





Interdisciplinary and interprofessional teaching in a Brazilian medical school

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ABSTRACT

Interprofessional Education (IPE) is an international trend contemplated by the National Curriculum Guidelines for higher education in health professions that offers unique training possibilities on the multiple dimensions of the needs of health system users. The Ribeirão Preto Medical School at the University of São Paulo hosts 06 undergraduate programs in health in addition to medicine, which can be a field for effective training that emphasizes teamwork. **Objective:** this study aimed to evaluate the ways in which the experiences of multiprofessionality and interdisciplinarity (MP/ID) are offered and perceived by undergraduate medical students at FMRP. **Method:** in an initial phase, the class plans and syllabus of all courses of the medical program of year 2017 were submitted to the reading of all their sessions (title, justification, objectives, teaching activities and bibliography) and searched for the terms 'multiprofessional' and 'interdisciplinary' or their variations, which were tabulated in spreadsheets and classified according to the year the course was offered: in the basic cycle (first two years), clinical (two intermediate years) and internship (two final years). **Results:** The related terms of the MP/ID were identified in 11 (13.9%) of the 79 courses of the medical program mandatory curriculum, being more frequent at the internship. **Conclusion:** In the formal aspect the training experience for MP/ID performance was small, despite increasing throughout the medical class program.

Keywords: Interdisciplinary practices, Education, Human resources training

INTRODUCTION

Interprofessional learning can be understood as the result of organizing the teaching process by offering theoretical and practical content from different areas of knowledge that relate to different professions. It can be achieved through the professional experience acquired in practical settings, leaning in professors of varied training and students from different career courses. Interprofessional Education (IPE) is a model of great relevance for the training of health professionals^{1,2}. This didactic proposal is an international trend in health education, by directing the learning model to the multiple dimensions of the health needs of users and the community^{3,4}.

This approach focuses on improving health services comprehensively when addressing continuing care, equity between professions, teamwork and articulated decisions promoting an environment for problem solving and decision making involving multiple professionals^{1,4-7}.

The National Curriculum Guidelines (NCGs)⁸ for higher education programs on health professions highlights the commitment to the construction of teaching projects seeking to offer shared therapeutic plans, as well as the development of communication, administration, management and leadership skills and competences. However, health practices are still far from ideal education models: teaching is carried out, for the most part, within each professional category, in contrast to the country's public health policy proposals, which demand service practices that are increasingly more collaborative.⁹

The lack of knowledge about interprofessional practices results in students who are unaware of IPE scenarios and who become less positive about this practice^{1,10}. Medical students tend to have more negative attitudes towards IPE, showing more protective behavior regarding their work practices, in relation to students from other programs¹¹⁻¹³.

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In 2018, FMRP-USP hosted 07 undergraduate programs on health: Medicine, Speech Therapy, Biomedical Informatics, Nutrition and Metabolism, Occupational Therapy and Biomedical Sciences. The Ribeirão Preto campus of USP was also the headquarters of the Nursing, Psychology and Physical Education programs, all involved in health care and sharing learning scenarios. These programs have committed to the restructuring of their Political Pedagogical Projects and their curricular organizations aiming to meet the determinations of the National Curriculum Guidelines (NCGs), which, for the Medical program, reinforces the need for training that emphasizes teamwork⁸.

Thus, the objective of this study was to evaluate how the experiences of multiprofessional interaction and interdisciplinarity are offered for the undergraduate medical students at FMRP.

METHOD

As this is exclusively an evaluation of documents publicly available on the platform to support graduation on the internet, this study would not need an ethical evaluation, but it was nonetheless approved by the FMRP-USP Undergraduate Committee and the Research Ethics Committee of the Hospital das Clínicas, FMRP-USP.

Documentary survey

To identify the occurrence of MP/ID scenarios and contexts in the classes and internships in the medical program, all the syllabi and class plans of the courses offered in 2017 were retrieved from the internet portal that provides undergraduate information (Jupiter System). In these documents the following words were searched: "multiprofessional", "interprofessional", "multidisciplinary" and "interdisciplinary". The occurrences of these words were recorded in a systematic way in electronic spreadsheets, considering the course

year, name of discipline and where it was found (title, justification, objectives, teaching activities and bibliography).

At FMRP-USP, optional courses are offered for specific years of the medical program, with the choice and fulfillment being mandatory in predefined weeks of the year, usually at the end of terms. Participation in these classes depends on the number of vacancy available and the student's classification based on their weighted mean scores, which give them priority to choose.

Statistics

For some assessments, the course was divided into three cycles: basic (1st and 2nd years), clinical (3rd and 4th years) and internship (5th and 6th years).

Having an exploratory character, the emphasis of the presentation of the results was to summarize the answers. For the quantitative variables, measures of central tendency and dispersion were calculated. For qualitative variables, tables were drawn up with the percentages of occurrences in each category. When hypotheses were formulated, the appropriate statistical tests were used, considering the significance level of 5%.

RESULTS

Table 1 presents the synthesis of the search for the terms described from the syllabi and plans of the mandatory classes of the Medical School at FMRP. Most of the courses did not contain any mention of any of the terms in their syllabi, neither in the objectives, class plans and activities, assessment or bibliography. The proportion of courses that mentioned the terms in question increased as the course evolved from the basic cycle (initial two years), to the clinical cycle (third and fourth years) and, finally, to internship (fifth and sixth years).

Table 1 – Number of courses with the search terms of MP/ID in the syllabus and class plans of the Medical School of FMRP in 2017

Medical Program Years	Mandatory Courses (hours)	Courses with search terms (%)	Mandatory Credits	Credits related to courses with search terms (%)
1 st	10 (900)	0	60	0
2 nd	14 (1,275)	1 (17.14)	85	4 (4.75%)
3 rd	16 (1,365)	1 (6.25%)	91	13 (14.3%)
4 th	24 (1,500)	2 (8.33%)	93	11 (11.8%)
5 th	7 (1,550)	2 (28.5%)	97	22 (22.7%)
6 th	8 (1,890)	5 (62.5%)	72	38 (52.7%)
Total	79	11 (13.9%)	498	88 (17%)

In the basic cycle (1st and 2nd years), only one second-year course among 24 mentioned the term “multidisciplinary” in its objective description. However, the term “interpersonal” was found in three other courses and deserved to be mentioned due to the semantic proximity of the contexts within which it was found. (Table 2)

Among the 40 disciplines in the clinical cycle (3rd and 4th years), three presented search terms (“multiprofessional” and “multidisciplinary”) in the activities syllabus and plans. In this cycle courses, no terms with semantic similarity to the subject of this research were found.

Seven internship stages have the terms “multidisciplinary” in their activity plans and one presented the term “Intersectionality”. Considering the course hours, these stages make up

36.8% of the total workload of the internship (4,685 hours).

Only four of the 109 elective courses offered between the 1st and 5th year in 2017 have the terms sought, being two between the 1st and 2nd graduate years and two between the 3rd and 4th years. In the first two years, the term “Transdisciplinarity” appears in the bibliography and the term “Multiprofessional” once in the activities plan. In the optional courses offered at the 3rd and 4th years, the terms were not found. It is worth pointing out that all courses, both mandatory and optional, have the term “multi-departmental” in their syllabus. Also, the free optional discipline “RFO3221-Fundamentals of Brazilian Sign Language (LIBRAS)” deserves to be highlighted, as it is an option of the Speech Therapy program offered to medical students.

Table 2 - Description of the occurrences of the terms searched and similar terms in the mandatory classes of the FMRP medical program cycles.

Year	Courses with mention of terms
	A mention of the search term: RCG0285 - Cancer Biology - Objectives: To provide current and multidisciplinary knowledge in the field of cancer biology for undergraduate students.
1 st and 2 nd	Three mentions of similar terms: RCG0122 - Community Health Care - Bibliography: Silva M.J.P. Communication has a remedy. Communication in interpersonal relationships in health. São Paulo: Edições Loyola, 4th. Edition, 2006. RCG0248 - Humanistic Training III (Medical ethics) - Objectives: To develop interpersonal communication skills in the student within the scope of the patient, family, health team and community, to discuss persistent and emerging bioethical issues. RCG0249 - Community Health Care - Bibliography: ZOBOLI, E. Ethics of care: a reflection on the care of the elderly from the perspective of interpersonal encounters. Collective Health 2007; 04 (17): 158-163.

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Table 2
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Year	Courses with mention of terms
3 rd and 4 th	<p>Three mentions of the terms searched: RCG0432 Digestive System - Description of Activities Along with Clinical Oncology: Students accompany the care of patients with neoplasia of the digestive tract with emphasis on aspects of communication, access to care, natural history of the disease, aspects of screening, diagnosis, cancer treatment with a multidisciplinary approach and prognosis" RCG0433 Cardiovascular System - Study Guide - Multiprofessional approach to hypertensive patients. RCG0461 Embrace in Emergencies - Introduction: "... at this stage held at the Emergency Unit, emphasis will be placed on multiprofessional welcoming to patients and families in emergency situations." Specific objectives: "To develop skills for multiprofessional performance in the management of patients with a high problem."</p> <p>One related term: RCG0510 - Integrated Internship in Health and Community Medicine centers Objective - "4. Understand and concept primary health care related practices: integrality, intersectionality"</p> <p>Specific term: RCG0513 - Internship in Emergency and Traumatology I Course specific objectives: Develop skills for multiprofessional performance. RCG0607 - Neurology and Psychiatry Internship LEARNING STRATEGIES: d) Case presentation during clinical meetings with multiprofessional team RCG0602 - Internship in Internal Medicine II Recognize yourself as a member of a multiprofessional work team</p>
5 th and 6 th	<p>RCG0613 - Internship in Intensive Care Medicine II Objective: "...The greater complexity of the service, both in terms of equipment and human resources, associated with a greater demand for cases from the various clinics (surgical or not) that could be admitted to the ICU, necessarily meant this medical specialty would develop a multidisciplinary character... Also, this multidisciplinary interface will enable the student to daily body observe the differences in interpretation and conduct between the different clinics..." RCG0601 - Internship in Surgical Clinic II Student assessment - "STUDENT ASSESSMENT -... multidisciplinary and communication skills" RCG0602 - Internship in Internal Medicine II Description of activities: "Your practical training depends a lot on GOOD INTERACTION with the multidisciplinary team that takes care of patients in the infirmary and ambulatories." RCG0608 - Internship in Ophthalmology/Otorhinolaryngology and Head and Neck Surgery Objectives: "6. Develop skills for multiprofessional performance in the management of highly dependent patients. "</p>

DISCUSSION

This project demonstrated in an original way how theoretical contents and practical interdisciplinarity experiences are offered to the medical students of FMRP-USP. Despite confirming the researchers' suspicion that the offer of MP/ID would be scarce, in this document analysis we preferred not to elaborate any hypothesis *a priori*, which therefore classifies this study as exploratory. In addition, it can be seen that the classes proposing such contents become more frequent throughout the program, especially in the clinical cycle and internship.

Like other Brazilian medical schools, there have been several changes to the FMRP cur-

riculum over the past 30 years. The original model adopted at the time of its founding in 1952, followed the Flexnerian proposition, with separation of the basic and clinical cycles, emphasis on research and super-specialization, and full-time faculty contracts¹⁴. Curriculum changes at the FMRP between 1990 and 2000 were evaluated in two groups of medical students comparing the results of terminal assessments of clinical competences¹⁵. These authors documented the increase in skills related to the interaction with patients, such as clinical history and physical examination, data interpretation and operationalization of diagnostic and therapeutic procedures. However, the new curriculum then seems to have negatively affected the acquisition of special and more com-

plex cognitive skills, whose domain was already insufficient in the previous structure. Among the skills evaluated, those related to multiprofessional or interdisciplinary work were not listed¹⁶.

The method chosen to determine the disciplines with MP/ID markers ensured agility in the collection of information and increased reproducibility to the study, but it can be considered that the restricted number of search terms did not allow the expansion of the results. For example, some disciplines presented books from other areas of knowledge in their bibliography, characterizing the MP/ID, but were not recorded in the results due to the method chosen. This was the case, for example, of medical ethics courses that included reference works related to themes of art, philosophy or law, but which, without presenting the terms chosen in the method, ended up being excluded. The authors preferred not to modify the strategy for identifying the courses, as this analysis would bring more variability to the method. Even so, these situations were discussed in the group of researchers and treated as exceptions, although they have not been quantified so that this statement is treated statistically.

In syllabi and class plans, there is a tendency for increasing the contact of students with interdisciplinary or multiprofessional activities, both theoretically and practically, going from less than 5% of credits in the first year to more than 50% at internship. This is due to the fact that there are more opportunities to explore these themes in clinical practice courses, in which there is a greater presence of other professionals, as it is closer to the reality of actual health care.

In the basic cycle subjects, there is a recurring problem reported by some subject coordinators, related to the growing volume of knowledge, in parallel with a frequent criticism among the FMRP student body, regarding the lack of free time for studying, resulting from a large number of classes, occupying all the time allocated to study.

Still, it may be difficult to select what is relevant for the student and their future professional practice. There is often some disagreement between the content learned and how much it is applicable within the professional course cycle¹⁷. Currently, most of these professors have different medical backgrounds, increasing the complexity

of this issue and demands even more interprofessional relationships between those who lecture in the basic cycle and those who practice medicine¹⁸.

A bibliographic review points to little scientific production related to education in basic science in health courses¹⁹, and that even with curricula with methodologies that primarily seek basic-clinical integration, there are challenges for its execution²⁰. In this context, it is necessary to offer support so that these professors can select portions of their courses content and still offer part of the teaching activities with interdisciplinary participation.

Despite the growth over the medical program, there is little formal content stated on MP/ID (objectives, plans or bibliography), with less than 15% of mandatory courses and less than 5% of optional courses addressing the theme of interprofessional education (IPE). The description of other professionals' participation on the program topics' may have occurred less frequently than in the medical practice, because this interprofessional experience is not part of the content formally provided for in the planned activities. In fact, the course coordinating professor may even know that there will be a very relevant participation of the nursing professional in the process of caring for a surgical patient who will be discussed or followed up in an internship, but this is not included as a theoretical content provided. Likewise, other patients who will be assisted by the multiprofessional health team will be followed up or their cases will serve to illustrate the learning of medical issues, but, again, they may not be foreseen in the IPE educational activities. In practice, what is perceived is that this knowledge about the participation of other professionals besides doctors, or even medical specialties not directly related to the course being taught, is absorbed by the students' coexistence with these other characters within the teaching scenario, but without formal structuring.

It is worth noting that in all the periods observed, courses related to the entry points of the Unified Health System (Primary Care and/or Emergencies) presented descriptions in the bibliography or syllabi/class plans that mentioned the MP/ID practice. Such courses seek to provide competencies that meet the strategies for reorganizing the health care model, which demand not

only greater presence of interprofessional approaches in the practice of care, but also more interprofessional collaboration²¹.

In this sense, the development of spaces for IPE during graduation can be a small part to prepare general practitioners for new demands of work on the Unified Health System (SUS), regardless of the complexity of the care provided. This logic can meet the expectation of students and professors of higher education institutions (HEI) as the one in this paper, in which the general practices are less present, with extensive dedication to specialties.

Also, a recent study pointed out that despite the fact that many students were able to find in Primary Care an important scenario for correlating theory and practice, they did not associate it with their role at SUS or the need to defend its existence²², showing the importance of maintaining close relationships between the HEI and health services, allowing the elaboration of IPE spaces not only to expand the knowledge of care practices, but also show how they correlate to the principles and practices of SUS.

The absence of description in the classes planning relating to the participation of multiprofessional health teams, especially those that involve clinics and internships, direct the student's learning towards a superficial appropriation of the practice of other professionals. This strengthens the doctor's isolation and the preference for office practice, where there is less interdependence. Furthermore, incomplete information on the possibilities of intervention by other professionals may result in fewer references to them. Aspects not envisaged by the medical student may be able to call the attention of these professionals, making a more comprehensive health care possible. Finally, not knowing the limits of other professionals' work implies incorrect references, resulting in waste of patient's time, financial resources and treatment credibility.

Even with limitations, it was possible to note a pattern of changes throughout the Medical program. The provision of formal knowledge on the topic is important for it to be properly applied to a practical routine²³, and the use methodologies that include learners building trust for self-directed learning can together assist in the acquisition of other NCGs competencies such as communication, leadership and teamwork.

CONCLUSIONS

IPE is part of the long-term planning for the maintenance and transformation of the Unified Health System (SUS), with the explicit purpose of interprofessional collaboration. A market demand for professionals suitable to teamwork is capable of imposing important changes in teaching methods that succeed in complying with this demand. In this context, elements and classrooms of the FMRP medical program with an explicit approach to MP/ID are few and poorly identified in many areas, being considered insufficient and in disagreement with the recommendations of NCGs, that is, to think and organize IPE spaces in the academic community.

The reality of the medical course presented in this paper highlights the need to form groups at the university and in health services, with professors, students and service providers, in order to develop good IPE projects, incorporating them at the organizational level. These spaces created have the potential to serve both as a learning tool on health, as well as a method of improving the service and the work environment quality for the health team.

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