists were represented, as others did not meet the inclusion criteria, did not reply or declined the invitation, which is a limitation of the study. Notwithstanding this fact, the quality of the experts' panel is a strength of the study, as it includes members of Sociedade Portuguesa de Comunicação Clínica em Cuidados de Saúde (Portuguese Society for Clinical Communication in Healthcare) (SP3CS) and Associação Europeia para a Comunicação em Saúde (European Association for Communication in Healthcare) (EACH), adding to the validity of the content of the results.

In view of the results (skills that attained 100% consensus in the ranking of the degree of importance and were listed by a majority), and considering the diversity of the population that uses the services provided by physiotherapists, it is suggested that future research identifies skills and strategies of specific communication aimed at users with communication difficulties due to language alterations, as these interfere in the therapeutic relationship, negatively conditioning the course of rehabilitation, particularly with the elderly population, which naturally has comorbidities and changes inherent to age.

#### CONCLUSION

By identifying, by consensus of experts (Delphi), the core skills of clinical/healthcare communication to be attained in basic physiotherapy training, the study allowed specifying and cataloguing these skills, adding to the production of a set of data that may serve, in the future, as a proposal of which skills to consider for inclusion in the syllabus of the degree in physiotherapy. These will possibly lead to the redesigning or development of new syllabuses in this area, as well as the possible design of a specific curricular unit that cuts across the degree programs in physiotherapy in Portugal, standardizing its teaching, thus fulfilling one of the purposes of the study.

Hence, to understand whether the programs/study plans of the physiotherapy degree of Portuguese higher education institutions focus on the training of skills in clinical/healthcare communication, determined by the existing guidelines and whether they are in accordance with the results of this e-Delphi, the authors propose to develop a study of Document Comparative Analysis of physiotherapy degree programs in Portugal.

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