

Assessment of professionalism in students of health-related courses: a systematic review

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Professionalism has been intensely debated in the last decade on the global stage and especially in the USA, and has been recognized as a skill that should be developed by all health professionals.

Objective: The aim of the present study was to assess professionalism among graduates of health-related courses on a worldwide scale. **Methods:** Systematic review following the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). **Results:** The review found seven studies that included an assessment of professionalism. Of these seven articles, two were close to the levels of “Knows” and “Knows how” on Miller’s adapted pyramid for assessing professionalism. The other five studies were more related to the levels of “Shows” and “Does”, demonstrating a practical dimension for the assessment. Evaluating professionalism is a great challenge. Further studies are required to measure other, more global aspects of professionalism.

Keywords: Professionalism. Teaching and learning. Assessment.

Introduction

The contemporary tendencies of health care practices became the focus of debates and reflection as we moved into the 21st century. The inequality of health found within and between nations, in terms of scientific, technological, social and educational factors, must be reexamined, interconnecting the challenges of local and global health, as well as concepts related to full citizenship, globalization, social responsibility and professionalism, engendering possible roles to overcome existing challenges^{1,2}.

In this context, debates about the teaching and learning process in the area of health demonstrate professional training that focuses on the quality of the healthcare provided, with special emphasis on scientific and technical abilities, the importance of ethical and humanistic competencies and healthcare guided by ethical and humanistic values, as well as dedication to the wellbeing of patients, even at the expense of personal interests².

Scientific evidence related to medical practices highlights a moment of collapse, in which technicism and economic interests have often taken priority in healthcare decisions, at the expense of the real needs of individuals, families and communities^{3,4}. According to Goldie⁵, the relationship between the medical class and society has become very tense in recent years and is characterized by unprofessional behavior, which lacks the fundamental values and character of ethical standards.

Discussions of “professionalism” have become more common in this context and it has become a cornerstone of the social contract between the medical professional and the general public. Professionalism appeared in a context of the urgent need to renew the teaching methods of practical medicine. It was defined as a set of skills associated with the judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, ethics and reflections in daily practice, for the benefit of the individual and the community⁴.

This theme became a component of the formal curricula of Medicine courses and can still be developed in the daily practices of health teaching through hidden curricula⁴. Discussions of the importance of its inclusion in curricula and practice have been ongoing for some time, especially since 2002.

When European and American medical communities began to discuss the demands of the health profession, culminating in the creation of a missive that contained the principles of *professionalism*: a new competence that was added to the set of medical skills⁶.

Among these principles are: the principle of primacy of welfare patient, understood as an action that takes into account the interests of patient; principle of patient autonomy, which means that professionals should be honest with their patients, empowering them for making informed decisions; it's the principle of social justice, and the medical profession responsible for fair distribution of care resources to health⁷.

Thus, professionalism appeared as an essential skill for health professionals around the world and was part of the debate about what was required in good medical practice⁷. It is reflected in the attitudes, behavior, character and standards of adequate practice and personified by familiarity with the codes of ethics and standards established by institutional medical organizations⁸⁻¹⁰. Therefore, professionalism was recognized as an ideal to be followed by professionals and established as a commitment on behalf of professionals to attain high quality levels of healthcare^{1,11}.

Nevertheless, there remains the question of how to teach/practice/assess professionalism in a responsible manner, prioritizing the principle of justice and thereby giving individuals a professional *ethos* that combines technical/scientific skills with human abilities^{8,12}.

Very few studies in the scientific literature have focused on assessing professionalism in health students and determining how this competence has been managed by professors and learned by students worldwide.

Corroborating the numerous aforementioned dimensions that make up the concept of professionalism, evidenced by Rego⁷, Pearson and Hoagland¹³ defined professionalism as a multifaceted concept which is difficult to measure. Many attempts have been made to

measure professionalism but there is a prevalence of very subjective and unreliable assessments that focus on judging teachers and specialists.

However, some objective instruments have been used for this purpose, in order to capture some of professionalism dimensions¹⁴. It is known that professionalism should be assessed longitudinally and combine different approaches to collect the personal, interpersonal, institutional and social characteristics of the individual assessed, which is an international challenge¹⁵. Faced with this question, it stands yet the importance of qualitative evaluation of the attributes of professionalism, in view the concept of complexity and its practical application^{4,16}.

Based on these considerations, the following guiding question was defined for the present study: how has the theme of assessing the professionalism of graduate students in health courses been approached in the scientific literature?

Therefore, the aim of the present study was to analyze how the professionalism of graduate students in health courses has been assessed around the world.

Methods

Study Design: This systematic literature review was performed following the recommendations of the adapted Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guide adapted. The main focus of the review was to identify studies that assessed professionalism among graduate students of health courses around the world^{17,18}.

Search Strategy: The following databases were consulted: *LILACS (Literatura Latino-americana e do Caribe)*; *Medline (Medical Literature Analysis and Retrieval System Online)*; *Scielo (Scientific Electronic Library Online)*; *Biblioteca Virtual em Saúde (BVS)*; *Eric (Institute of Education Sciences)* and *Pubmed*.

The keyword professionalism, education and health (and their equivalents in Portuguese and Spanish) were used. Complete articles in English, Portuguese and Spanish were selected and their titles and abstracts were read. The trigger question that motivated the revision of studies and enabled a greater approximation of the researchers and the

theme was as follows: *What has been published about the theme of professionalism in the literature of the world?* After analyzing the data found using this question, the data were thematically organized. The central theme of the article was defined as the assessment of professionalism among graduate students, with the definition of other inclusion criteria.

The time frame established for article selection was between 2002 and 2014. This decision was based on the fact that in 2002, European federations and medical organizations conducted a broad discussion about the theme of professionalism and subsequently created a missive that listed the fundamental principles and main responsibilities/commitments of professionals in order to exercise this competence.

Inclusion Criteria: Articles were included if: they contained the theme of assessing professionalism; their target public was graduate students in health courses; they addressed longitudinal assessments of the attitudes/ abilities associated with professionalism; they conducted at least two assessments before and after interventions that addressed the theme of professionalism; the students were registered between 2002 and 2014. Figure 1 displays the fluxogram of identification and selection of articles for the systematic review.

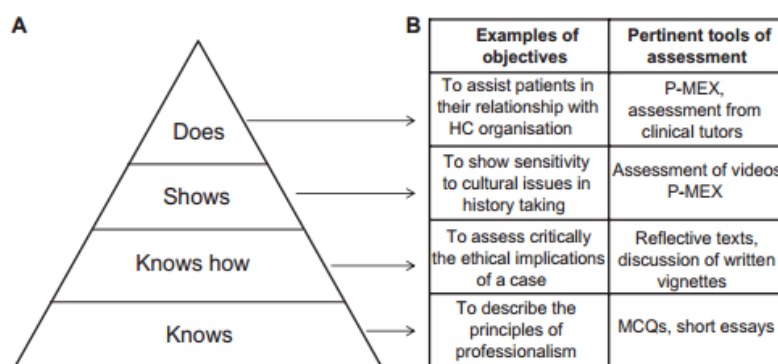


Figure 1. Fluxogram of the identification and selection of articles for a systematic review of the theme of professionalism

A study by Consorti et al.¹⁵, which included the adaptation of Miller's pyramid model to assess professionalism (Figure 2), was used as a theoretical reference to discuss the assessments.

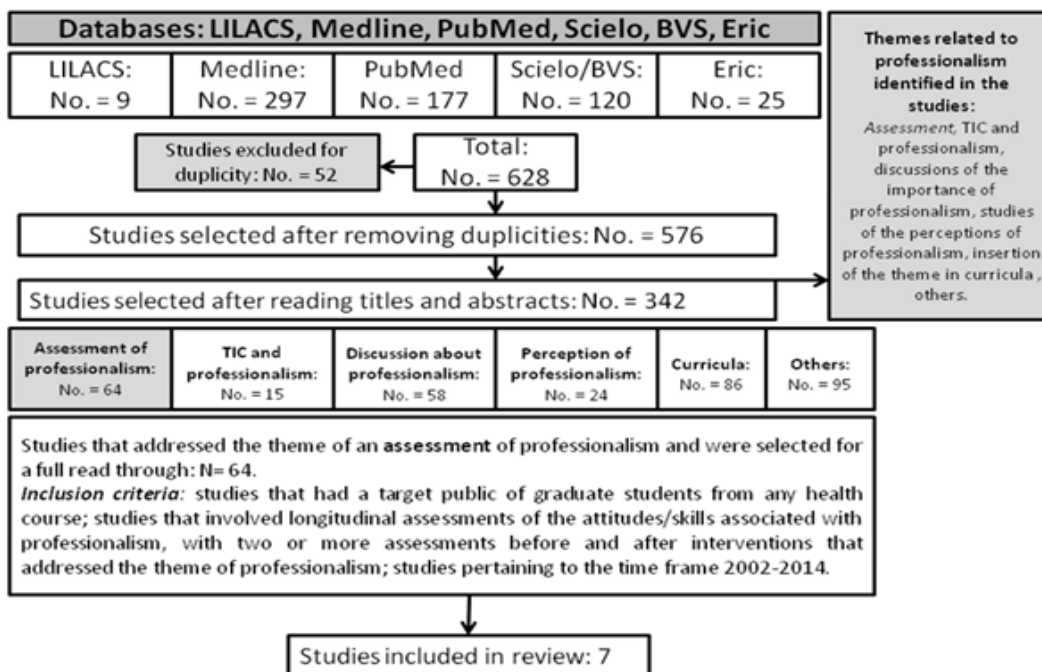


Figure 2. The adaptation of the pyramid of Miller model to assess professionalism.

(A) Examples of objectives relevant to progressive levels of professional competence.

(B) Examples of pertinent assessment tools. Abbreviations: HC (health care); MCQs (multiple-choice questions); P-MEX (Professionalism Mini Evaluation Exercise)

Results

The database search resulted in an initial identification of 628 articles. Subsequently, 52 articles were excluded due to duplicity, resulting in a new total of 576 articles. The titles and abstracts of these articles were read and 234 studies were eliminated because they did not address the theme of professionalism. At this stage of the review, 342 studies remained. These articles were subjected to thematic categorization: 64 articles were found to address the assessment of professionalism; 15 studies linked Information and Communication Technologies (ICT) with professionalism; 58 articles included debates, opinions and discussions about the importance of professionalism in health education; 24 studies addressed the perception of professionalism reported by students, professional and users of healthcare services; 86 studies dealt with attempts to include professionalism in curricula and associated didactic-methodological strategies; and 95 studies involved different research and experiences related to professionalism.

After this phase, the objective of the study and the discussion of articles that assessed professionalism were defined, based on the abovementioned inclusion criteria. Ultimately, seven articles were included in the present systematic review. These were read in their entirety and analyzed as described in Chart 1.

Author (s)	Period of the study	Location	Population	Objective	Assessment method used	Main results
Biagioli et al 2011	2007– 2010	USA	Medicine students performing the surgery internship (N= 2034).	To determine whether a brief student survey can differentiate amongst third-year clerkship student's professionalism experiences and whether sharing specific feedback with surgery faculty and residents can lead to improvements.	Likert scale which evaluated: Excellence, Honor/Integrity and Altruism/Respect.	The scores of students who were performing their surgery internship were lower (for the items Excellence Altruism/Respect) than for students from other medical specialties, such as internal medicine, family medicine and rural medicine. For all specialties, the sub-group Altruism/Respect received the lowest scores. After the specific interventions the scores improved significantly.
Huntoon et al 2012	2011	USA	Medicine students (N= 158).	To evaluate the impact of a single, practical advocacy experience on the attitudes and perspectives of physicians-in-training in	Likert scale applied before and after an experience of legislative defense in health. In the post-defense experience,	The results the improvements in skills and attitudes after the advocacy in health, received a high score, thereby demonstrating that the training developed important skills associated with professionalism among the

				the context of a growing recognition of the need for advocacy training.	another scale containing questions was applied.	students assessed.
Chaytor et al 2012	2006– 2009	United Kingdom	Three cohorts of Medicine students from years 1 and 2 of the course.	There was no explicitness in relation to the objective. A key question is whether professionalism is a fixed characteristic or whether it can be promoted over time.	The Conscientiousness Index (CI) was used. Variables evaluated: obedience, discipline, organized and integral behavior while performing their tasks and during academic activities.	The CI scores were generally high in the three cohorts of students (more than 90% for both years 1 and 2), suggesting that these groups were highly aware. No significant difference between the first and second years of the study, suggesting that it is a stable characteristic and it is not modified by education and clinical exposure.
Redwood and Townsend, 2011	2009 and 2010	Australia	Two cohorts (N=67 in 2009; N= 70 in 2010) of students from the second year of the graduate course in	To investigate changes in dental students' perceptions of professionalism, knowledge and emotion over the period of dissection in a human	Skills assessed (Likert scale): Professionalism, Knowledge and Emotion before and after the head and neck dissection course	The evaluations revealed different scores for each question asked, with some attributes that evaluated more than others (results in Article 23).

			Dentistry	anatomy course.	in the discipline of Anatomy, which lasted from 8 to 10 weeks.	
Papageorgiou et al 2011	2006–2007	United Kingdom	Students of Medicine from years 1, 2, 3, 4 and 5 (N= 2.519).	To evaluate medical students' perceptions of the consultation skills teaching sessions on a five year undergraduate MB/BS (Degree of Bachelor of Medicine and Bachelor of Surgery) program at a new medical school.	The study in question was longitudinal, a quantitative section (Likert scale) and a qualitative section, that were applied at the end of each teaching session that addressed the theme of consultation.	The survey revealed that there was learning professionalism by students: improving communication skills with the patient (verbal and nonverbal), proper management of emotions, teamwork and balance of interests of the physician and the patient.
Brehm et al., 2006	Not provided in the study.	USA	Students from different areas of health.	To provide interdisciplinary structured activities in academic and clinical settings and introduce the concept of	The research developed in two phases: interdisciplinary guidance on the professionalism and	≥ 91% students found that learning/ awareness of the professionalism benefited their professional activities (respect for patients and colleagues, responsibility, flexibility, reliability, ethics, teamwork, confidentiality,

				professionalism to health students.	field experience. Evaluation: Likert Scale.	secrecy, honesty and trust).
Zink, Halaas and Brooks, 2009	2004 and 2005	USA	Third year Medicine students (N=95).	To examine the components that are part of developing professionalism during the Rural Physician Associate Program experience, a 9-month rotation in a rural community during the third year of medical school.	Study qualitative, longitudinal study (9 months) that evaluates the development of professionalism in students during the rural health practices.	The research confirmed that the experience promoted a positive model of behavior among students, associated with all of the domains of professionalism, from good example of preceptors, attitudes towards the patient and their illness, compassion and respect for diversity.

Chart 1. Results of the main assessments of professionalism conducted together with graduate students from the area of health, according to the international literature.

The 7 articles were published between 2006 and 2012 and were conducted in the USA (Biagioli et al.¹⁹; Huntoon et al.²⁰; Brehm et al.¹²; Zink, Hallas and Brooks⁴); the UK (Chaytor et al.²¹; Papageorgiou et al.¹⁶) and Australia (Redwood and Townsend²²). Thus, the majority were published in the United States after the year 2011, which further highlights the fact that the debate about assessments of professionalism has gained importance in recent years.

The characterization of the studies revealed that most of them involved students of Medicine (n=5), Dentistry (n=1), Pharmacy, Nursing and other disciplines (n=1). Four of the studies analyzed used the results of surveys that assessed professionalism quantitatively using Likert scales and the “student behavior measurements” of Biagioli et al.¹⁹ and Chaytor et al.²¹ (knowledge, emotion, excellence, honor/integrity and altruism/respect; another study assessed professionalism in terms of obedience, discipline, organization and the performance of academic tasks). The studies also included “assessments related to the application of teaching experiences seeking to develop professionalism” (training in defense legislation in health; course of anatomical dissection; teaching consultation skills using the Calgary–Cambridge method; one survey addressed guidance related to the theme of professionalism and a field experience; as well as an assessment of the clinical experience of students during the rural internship).

Based on these considerations, it was clear that the studies conducted by Biagioli et al.¹⁹ and Chaytor et al.²¹ assessed professionalism from the point of view of competencies. The former addressed human competencies linked to personal values developed by students, which were assessed using closed scales, in order to confirm the student’s attitudes during the surgery internship. In the latter study, the approach was centered on the use of the Conscientiousness Index (CI), which is one of the existing validated tools that are used to assess professionalism in terms of professional conduct and ethics (organization, responsibility, discipline, performance of tasks, among others). Both studies come close to the “*Knows*” and “*Knows how*” levels of Miller’s adapted pyramid, as used to assess professionalism in the study by Consorti et al.¹⁵.

The other studies (Papageorgiou et al.¹⁶; Redwood et al.²²; Huntoon et al.²⁰; Brehm et al.¹²; Zink, Halaas and Brooks⁴) used assessments of professionalism associated with

practical experiences and the application of health teaching strategies, thereby demonstrating a dimension of doing/simulating. These studies reached the “*Shows*” and “*Does*” levels of the pyramid represented in Figure 2 of the present study, revealing a dimension of the research in the practical field.

Based on these results, it is possible to deduce that the studies presented in this review assessed a number of aspects of professionalism but did not address its development from a more global perspective or associate personal, interpersonal, social and institutional dimensions, which is important in any assessment of professionalism.

Discussion

The results of the present study demonstrated that the processes of assessing professionalism are still poor around the world. It is only taught in health education facilities in some developed countries and others that have reached their maximal degree of crisis in practical medicine education, due to the primarily biologically-centered and medicalized nature of these practices, as in the case of the USA.

Professionalism is a theme that has emerged and gained importance in the last 10 years, although studies related to professionalism are still focused on discussions about its significance and inclusion in curricula. It is essential to recognize that the theme of assessing professionalism, focusing on the tools and methods used, is a contemporary question and the central motto has been defined by the period of training that should be included and what roles are performed in this process.

Chart 1 revealed that professionalism was only assessed in terms of behavioral aspects (personal, assessed by the students themselves) and its development in the practical field, which denotes restricted aspects in this subject. Goldie⁵ reported that professional behavior is also influenced by situational and contextual factors that arise during the learning and practical processes.

Thus, an assessment of professionalism should include an assessment of colleagues, health professionals or patients, thereby addressing individual, interpersonal, social and inter-personal aspects⁵.

The same author recognized that no tool in isolation is capable of measuring the performance of an individual in all of the abovementioned dimensions, particularly when referring to multi-dimensional constructions such as professionalism. However, special attention should be paid to the expertise of the assessor, the validity of the tools used and adequate sampling of the participants. To do so, a triangulation of different assessment methods has been suggested, as well as training those involved.

Currently, the most commonly used methods/tools to measure professionalism are pair assessments, observations by faculty members (using standardized confirmation lists), reflective portfolios developed by students and discussions of ethical dilemmas. However, more complete assessment methods should include contextual and social aspects and need greater development⁵.

As well as this more global aspect of the assessment, it is also extremely important that the assessment is always accompanied by feedback in order to improve the performance of teams and to stimulate reflection about the attitudes involved. The aim of the assessment and its development and longitudinal monitoring should be explained and it is important to clarify if it is summative or formative. Goldie⁵ recommended the use of tools that enable descriptive and interesting comments. An assessment of professionalism should also include situations that involve conflicts and the proposal of solutions for the dilemma.

Biagioli et al.¹⁹ demonstrated that the evaluative scores for professional behavior by students during the surgery internship significantly improved after meetings to discuss the first assessment and provide feedback about unprofessional behavior that needed to improve (excellence and altruism/respect), thereby showing that the technique should be an important component of assessment processes. It is important to note that the scores for these questions were lower for surgery students than for those involved in family, internal and rural medicine.

Chaytor et al.²¹ demonstrated that students in years 1 and 2 of the Medicine course exhibited great knowledge and awareness of their professional roles (levels 1 and 2 on Miller's pyramid – Figure 1). This could be associated with the professional ideal that the students brought with them to the medical schools. This ideal may not have been affected by

the context, practices and behavioral models that professional exhibited and could have influenced the vision of the students positively or negatively.

It is known that factors such as the resources available and the structure of health services have a significant effect on the attitudes and behavior of doctors. Teachers of medicine who studied how to develop professional attitudes and behavior among medicine students and residents stated that the characteristics of professional behavior (professional model/example, with virtuous attitudes) are the most effective methods of instilling professional behavior in students². It seems that placing students in practical situations with a professional model is a great strategy for developing their professionalism.

With regards to the five studies classified in the *"Show" and Does"* domains of Miller's pyramid (Papageorgiou et al.¹⁶; Redwood et al.²²; Huntoon et al.²⁰; Brehm et al.¹²; Zink, Halaas and Books⁴), there was a notably positive assessment of professionalism after the interventions and/or field experiences, with improvements in the ability to communicate with the patient, health education, respect for the inter-disciplinary team, secrecy and attitudes such as compassion and respect for diversity. Furthermore, in a number of studies, the students stressed the importance of including professionalism in health education and stated that the discussions provided a greater awareness of the subject.

According to Daaleman et al.²³, the basis of an understanding of professionalism is the habits and attitudes demonstrated by individuals through good examples and intrinsic values, which are incorporated into learning environments.

Recently, five important themes were classified in relation to measuring professionalism, which can be summarized as follows: adherence to the ethical principles of the practice; effective interaction with patients and their significant others; effective interaction with other health professionals; reliability and commitment to competence¹⁴. This study also highlighted the lack of clarity about the fact that professionalism is acquired or learned as a developing concept or competence.

Using these five themes, it is possible to consider that a global assessment of professionalism would involve aspects of the four levels of Miller's pyramid, using tools and methods that observe and measure the interaction between subjects (student-teacher-patient-institution), in terms of behavior, as well as cognitive aspects (dimension of

knowledge), which are essential to medical practices that are guided by ethical principles and the benefit for patients.

Final Considerations

The results of the present study provide evidence that goes against the literature studied. Assessing professionalism in graduate students of health courses is a great challenge, given that its effectiveness demands the measurement of more global aspects, such as personal, interpersonal, institutional and social dimensions.

This process is often hindered by a lack of knowledge on behalf of the subjects involved in relation to reliable assessment tools, the concept of professionalism, the importance of its inclusion in formal curricula (as well as hidden curricula), and the time involved in this (longitudinal) process.

Thus, the importance of expanding this theme is clear, with a view to including it in professional health training and minimizing the effects of the crisis that health practices have been experiencing due to unprofessional behavior, which is compromised from a moral and ethical perspective.

Studies of professionalism and scientific production of this theme indicate the need to review traditional educational paradigms (rigid models) and create a process that enables a renewal of thoughts and behavior, recognizing professionalism as a complex challenge that demands new methods of teaching and learning.

Therefore, there is a need for innovative teaching strategies that allow students to develop professionalism and legitimately engage in issues related to ethics, citizenship and social responsibility.

Collaborators

All authors participated in the research stages, construction and revision of the article.

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