



Teaching, service and community integration as a strategy for reorienting undergraduate health training

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ABSTRACT. The teaching-service-community integration is an important strategy for achieving changes in the training of human resources in health, in order to train professionals with a profile to work in the Brazilian Unified Health System (SUS, as per its Portuguese acronym). This study analyzed how it occurs and what are the contributions of the teaching-service-community integration in the view of professors from the first to the seventh period of Medicine, Nursing and Dentistry programs at a university in northeastern Brazil. This is an exploratory and descriptive study, with a quantitative approach. Data were collected using an interview form and analyzed with the help of SPSS software. The descriptive analysis of the data, the chi-square test and the calculation of the internal consistency of the evaluation scale were used. The study had the participation of 106 professors. Results show that practices were still predominantly performed in university clinics and hospitals, 76 (71.7%). Most professors, 59 (56.7%), consider the teaching-service-community interaction very important for the quality of training and recognize its importance in strengthening SUS, 89 (85.6%). Although there was resistance on the part of some professors to follow-up students in extramural services, most of them, 94 (89.5%), consider the role of professors as essential for changing health practices, especially professors in nursing and dentistry professors that carry out extramural practices ($p < 0.01$). Interdisciplinary practices were performed more frequently in the first two periods of the three courses and by the nursing course ($p = 0.001$). In turn, multiprofessional interaction predominates in the practical classes of the nursing course and practices held outside the university domain ($p < 0.01$). It is evident the need to institutionalize the teaching-service-community interaction, as well as to value initiatives that streamline and make teaching more flexible in multiprofessional and interdisciplinary activities, fundamental for the amendment of training in health.

Keywords: teaching care integration services; higher education; unified health system; faculty.

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Introduction

The need to modify health and pedagogical practices in the training process points to the importance of the teaching-service-community integration, in order to prepare professionals for the health needs of the population and to act in complexity inherent in the health system. In this sense, experiences in the fields of practices are fundamental for university education, since they provide expanded experiences that go beyond those obtained in traditional education (Leme, Pereira, Meneghim, & Mialhe, 2015).

The approximation of undergraduate students to health services favors practical experience, favors knowledge of social determinants and contributes to an expanded view of the health-disease process (Flores, Trindade, Loreto, Unfer, & Dall'Agnol, 2015; Madruga et al., 2015).

When students leave the walls of the university, society and the academic community experience a learning of mutual benefits that favor both sides. The strengthening of the society-university relationship provides an improvement in the quality of care provided and in the quality of life of the community (Rodrigues, Costa, Prata, Batalha, & Passos-Neto, 2013).

Health education remains based on the hegemony of the biomedical model, with fragmented and mechanized practices, with a predominance of intervention and medicalization procedures, engendered by the forces of the market and capital (Barreto do Carmo, 2021).

It is necessary to think about the change in health education based on the discussion of the teaching-service integration, which consists of a collective work, of students and professors from health education programs with workers of the health service teams. This integration is a privileged space for transforming the current care model into a model oriented by the needs of the population (Rodrigues et al., 2013).

The teaching and learning process, based on the professional practice experienced in the daily life of services, also provides the multidisciplinary and interdisciplinary experience (Flores et al., 2015; Santos, Nétto, Pedrosa, & Vilarinho, 2015), which promotes a reflection on professional roles reducing prejudices and differences, in order to prepare students for multiprofessional team work (Costa, Medeiros, Martins, Menezes, & Araújo, 2015; Camara, Grosseman, & Pinho, 2015). It also guarantees quality actions and services to the population, through the reorientation of primary care and the health care model in force in the national system (Vieira et al., 2016).

Considering the importance of teaching-service-community integration to improve the quality of professional training and improve the quality of health care, and given the importance of the professor in this process, it is essential to know the perception of this fundamental actor to improve the training process in health, thus contributing to better guide the debate on the theme.

The objective of this study was to analyze the occurrence and the contributions of the teaching-service-community integration in the view of professors of the Medicine, Nursing and Dentistry professors of a university in northeastern Brazil.

Material and methods

This was an exploratory and descriptive study, with a quantitative approach. Subjects participating in the study were tutor and/or supervisor professors of the Nursing, Medicine and Dentistry programs from the 1 to the 7th period, from the Federal University of Rio Grande do Norte (UFRN), who were accompanying students in practical/field classes at the time of data collection.

Considering the importance of inserting students in different practice scenarios throughout the training process and not only in the last periods of the course (Machado et al., 2019), professors linked to the 7th period were included in the research, as the study aimed to study the interaction of the university with the health services occurring in practical classes held in the subjects, excluding, therefore, the practices of mandatory internships and internships carried out in the last periods of the programs studied, since from the seventh period onwards the students are already in the care practices inherent to their profession.

Professors officially retired at the time of data collection were excluded from the research, as well as substitute professors and those who were not accompanying students in practical/field classes in the semester in which the data were collected.

Data were collected using an interview form prepared by the researchers, based on the theoretical support in the literature on education and teaching-service-community interaction, as well as the objectives proposed by this study.

The questions on the form contained answers arranged on a 5-point Likert scale, through which concepts could be measured quantitatively, by means of a number, so that the higher the value assigned, the greater the respondent's agreement with the statement. The various responses had a combination in order to obtain a single value, which was the measure of the studied concept (Creswell & Vicki, 2013).

For data analysis, the SPSS software (IBM, Chicago), version 22, serial number 10101141047, was used. Data were subjected to descriptive analysis, which involved calculations of absolute and relative frequencies, means, standard deviation, as well as the chi-square test and calculation of the internal consistency of the evaluation scale. A 95% Confidence Interval was adopted with a significance level of less than 5%. For internal consistency, Cronbach's alpha was calculated, considered acceptable when greater than or equal to 0.70 (Vallerand, 1989).

In the study, the following variables were used: program (Nursing, Medicine and Dentistry), site of practical classes (intramural and extramural) and period (1st and 2nd period, 4 to 7th period).

Practical intramural classes were considered to be the teaching clinics and hospitals of the university, and extramural were the health units/services and hospitals that were not in the university domains. The choice of categorization by period was because in the 1st and 2nd periods of the programs studied, UFRN students are inserted in the health services accompanied by a tutorial group, formed by professors and professionals from the health services, in the subjects of Education, Health and Citizenship Integrated Activity I and II (SACI I

and SACI II). These subjects are innovative proposals in health programs at the UFRN, as they are the first curriculum flexibility initiatives, with interdisciplinary and multiprofessional practices, involving various departments of the various programs in the university health area, in addition to being developed exclusively in basic units. SUS network (extramural units). From the 4 to the 7th period, the subjects are carried out considering the structure of the university which is divided into departments, are developed involving students from a single course, and often do not involve interdisciplinary and multiprofessional actions.

The study was approved by the Research Ethics Committee of the School of Health Sciences of Trairi (FACISA) with opinion number 1.563.386.

Results and discussion

The study counted on the participation of 106 professors, 21 (19.8%) of the Nursing program, 56 (52.8%) of the Medicine program and 29 (27.4%) of the Dentistry program.

As for the demographic characteristics of the interviewees, the same number of men and women participated in the study. Most 38 (36.5%) of the professors were up to 40 years of age, up to 10 years of teaching time 51 (48.6%) and followed students from the 4 to the 7th period 101 (95.3%) in clinics and hospitals at the university, 76 (71.7%).

Importantly, regarding the site where they carry out practical classes, among the programs that were part of this research, the Nursing program is the only one whose practical classes (field) from the 1st to the 7th period are held predominantly in the health services of the SUS network that are outside the domain of the university 15 (71.4%). Dentistry 26 (89.7) and medicine 44 (78.6) programs are predominantly centered on the university hospitals and clinics (intramural).

The results found reinforce the studies by Ceccim and Ferla (2008), who emphasize the need to break the dissociation between clinic and politics, which is only possible in real environments and situations, therefore, the formation whose only environment is not allowed the university hospital.

The presence of students in extramural practice scenarios contributes to the training of health professionals with skills and competencies required by the National Curriculum Guidelines, which recommend the production of a professional with a generalist, humanist, critical and reflective profile, acting responsibly and committed to the health of the population.

Table 1 lists the questions regarding the way in which university integration with health services occurs in the three programs that participated in the study, as well as whether this integration contributes to training and to SUS in the view of professors.

Table 1. Distribution of means and standard deviation of the ten items of the teaching-service-community interaction. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

Items	Nursing			Medicine			Dentistry		
	n	Mean	SD	n	Mean	SD	n	Mean	SD
Changes in the quality of training due to teaching-service interaction	21	4.75	0.639	56	4.04	1.199	29	4.25	1.143
Change in the way of viewing training due to the insertion of undergraduate students in different practice scenarios	21	4.85	0.489	56	3.76	1.335	29	3.93	1.438
Fundamental role of professors in changing health practices	21	4.35	0.933	56	4.180	0.865	29	4.54	0.744
Existence of benefits for the professor in participating in the teaching-service-community integration	21	4.75	0.444	56	3.55	1.270	29	4.07	0.900
Strengthening of SUS due to teaching-service integration	21	4.80	0.410	56	4.02	1.104	29	4.32	0.905
Multiprofessional interaction (service professionals) in the teaching-service integration	21	4.25	0.910	56	3.47	1.138	29	3.50	1.262
Conducting practical classes in an interdisciplinary way	21	3.80	0.834	56	2.96	1.131	29	3.96	1.105
Interaction between professors from different areas	21	3.70	1.129	56	3.25	1.246	29	3.18	1.156

Cronbach's alpha: 0.854

As shown in Table 1, the item with the highest mean in the nursing program (mean: 4.75) referred to ‘changes in training due to the insertion of students in different practice scenarios’, while in the programs of medicine (mean: 4.180) and dentistry (mean: 4.54), the highest score was obtained by the item referring to the ‘fundamental role of professors in changing health practices’.

The findings showed that the interviewees recognize that the insertion of students in real practice scenarios brings contributions both to training and to the health services where students are inserted, which is in line with the literature: the presence of undergraduate students in SUS practice scenarios allows reflection on the health work process and its technologies, allowing a different trajectory in professional training (Forte, Pessoa, Freitas, Pereira, & Carvalho Junior, 2015).

For all the questions in Table 1, analyses of the responses obtained in the three programs were carried out, considering the study variables: program, site of practical classes and period. Results with significant Chi-square test (p value < 0.05) are presented.

Most professors 59 (56.7%), regardless of the realization of practical classes in university clinics and hospitals (intramural) or in units/services outside the university domains (extramural), considered ‘very important’ the changes brought about by the teaching-service-community integration in the quality of training. However, it is noticed that the ‘not important’ and ‘little important’ results have a greater concentration in the intramural groups of the Medicine and Dentistry programs, as illustrated in Figure 1 (Chi-square test, $p = 0.016$).

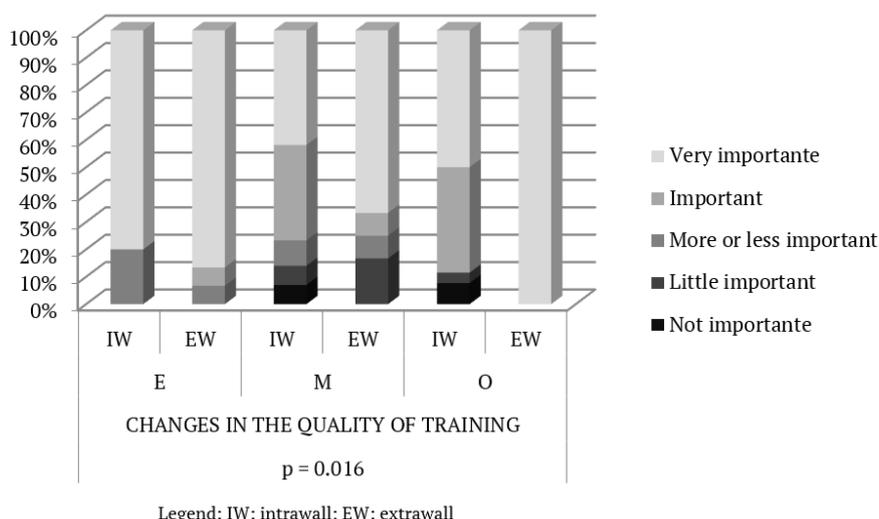


Figure 1. Changes in the quality of training due to the teaching-service integration, considering the site. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

As can be seen in Figure 1, among the three programs, the existence of changes in training due to the insertion of students in different practice scenarios was more perceived by the professors of the nursing program, possibly because, among the three programs, it is the only one whose practices are carried out predominantly in extramural services.

Pizzinato et al. (2012) highlight that the relationship between the teaching processes and the provision of services has provided differentiated training to undergraduate students, since they begin to experience the challenges of materializing the principles of SUS in primary health care, stimulating the formation of human resources to work in the system’s service network.

In addition to contributing to qualify the training of students, most of the interviewees ‘agree’ 42 (40.4%) or ‘totally agree’ 39 (37.5%) that there are also benefits for the professor who interacts with health services. Camara et al. (2015), in a perception study with professors, showed similar results. The authors found feelings of satisfaction in the statements of some professors, who consider that the interaction with the service brings learning, personal and professional growth, in addition to arousing interest in other areas, expanding the discussion and the possibilities for action.

However, as can be seen in Figure 2, there was still resistance at the university by some professors to accompany students in extramural health services, mainly from the group of professors of medicine and dentistry programs supervising students only in services and the clinics of the university (intramural),

because despite the predominance of the answers 'agree' and 'totally agree', there were results 'disagree' and 'totally disagree' regarding the existence of benefits for professors in participating in the teaching-service-community integration ($p < 0.001$).

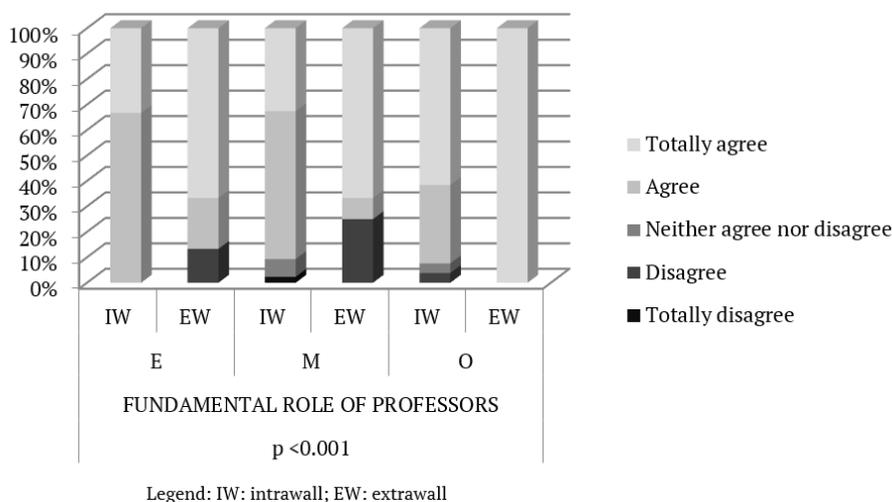


Figure 2. Fundamental role of professors in changing health practices, considering the site. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

Similar results were found in a study that shows resistance by some professors, regarding the change in their teaching practices and activities outside the academy environment (Madruga et al., 2015).

In addition to recognizing that the integration of the university with health services brings benefits to the quality of training of future health professionals and to professors, most of the interviewees 94 (89.5%) also recognized the role of the university in changing health practices.

These results corroborate with studies showing that the presence of the academy in health services also contributes to changes in health practices. Neta and Alves (2016) highlight that service professionals who perform preceptorship are educated while educating undergraduate students, and emphasize that the teaching-service-community integration contributes to significant changes in professional activity, since it provides the construction of a new perspective in professionals who were trained in traditional, content and fragmented education.

In this sense, Conceição et al. (2015) highlight that the operation of the service improves in quality as the presence of the academic community in the services leads professionals to reflective practice, reorienting the service and increasing accessibility with the diversification of practices.

Reibnitz, Daussy, Silva, Reibnit, and Kloh (2012) show the exchange of knowledge between university and health services, where professional practices come to be understood as a solidary process of action-reflection-action, inquiry and experimentation, in which everyone teaches and also learns, intervening to facilitate learning.

However, when comparing the study variables, there was a greater agreement on the part of the professors in the extramural group 24 (80%) regarding the recognition of the role of professors in changing these practices, currently centered on the fragmented and specialized biomedical model. It is believed that, as they are inserted in the services, they already have a greater perception of how the professor can contribute to improve the quality of service practices, during the articulation of the academy with health services.

In this context, Marin et al. (2014) point out that the professor becomes essential for the movement of integration between teaching and service, as they are directly inserted in the health team and know the needs of the population. Although progress has been made in this construction, it has been observed, in practice, difficulties related to the form of teaching insertion, to the different values attributed to teaching and care activities by different subjects, in addition to challenges inherent to the change process.

Nevertheless, some studies highlight that, although the presence of the academy in the service encourages other actions to attend to the students' teaching project, it has not contributed to improvements in the work process at the unit. Madruga et al. (2015) and Pinto et al. (2013) point out that, many times, the practices take place in units where the logic of the service is still centered on the hegemonic model, with a predominance of curative actions, to the detriment of health promotion and prevention practices.

Concerning the strengthening of SUS due to the teaching-service integration, considering the site where the professor works, there was a predominance of the results 'agree' 36 (34.6%) and 'totally agree' 53 (51.0%) in the three programs. However, there was a greater concentration of the result 'disagree' and 'totally disagree' from medicine professors, as shown in Figure 3 (Chi-square test, $p = 0.013$).

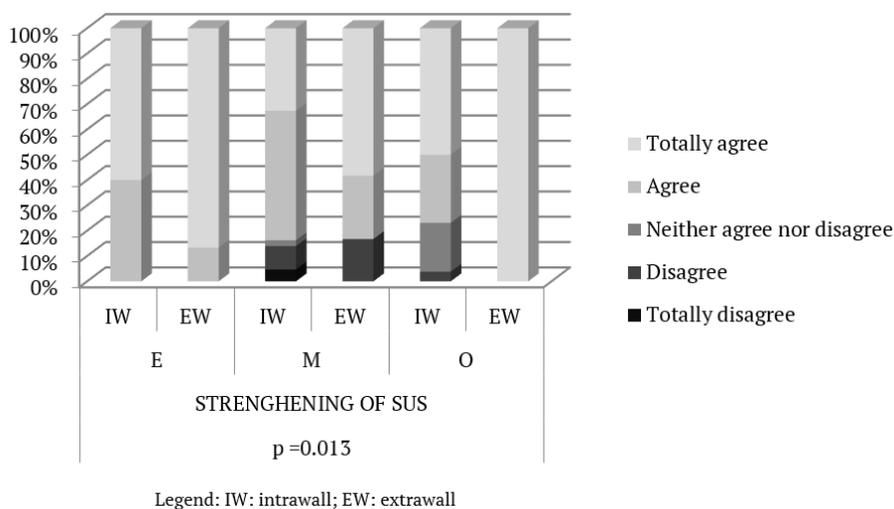


Figure 3. Strengthening of SUS due to teaching-service integration, considering the site. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

Results showed that regardless of the site of work, most professors 89 (77.9%) recognize that the interaction of university with health services strengthens the health system.

In this sense, studies on advances and challenges of teaching-service integration indicate that integration experiences promote advances in the reorganization of health care and permanent education of service professionals, therefore, contributing to SUS (Brehmer & Ramos, 2014).

The actions carried out in health units by undergraduate students are important for strengthening the bond with the community, as it often reaches a population that does not attend the service, in addition to promoting the diversification and enhancement of the actions developed in the unit (Forte et al., 2015). Marin et al. (2014) highlight that the teaching-service-community integration makes it possible to complement the activities developed with the community, which reflects in the quality of health care.

Regarding the way the teaching-service-community interaction is conducted, Table 1 also shows that the items with the lowest means were the items referring to 'conducting practical classes in an interdisciplinary way' in Nursing (mean: 3.80) and Medicine (mean: 2.96) programs and 'Interaction between professors from different teaching areas' in the Dentistry program (mean: 3.70).

It is noticed that, at UFRN, although the Nursing program has a greater insertion in extramural health services 15 (71.4%), in practical classes carried out by the subjects, the realization of classes in an interdisciplinary way is still a challenge to be overcome in all programs in the health area, including in the Nursing program, as illustrated in Figure 4. The difficulty of interviewees in the Dentistry program to interact with professors from different teaching areas is justified by the realization of practical classes of the 1st to the 7th period almost exclusively in the clinics of the school of Dentistry 26 (89.7).

In this way, Teixeira (2007) highlights that, despite preaching the need for interdisciplinarity, the structure of the university, the curricular teaching programs, the units and the political guidelines of the institution constitute the greatest obstacles to its realization. The author also cites the resistance of educators as another obstacle that is difficult to overcome.

Interdisciplinary activities, with the insertion of undergraduate students in practice scenarios throughout the training process, promotes the articulation between theory and practice, enabling the formation of autonomous subjects, capable of articulating knowledge, and more prepared for the market work, from an intellectual, professional and political point of view (Teixeira, Coelho, & Rocha, 2013).

Experiences are also important to encourage students to reflect on the importance of interdisciplinarity. It is necessary that since the period of learning at the university, students can reflect, discuss and learn to relate to professionals from different areas, however promoting interdisciplinarity is a challenge (Machado et al., 2019).

Figure 4 shows conducting practical classes in an interdisciplinary way, considering the period variable. Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil, 2017.

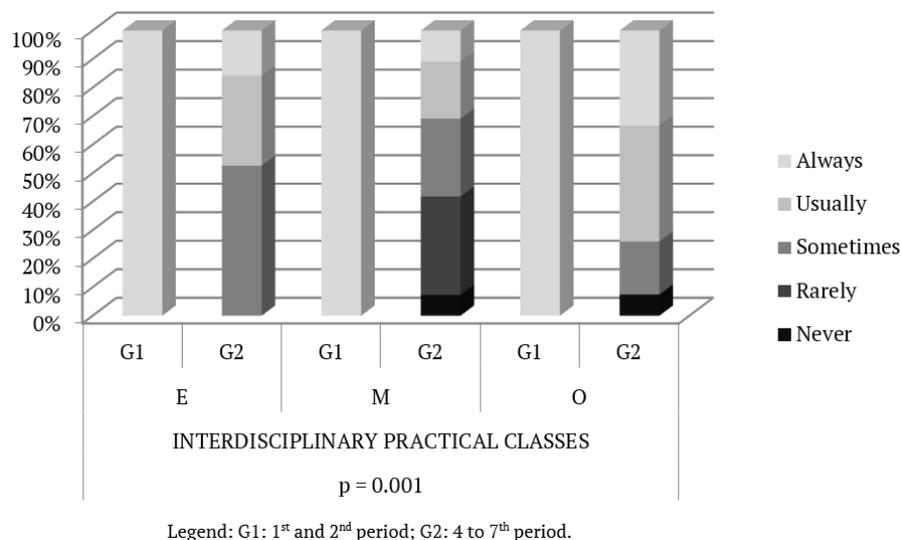


Figure 4. Practical classes in an interdisciplinary way, considering the period variable. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

The findings showed that, from the 1st to the 7th period, the realization of interdisciplinary practical classes, with the interaction of service professionals and professors from different teaching areas, is carried out with greater frequency by professors from the first two periods of the programs (professors from subjects SACI I and II), and by nursing professors from both groups ($p = 0.001$), as shown in Figure 4.

For the actions in the SACI subject, students are integrated into interdisciplinary and multiprofessional groups, guided by professors and service professionals. The formation into tutorial groups in the subject allows a social and multidisciplinary interaction, enabling the formation of active professionals who know how to recognize the values and contributions of all the subjects involved in the care, including users of health services (Ribeiro & Medeiros Júnior, 2015).

The difficulty in conducting interdisciplinary actions by professors from other subjects can also be attributed to the way in which the UFRN curriculum is currently structured by subjects. The curricula organized by subjects have aroused criticism, since the disciplinary division of knowledge is unable to cope with the social problem.

Similar results were reported in a study aiming to identify subjects that enable the development of the ability to work in a multidisciplinary team during the training process in the Dentistry program at UFRN. These practices occur in a few moments of the educational process, highlighting the SACI subject, which provides dialogue between work, education and contact with users of the local health system (Medeiros et al., 2015).

Difficulties in the implementation and development of interdisciplinary actions are organizational, structural and attitudinal. According to the authors, at first, the purpose of interprofessional education is to limit or reduce prejudices that may exist among professionals; in a second step, seek to reduce the lack of knowledge about the roles and functions of other professionals; and, in a third step, to improve teamwork and collaborative skills (Camara et al., 2015).

In this context, Tavares (2003) highlights that the integrated curriculum model dynamically articulates the basic and clinical cycle, teaching, service and community, practice and theory, through the integration of content, and the approach of transversal themes, such as ethics, creativity, citizenship, interaction and teamwork.

Silva and Pinto (2009), concerning this theme, highlight that, although interdisciplinarity is currently present as a guideline and principle in official documents and in pedagogical projects of the programs, it remains a goal that is still far from being achieved in health programs, as a task that is desired, but that still needs to find ways to achieve it effectively, due to the various challenges still present.

Figure 5 shows that from the 1st to the 7th period, the interaction with service professionals from different areas is also more frequent in the nursing program and with professors who take practical classes outside the walls. There was a greater concentration of the answers 'never' and 'rarely' in the intramural group and in the Medicine and Dentistry programs (Chi-square test, $p < 0.001$).

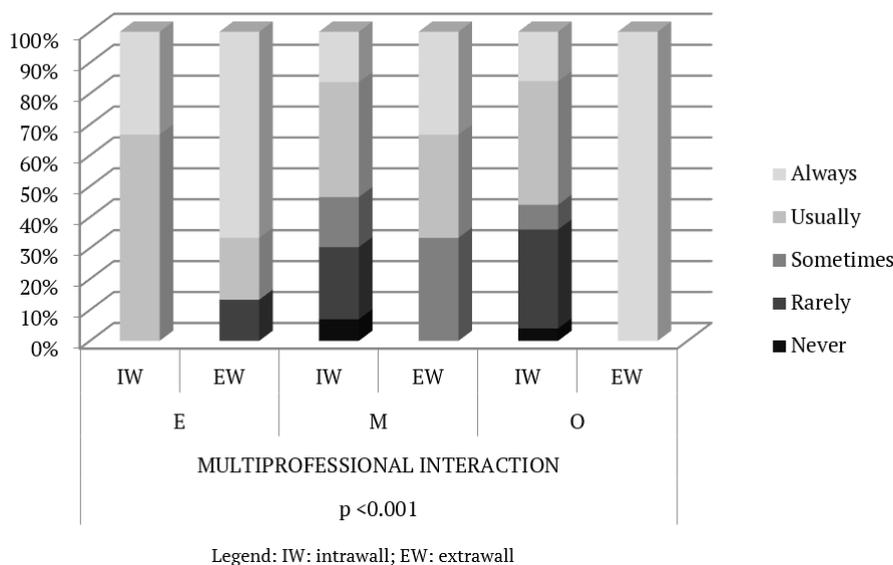


Figure 5. Multiprofessional interaction (service professionals) in the teaching-service interaction, considering the site. Federal University of Rio Grande do Norte, Natal, state of Rio Grande do Norte, Brazil, 2017.

Corroborating the results found, Conceição et al. (2015) highlight the encouragement to multiprofessional integration and the narrowing between professionals in the service and between services as benefits of the insertion of the academy in health services, enhancing networking.

The complex approach to health demands, taking into account the principle of integrality, requires multiprofessional teams and institutions to develop methodologies that include creative exchanges between different specialties and areas of knowledge, horizontal powers, co-responsibilities and self-organization, although this is an arduous task that implies the transformation of institutional structures historically built, values and habits acquired by the culture of modern society (Feriotti, 2009).

Andrade, Boehs, and Boehs (2015) and Bezerra, Adami, Reato, and Akerman (2015) also show the difficulty of integration of activities of different programs in the same work environment, which can contribute to overload the service professionals who accumulate functions of assistance and preceptorship, as well as compromise the provision of assistance to the user and the undergraduate.

Therefore, it is highlighted the need for services and the academy to organize themselves so as not to cause damage to the quality of care provided, nor to overload health professionals, since the university should contribute to the reduction of work overload, organizing itself internally, in order to perform an interdisciplinary teaching, involving students and professors from different programs, thus facilitating the work developed by the preceptorship.

As for the assessment of the instrument reliability, it was observed through the calculation of Cronbach's alpha, which presented a value of 0.854, showing the reliability of the instrument and, with that, the positive internal consistency.

The present study presents, as a limitation, the difficulty of generalizing the findings, since it portrays the reality of a single institution, as well as the fact that the programs were analyzed by only one of the actors involved in the teaching-service-community process: the professor. Therefore, it is suggested further studies, including the views of other actors, be they students, service professionals, users or managers, in order to deepen the discussion on the topic studied.

Conclusion

The strengthening of the university-health services relationship provides improvements in the quality of training and assistance provided to users. This articulation is a space that favors the transformation of the current care model into a community-based population care model.

Professional practice experienced in the daily life of extramural services provides a multidisciplinary and interdisciplinary experience in real practice scenarios, however, conducting interdisciplinary classes remains a challenge. It is evident the need to institutionalize the teaching-service-community interaction, as well as

the valorization of initiatives that streamline and flexibilize teaching in multiprofessional and interdisciplinary activities.

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