



# The Brazilian Education through Work for Health Program (PET-Saúde) and education of nutritionists on a satellite *campus*

## Programa de Educação pelo Trabalho para a Saúde (PET-Saúde) e a formação do nutricionista num *campus* de interiorização

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### Abstract

**Objectives:** With a focus on nutritionists' education, this article analyzes the experience of a team of the Education through Work for Health Program (PET-Saúde) in the Federal University of Rio de Janeiro, Macaé Campus, effective between 2012 and 2014. **Methodology:** This team developed activities about nutrition in the municipal health system. PET-Saúde was created in the context of university extended education courses, and it is understood as an integral and inseparable part of higher education. Educational and training activities for the team were based on the Paulo Freire's theoretical framework on problematization-reflection. Content analysis was performed to assess members' testimonials about their experience in PET-Saúde. **Results and discussion:** Practice-based learning and knowledge exchange were the main experience benefits to the education of all group members. These benefits contribute to nutritionists' education, because they narrow the distance between academic education and professional practice. This experience fostered greater social engagement, autonomy, leadership, criticality and broadening of student's perception on health and nutrition issues within the Brazilian Health System. One needs to think about the repercussions of the experience of PET-Saúde, especially given the current scenario of adjustment of Brazilian higher education. **Conclusions:** Curricular and pedagogical changes in nutritionists' education may be rethought, based on this experience, in order to better incorporate social demands and promote education with a transformative potential. In this sense, this experience contributes

to the non-hegemonic movement against the professional education model focused on the capitalist market.

**Keywords:** Higher Education. Community-Institutional Relations. Nutrition Public Health. Health Promotion. Eating Habits.

## Resumo

*Objetivos:* Tendo como enfoque a formação do nutricionista, este artigo analisa a experiência de um grupo do Programa de Educação pelo Trabalho para a Saúde (PET-Saúde), da Universidade Federal do Rio de Janeiro, *campus* UFRJ-Macaé, vigência 2012-2014. *Metodologia:* O grupo desenvolveu atividades sobre nutrição na rede municipal de saúde. A concepção do PET-Saúde se deu no âmbito da extensão universitária, entendida como parte integrante e indissociável do ensino superior. As atividades de formação da equipe basearam-se no referencial teórico freiriano sobre problematização-reflexão. Foi feita análise de conteúdo para avaliar depoimentos de membros do grupo sobre a vivência no PET-Saúde. *Resultados e discussão:* O ponto forte da experiência foi o aprendizado fundamentado na prática e na troca de saberes, que beneficiou a formação de todos os atores. Tais benefícios contribuem para a formação do nutricionista, pois estreitam a distância entre o ensino acadêmico e a prática profissional. A experiência favoreceu maior engajamento social, autonomia, protagonismo, criticidade e alargamento da visão do acadêmico sobre as questões de saúde e nutrição no âmbito do Sistema Único de Saúde. Precisa-se pensar nos desdobramentos da experiência do PET-Saúde, em especial diante do atual cenário de transformação do ensino superior brasileiro. *Conclusões:* Ajustes curriculares e pedagógicos na formação do nutricionista podem ser pensados à luz desta experiência, de maneira a melhor incorporar demandas sociais e promover educação com potencial transformador. Nesse sentido, a experiência contribui com o movimento contra-hegemônico ao modelo de formação profissional voltado para o mercado capitalista.

**Palavras-chave:** Educação Superior. Extensão Comunitária. Nutrição em Saúde Pública. Promoção da Saúde. Hábitos Alimentares.

## Introduction

The Program for Reorientation of Professional Training in Health (Pro-Health), a partnership between the Brazilian Ministries of Education and Health, aims to redirect the training of health care professionals to strengthen integration between higher education institutions (HEIs), the public health care service and the community, with a view to consolidating the Brazilian Unified Health System (SUS, in the Portuguese abbreviation).<sup>1</sup> For that, Pro-Health offers financial resources for HEIs, as well as grants through the Program of Education by Work for Health (PET-Health). When approaching the professional practice academic training, the expectation is for inducing curricular changes and encouraging students' learning so that they surpass the limits of university territories, approaching the services routine and society's necessities. Thus one seeks to overcome some technical and fragmented training and to direct contemporary training in order to meet the demands of human resources for SUS and to contribute to concrete improvements in the population's living conditions.

SUS's consolidation gains are notorious when comparing the current situation with the beginnings of its implementation at the start of the Brazilian Sanitary Reform in the 1980s.<sup>2</sup> Important progress has been made with regard to transition from the hegemonic model focused on curative and hospital care to a model of integral health care, which provides at its core humanized care, health care promotion and disease prevention. However, SUS's feasibility still presents a broad set of challenges, such as: intensifying social participation and control, strengthening regionalization and, above all, adapting professional training in health care in order to meet the needs of this new model of care.<sup>3,4</sup> Pro-Health and PET-Health are governmental initiatives to overcome these challenges through training professionals more prepared to work at SUS, specially in Primary Health Care. In this sense, the development of PET-Health groups constitutes the basis for new curricular guidelines as part of a historical, dynamic and collective process of evaluation and improvement of both higher education in health care and the policies and programs that guide this training.<sup>5,6</sup>

Nutritionists are health care professionals whose object of work is human food, whether in individual or collective dimensions.<sup>7</sup> Curricular guidelines for training them have been influenced by different changes in Brazilian higher education and the reorganization of health care practices resulting from the creation of SUS.<sup>8</sup> Specially the implementation of the Brazilian government Family Health Strategy (ESF, in the Portuguese abbreviation),<sup>9</sup> as well as the Brazilian government Support Center for Family Health (NASF, in the Portuguese abbreviation),<sup>10</sup> presents an important relation with nutritionists' training, since it provides for the accomplishment, by a multidisciplinary health care team, of a range of actions under the topic of Food and Nutrition.

The Brazilian government National Curricular Guidelines for Nutrition Courses proposed in 2001 emphasize the need for a generalist, humanistic, critical and reflexive training allowing nutritionists to develop competences to integrate multiprofessional health care teams.<sup>11</sup> However, there are difficulties in achieving such a differentiated training. Among them, the fact that nutritionists' professional identity itself is still under construction<sup>12</sup> stands out and there are training gaps related to subject matters that are not addressed in undergraduate courses but which would be essential for working for SUS.<sup>8,13-15</sup>

University extended education courses consist of a scientific, educational and cultural process that is developed with research and teaching and enables social transformation through some link and exchange of knowledge that occurs between the university and society.<sup>16</sup> Therefore, extended education courses play an important role in the current process of university reform due to their potential to contribute to a more critical education relevant to social demands, specially those related to improving SUS.<sup>17</sup> It should be emphasized that in the context of interiorization, extended education courses can be specially strengthened, since the creation of new campuses in the countryside sites is based on universities' participation in regional development through close political and social integration with the community, improvement of vocational training in localities and the conduct of research and actions of regional interest.<sup>18</sup>

UFRJ-Macaé Professor *Aloísio Teixeira* (campus UFRJ-Macaé) is an advanced campus at Brazilian university *Universidade Federal do Rio de Janeiro* (UFRJ), which integrates national higher education interiorization activities promulgated in (35<sup>th</sup> Brazilian President) Luís Inácio Lula da Silva's administration. In constant expansion, since its implementation in 2006 it aims to consolidate itself in the region by the research-teaching-extended education tripod. Since 2009, it has hosted four undergraduate courses in the health care area, specially Nutrition.

Focusing on training nutritionists, the objective of this article is to analyze the experience of a PET-Health group of UFRJ-Macaé campus who has worked on Nutrition topics.

## Methodology

### Context and scope of the PET-Health group on Nutrition

UFRJ-Macaé campus has been building a history of integration with the municipal health care system through research projects and extended education courses. In August 2012 it was inserted in the Pro-Health, constituting four PET-Health groups. Among them, the focus group of the present article stands out, which has worked on Nutrition topics, emphasizing Promoting Healthy Eating (PAS, in the Portuguese abbreviation) and Brazilian government prevention of Noncommunicable diseases and their increased intensity (DANT, in the Portuguese abbreviation)

at the public health care system in the Brazilian city of Macaé, RJ. All group activities took place between August 2012 and December 2014.

This group, according to the rules for making up PET-Health teams,<sup>1</sup> consisted of 12 scholarship holder students and three volunteers, including 12 undergraduate students in Nutrition, one in Medicine and two in Nursing and Obstetrics. Pro-Health has also provided a professorship grant, which in such group was for six nutritionists from the municipality working in Primary Health Care and in the Coordination of the Technical Area of Food and Nutrition of Macaé (CATAN, in the Portuguese abbreviation). With regard to tutoring, there was a formal tutor professor in the group but the work practice occurred in a shared fashion among seven nutritionist professors of the Nutrition Course at the UFRJ-Macaé campus, active in different areas of knowledge.

The project of the PET-Health in Nutrition group has had three main lines of action as its scope: 1) Training undergraduate students in extended education activities with nutritionists and other professionals of the public health care system; 2) Promoting and updating health care professionals' knowledge about PAS and DANT prevention; and 3) Developing actions on PAS and DANT prevention with the community. Within each of these lines, activities were developed linked to four subprojects constituting the PET-Health in Nutrition group, knowingly: (I) Brazilian government Food and Nutrition Surveillance System (SISVAN, in the Portuguese abbreviation) and PAS activities; (II) Understanding Food Labels and PAS; (III) Strategies promoting breastfeeding and complementary diets and DANT prevention for adults; and (IV) Preventing and controlling DANT through dietary practices.

### Activities developed

With regard to the first line of action, training undergraduates occurred through weekly activities in practical field, participating in the preceptors' work routine. Within each subproject, students performed various tasks related to serving users, improving service and planning and executing educational activities in health care and nutrition. For example, in Subproject I, students participated in the CATAN routine and assisted in improving SISVAN. In the context of Subproject II, the students followed nutritionists' work in the ESF and built educational dynamic activities to work on the topic of food labeling and PAS with the users. In terms of training, not only for the students but for the whole PET-Health in Nutrition group, it is worth noting the monthly workshops and seminars held to discuss literature and for subprojects to share the activities they were developing.

In the group's second line of action, focused on training health care professionals, actions developed by Subproject III stand out. For example, training professionals from the municipal

health care system was carried out using a video exhibit about children's diets. A brief training course on breastfeeding and complementary diet was also carried out, targeting health care professionals from the municipality, health care undergraduate students and the community in general. Although addressed to the group's internal audience, it is worth mentioning the organization of two seminars for training professors when the professorship role in Higher Education was discussed.

Within the scope of the third line of action, aimed at actions in the community, there were several and diverse educational activities on PAS and DANT prevention developed by the four subprojects in the practice sites and at events in public spaces open to the community. One example was the accomplishment by Subproject IV of a situational diagnosis on DANT followed by cooking workshops with adult and elderly ESF users and/or participants of the Brazilian government Comprehensive Health Care Program for the Elderly (PAISI, in the Portuguese abbreviation). It is also worth mentioning the production of printed educational materials which were distributed in timely events such as mass vaccination campaigns.

## Theoretical framework

The PET-Health in Nutrition group conception was established in the scope of university extended education, understood as a dynamic process of interaction between the academy and society promoting some unique learning for all the actors involved in it as it favors the exchange of knowledge.<sup>16</sup> Extended education has therefore been seen as an integral and inseparable part of higher education and it is particularly necessary to strengthen health care education.

The educational proposal adopted in conducting the group's three lines of action was determined based on the (Brazilian educator and philosopher Paulo) Freire referential, which emphasizes the importance of problematization and highlights human beings as protagonists in the knowledge process.<sup>19</sup> Both in the activities aimed at training the members of the group as well as in those aimed at health care professionals and the general population, the aim was to adopt a horizontal dialogue favoring the exchange of experiences and a democratic participation.

Specially in line 1, which concerns training PET-Health in Nutrition group's students, it has been assumed that cognitive skills are constructed by exploiting reality, specially in view of problem situations. In an analogous fashion to the problematization-reflection proposed by Freire,<sup>19</sup> it would be expected that undergraduates, by means of identifying problems during practical experiences, would reflect on PAS and DANT prevention in the public health care system as well as on their own professional training.

## Strategies used to evaluate the experience

For the present study, qualitative data regarding a summative evaluation of the PET-Health in Nutrition group's progress, carried out with the team members, was used one year after starting the Program. They were asked to provide an individual written record of their experience with the Program. To guide the writing, three guiding questions were established: (1) How has the experience of what you have been doing in PET-Health been like?; (2) What has been positive and what has been negative?; and (3) What proposals would you have for future experiences?

Sixteen members of the team were enrolled, being nine students, four preceptors and three professors. Texts were analyzed in a qualitative fashion by means of thematic analysis of the content.<sup>20</sup> One of the authors made a floating reading of the material, followed by deep exploration. Thematic units of analysis were identified and organized into categories. These were interpreted based on the theoretical scenario outlined a priori, specially with regard to Pro-Health objectives and nutritionists' professional training. As some form of validation, the analysis was appreciated by the team members in an internal seminar organized for this purpose.

All ethical procedures were followed for the development of the PET-Health in Nutrition group's activities. The proposal complied to the requirements for accreditation of extended education projects at UFRJ, as well as the ethical regulations envisaged by Pro-Health and PET-Health. Among these, it is important to emphasize consent and agreement from the Municipal Health Department of Macaé and the HEI for developing the proposal.

## Results and Discussion

### Experience in PET-Health and training Nutrition undergraduate students

Approaching academic teaching and professional practice is the key objective of PET-Health, which is fully directed according to recent curricular guidelines for Nutrition training. In this study, experience in the field was considered of extreme importance by the students as well as by preceptors and professors, which was mentioned by all respondents.

One of the Nutrition students commented that "the experience (in PET-Health) has been great since, in addition to a theoretical basis, we are having contact with the practice, being able to relate to what really happens in the municipality of Macaé" (Student A). Such acknowledgment by students of the relevance to their formation of the insertion in practical field was also present in PET-Health groups from other HEI in the country.<sup>21-24</sup> For example, HEI medical school undergraduates in the Brazilian city of Curitiba have commented on the relevance of knowing in practice about SUS limitations and learning to work with them as well as with the users' adverse

life circumstances.<sup>24</sup> For undergraduate students in the field of health care in HEIs in Brazilian states Bahia and Pernambuco, the experience in the services allowed them to understand the structure of the public health care system and to think about the service real conditions to meet the local demands.<sup>23</sup>

This greater contact of the student with the reality of the municipality and with the SUS routine contributes to a socially engaged formation, strongly desired for the nutritionist and every health care professional. Considering that it is expected that health care professionals promote changes in the way health care takes place in terms of SUS, it is worth retrieving the problematizing and liberating conception of education.<sup>19</sup> When they come into contact with each other and with the surrounding reality, students are faced with problems that encourage them to reflect, favoring the realization of an action-transformation phenomenon. In this sense, it can be said that PET-Health collaborates to instigate students' reflection on health care and Nutrition issues within SUS, as well as on their own role as an academic inserted in this scenario.

Practical experience is able to strengthen the meaning of what is learned and to value the learner as a participatory actor in the learning process. This valuation can be perceived, for example, in the following comment from one of the students in the group: "The experience is gratifying because I feel useful and able to help change some of the reality in Macaé (...)" (Student B). It is emphasized, according to Freire,<sup>19</sup> that the students' protagonism, being subjects who own their thinking and are free to share their worldview, is essential for education to generate criticality, autonomy and emancipation. The experience in PET-Health in Nutrition has favored students' protagonism, which is in accordance with the type of professional that is intended for SUS, specially in multidisciplinary teams.

Obstacles related to nutritionists' performance in multidisciplinary health care teams have been addressed in some studies.<sup>12,15,25,26</sup> What is mainly discussed are difficulties related to professional autonomy<sup>27</sup> and elements that could be more present in Nutrition training to favor work in teams. Among these, the potential of interdisciplinary experiences during graduation is highlighted. According to Boog,<sup>26</sup> these specially help some training that is more coherent with what the nutritionist is expected to develop in the field of Collective Health Care. It should be remembered that individualized care, centered on physicians' role, is some challenge to be overcome in health care services. Therefore, participating in PET-Health was a unique opportunity, as it encouraged Nutrition undergraduates' interaction with others from different courses and with different service professionals in an interdisciplinary context.

Knowledge interchange provided by such an interdisciplinary context, specially the in locus, was considered by respondents of this study a unique possibility for personal and academic maturation and a way to broaden their view on health professionals' role in the health care system and within the government programs. Such an extended view for the scholar was also pointed out by Souza et



al.,<sup>28</sup> who have observed that the participation of students from Brazilian university *Universidade Federal de Pelotas* in PET-Health has strengthened some reflexive criticism, helping students in constructing their professional profile.

Criticality in training is specially necessary in the case of nutritionists, since the profile and the professional identity itself are in the process of maturing.<sup>12</sup> Nutritionists' scope of action is not fully clear yet, either to society in general or to health professionals, and sometimes not even to nutritionists themselves. Knowledge and actions of nutrition and PAS have a recognized importance in DANT prevention and health care promotion and specially since the end of the 1990s they have been valued in health care services.<sup>29,30</sup> However, the space occupied by nutritionists in applying this knowledge is diffuse, mixed with work by other professionals, from the health care area and from outside it, which makes it difficult to define their professional identity and their effective integration in health care teams.

This is due in part to the breadth of dimensions, in addition to the biological one, that permeates human diet. Studies coming mainly from the field of Anthropology<sup>31</sup> have highlighted the intricate set of social, cultural and economic aspects, among others, intertwined with food. Therefore, some Nutrition training is necessary that broaden nutritionists' view on Nutrition, surpassing strictly biomedical gazes.<sup>14,15</sup> Through the present experiment, PET-Health potential for this broader training was perceived, since, by providing constant reflection on theory with practice, the experience allows students some better understanding of determinants in the health-disease process and, above all, of the diversity that permeates eating, food and nourishing.

In curricular terms, Recine et al.<sup>14</sup> have evaluated Nutrition undergraduate courses throughout the country and identified that traditionally called Nutrition and Public Health, a thematic area that is more in line with nutritionists' training perspectives for SUS, has occupied at most 30% of the total courses. These authors have also commented on the need for training to focus more on interdisciplinary issues, not exclusive to health care, such as Food and Nutrition Security, and Health at School. Mota, Oliveira and Boog<sup>32</sup> have evaluated the online presentation of Nutrition Courses in Brazil and observed the predominance of information on the labor market in Nutrition. Professional features valued in current résumé guidelines, such as nutritionists' humanization and commitment to social transformations, were not shown on websites.

This study refers to the fact that the formation that is desired for SUS moves in a counter-hegemonic movement in relation to a productivist fragmented formation conducted under the logic of human capital and employability.<sup>33</sup> Current political agenda for overcoming difficulties of consolidating SUS, expressed in the Brazilian government Pact for Health, calls for changes in professional training.<sup>3</sup> However, contributing to negating the capital project and, at the same time, envisaging counter-hegemonic possibilities for health care education is an undeniable challenge.

Nutrition Courses require modifications encouraging students' analytical capacity about nutritional problems, contextualized in different perspectives covered by food. In favor of the desired transformative education, it is necessary to expand in the curricula the discussion on subjects such as: health care policies, science and technology policies, capitalism and human body and health commodification and polytechnics in health.<sup>15,33,34</sup> In addition, courses pedagogical projects should highlight health care work as some social, humanist and citizen practice.

## PET-Health and nutritionists' training beyond graduation

No one teaches anyone, neither does anybody educates himself: men teach themselves in communion, mediated by the world (Freire, p. 79).<sup>19</sup>

It is timely to cite here this famous thought by Paulo Freire, which refers to the integration among the different actors in a scenario of mutual and simultaneous learning, essential for human beings' liberating education. This integration and the resulting knowledge exchange among the team members and these ones with the community were considered the experience strongest aspect in this study, which enriched the whole group's training. The relationship among the subjects was also approached by Fonseca and Junqueira,<sup>35</sup> based on the PET-Health team tutors' experience at Brazilian university *Universidade de São Paulo* (USP). These authors have pointed to the existence of "friendly" and "very rich" relations and the absence of a rigid hierarchy as critical factors for the Program good development.

A strong integration and the building of interpersonal links at the PET-Health in Nutrition may have been facilitated by the short physical distance between practice sites and the HEI in Macaé. It should be noted that, when compared to large cities, Macaé is a medium-sized municipality, with an estimated population in 2010 by the National Census of approximately 206 thousand inhabitants, with 83 SUS health care facilities. As for larger cities such as Brazilian Cuiabá, for example, the distance between the HEI and the health care units was considered a negative aspect for the development of the PET-Health due to the fact of the units being located in the city outskirts, making it difficult for tutors' weekly monitoring.<sup>36</sup>

Interpersonal ties among the actors in Macaé have included students, preceptors and professors. One of the tutoring professors has commented that "the contact with the preceptors has approached me to the professional practice. I realize that this can help me to be a better professor" (Professor A). This speech emphasizes that, although Pro-Health focuses on undergraduate training, it can also benefit the training of professors involved. They have the opportunity to reflect on their role as educators as they revisit nutritionists' practices and interact with students and preceptors. PET-

Health benefits for professors were also discussed by USP tutors,<sup>35</sup> who have emphasized that the experience in the Program has encouraged them to reflect on their pedagogical practices and on the courses curricular grades.

Encouraging professors to rethink the teaching practice, the experience in PET-Health presents questions about professors' training, who teach in Nutrition undergraduate courses.<sup>32</sup> <sup>37</sup> In general terms, Nutrition teaching has been carried out by professors with expertise in their specific areas, but with little, if any, pedagogical training. There is talk about redirecting health care undergraduate students' training, but for this, in addition to modifying curricula and contents, it is necessary to review professors' training and pedagogical practices necessary for this redirection.<sup>34,38</sup>

Experience in PET-Health in Nutrition also encompasses training nutritionist preceptors, who can rethink their professional performance and learn as they coexist with professors and students. An example of such rethinking can be seen in the following commentary by a NASF preceptor on expectations about the Program:

*(...) I was expecting to grow as a professional and get closer to the university since, as we work, we do not have time to study and end up distancing ourselves a little from it. And with that, it is an instrument to convey to the community what was studied (Preceptor A).*

The possibility, through participation in PET-Health in Nutrition, to improve oneself and the service so as to better serve the population, was notoriously present in the preceptors' narratives. The desire to "directly contribute to planning and applying improvements in the service" (Preceptor B) was mentioned "to technically enrich the professional practice" (Preceptor A) and "to encourage change in professional preceptor's work routine" (Preceptor C). Reflection on the work process itself was also identified among PET-Health preceptors from Brazilian college *Faculdade de Medicina de Botucatu*<sup>39</sup> and Brazilian university *Universidade Federal do Mato Grosso do Sul* (UFMS).<sup>22</sup> It should be highlighted that at Brazilian university *Universidade Federal de Alagoas* the Nursing Course PET-Health groups' preceptors considered that the opportunity to show their work to students reinforced their sense of professional value.<sup>40</sup>

Such professorship experiences refer to a complex discussion about Permanent Education in the area of health care.<sup>41</sup> Nutritionists' permanent education for SUS could go in the same line of education discussed in the scope of graduation, favoring criticality and protagonism. Mainly the NASF practice requires professionals capable of developing actions of interdisciplinary, intersectoral, ethical, resolute, longitudinal, welcoming, bonding and accountability activities.<sup>42</sup>

Obviously, this training is not simple to achieve and it is necessary to work, both at undergraduate and postgraduate levels and in the field of Permanent Education, the range of topics associated

with what is expected from nutritionists in Collective Health Care. A recent prominent publication in this line is the Consensus on Nutritionists' Skills and Competencies in the Field of Collective Health Care,<sup>42</sup> which provides information capable of guiding professors in relation to curricular needs to meet SUS's demands.

### Difficulties in the experience of PET-Health in Nutrition

Regarding the negative aspects of the experience in the PET-Health in Nutrition, all respondents of the present study commented on difficulties of physical and organizational infrastructure. For example, health care units would not accommodate all students and professionals. In addition, the structure of laboratories and rooms of the Nutrition course in Macaé is precarious and in constant reformulation. As such, there was no suitable place for team meetings or sites to store project materials. Difficulties were experienced by PET-Health groups from other HEIs.<sup>21,22,39</sup>

Nepomuceno,<sup>43</sup> discussing the process of interiorization of UFRJ, would already point out structural problems in the UFRJ-Macaé campus, notably with regard to availability of rooms in buildings. It is pertinent to comment that, as a result of governmental financial incentives to expand higher education, in a short period of time several campuses were created in the country,<sup>18</sup> mainly after 2007, through the Program of Federal Universities Restructuring and Expansion (REUNI, in the Portuguese abbreviation).<sup>44</sup> There was rapid implementation of new courses, even when their planning structure would not yet be fully ready, as was the case in Brazilian university *Universidade Federal da Paraíba*<sup>45</sup> and at UFRJ.<sup>43</sup>

In the course of the PET-Health in Nutrition effectiveness, UFRJ-Macaé campus was not yet a management unit. Therefore, it would depend on other UFRJ units to carry out purchases related to Pro-Health. This entailed lengthiness or even inability to carry out planned purchases. Consequently, part of the planned actions had to be canceled due to lack of financial resources. Another difficulty, which is also related to UFRJ-Macaé campus precocity, was that its number of professors and technicians was clearly lower than necessary at the time of the Program, generating work overload for professors.

With regard to labor logistics, the HEI and the service were somewhat unprepared to receive the PET-Health. For example, preceptors pointed out that, even for the purpose of helping the service, the Program would be seen as “extra work” in some municipal bodies. It should be emphasized that the work pace in the health service considerably differs from that of the academic one. Conciliating the rigor of planning provided in the academy with the various demands and short deadlines imposed by the service constituted a limitation for accomplishing activities.

Incompatibility of agendas would sometimes make teamwork unfeasible. When possible, the group's activities had to happen in the night shift to allow the presence of all, which was perceived as tiring and not very productive. In addition, due to PET-Health activities not being fully articulated with those who were regular in the undergraduate program, there were often concomitant tasks, hampering students' full engagement in the Program. Difficulties in schedule incongruity were also observed in other HEIs.<sup>22,23,35,39</sup> In the case of UFMS, meetings at lunch or night time discouraged some students, who chose to leave the Program.<sup>22</sup>

Articulating PET-Health with undergraduate courses regular activities consists of one of the Pro-Health goals,<sup>1</sup> certainly one of the most difficult ones to achieve. And if it were, it could possibly minimize the difficulties mentioned above. This is some bold goal, since it includes rethinking the curricula, not only of a course, but of all those involved in the interdisciplinarity proposed by the Program.

Changes in undergraduate and health care courses based on the PET-Health experience are intricate and long-term, involving barriers at different levels, distanced from the reality of the Program participants. This detachment can be considered a negative aspect of the experience, as one of the Nutrition students commented:

*I believe that there has been some lack of clarification regarding the application of what we shall do in the practical field. (...) How shall the result of our project be passed on to the other students/professors/professionals? (...) How does the Brazilian Ministry of Health use it? The lack of clarification for all participants in relation to this has been very negative (...) (Student D).*

This comment brings light to a broader reflection on the PET-Health and how the actions shall unfold. In this sense, it is pertinent to think of proposals to disseminate the experiences of the PET-Health in society, in the services and at the university, with involvement of the courses coordination staff in order to promote clarification and articulation, benefiting students as a whole.

## Final thoughts

This PET-Health in Nutrition experience at UFRJ-Macaé campus has brought important lessons about the Program potential as a way to redirect Nutrition training, approaching undergraduates to the practical field in the SUS system. The team achieved the objectives of offering differentiated training to its members and of bringing the university closer to health services and the community. Certainly, the Program has given the participating students, as well as the nutritionists preceptors and professors, an experience of intense learning based on the professional practice and the knowledge exchange. However, the question remains as to how students and professionals who

did not participate in the Program shall benefit. This is a central question to think about the repercussion of the PET-Health and Nutrition training. How shall the experiences at local levels guide the redirection of training in the different Nutrition courses and in the health care area? Sharing PET-Health group experiences with the academic community seems to be a promising way to encourage reflection and instigate change.

PET-Health in Nutrition activities aimed at society and the service have been able to be developed to the satisfaction, overcoming logistical and financial difficulties. Educational activities were developed with the community and actions were taken with the services, aimed at improving them. It is worth reflecting, however, if these actions were only specific or could occur in a continuous way because the continuity depends on different factors related to the services in the system that are outside the PET-Health group ruling capability. Viability and interest for the regularity of actions would have to be discussed with managers, health professionals, as well as the system users.

Absence of a common agenda for teamwork and the difficulty in reconciling the Program tasks with those of the formal curriculum consisted of marked challenges experienced by the PET-Health in Nutrition group. These could be minimized by linking the PET-Health as a regular curricular activity.

Brazilian higher education is experiencing an unprecedented moment of valorization of university extended education, in which to reflect on PET-Health experiences can be timely. Via the 2014 National Education Plan<sup>17</sup> the Brazilian Ministry of Education has established as a goal that at least ten percent of the total credits required for graduation in all courses in national higher education should be met by students in extended education activities. This determination raises a wide discussion in the contemporary university scenario, specially on the role of the university in forming critical professionals who meet society's demands, as opposed to some technical training, geared to the capitalist market demands.

Such a discussion is in harmony with the PET-Health principles, as well as with the results of the experience reported in this text. To meet the goal of expanding extended education, health care courses shall have to rethink their structures and probably undertake curricular reform. The UFRJ-Macaé campus Nutrition course is inserted in this scenario, having held, since 2015, internal seminars and meetings of its Structuring Teaching Center to reflect on possible curricular changes. This is a challenge for which the PET-Health in Nutrition experience has some broad potential for contribution.

It should be highlighted that the UFRJ-Macaé campus Nutrition course already has on principle the insertion of undergraduates in practice scenarios since the first school terms. Such an innovative feature can be seen as a step forward in the direction of future curricular changes. In addition,

the course is still young, having its first class completed in 2013. This fact may favor the dynamics of training reorientation, since the curricular matrix has not been fully implemented and can be thought in the light of the experience of the PET-Health in Nutrition.

Of course, curricular changes are intricate and require time not only in terms of reflection but also in political-bureaucratic aspects. Thinking about redirecting professional training in Nutrition covers dealing with the constant deconstruction and reconstruction of concepts by the different actors involved. It covers not only educational but also political and social aspects related to the type of professional training that society wants and needs.

## Contributors

Lourenço AEP, Cordeiro AV, Capelli JCS and Oliveira RBA were responsible for the design and delineation of the study. Lourenço AEP was responsible for analyzing the qualitative data. All authors have worked together on writing and critical review of the manuscript.

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