

## AVALIAÇÃO CURRICULAR: A PERSPECTIVA DE EGRESSOS DE UM CURSO DE NUTRIÇÃO

## CURRICULAR EVALUATION: THE PERSPECTIVE OF GRADUATES OF A NUTRITION COURSE

## EVALUACIÓN CURRICULAR: LA PERSPECTIVA DE EGRESOS DE UN CURSO DE NUTRICIÓN

Angélica Cotta Lobo Leite Carneiro<sup>1</sup>, Larissa Loures Mendes<sup>2</sup>, Maria Flávia Gazzinelli<sup>3</sup>

### RESUMO

**Objetivo:** avaliar o currículo do curso de graduação em nutrição a partir da perspectiva do egresso. **Método:** coleta de dados, por meio de questionário eletrônico, que abrangeu aspectos gerais do currículo, formação em nutrição, estrutura curricular e habilidades e competências desenvolvidas. Os resultados foram analisados por distribuição de frequência e com base em referenciais da área da educação. **Resultados:** Mais de 90,0% dos participantes apresentaram uma visão positiva com relação à formação crítica com vistas ao perfil do egresso e relevante para atuar como nutricionista, pesquisador e educador em saúde. As principais habilidades e competências descritas no projeto pedagógico foram desenvolvidas, com exceção do conhecimento do alimento desde a sua produção e da administração de unidades de alimentação e nutrição. Foi predominante a visão negativa em relação à carga horária das disciplinas e à coerência entre as disciplinas básicas e profissionalizantes. **Conclusão:** o currículo avaliado tem conduzido à formação de profissionais críticos, reflexivos e preparados para atender às demandas exigidas pelo Sistema Único de Saúde, entretanto, apresenta algumas fragilidades que indicam a necessidade de ações que aprimorem a efetivação dos princípios de interdisciplinaridade e flexibilização curricular e que promovam o desenvolvimento de certas habilidades e competências específicas do nutricionista e a revisão da matriz curricular.

**Descritores:** Avaliação; Currículo; Ciências da nutrição; Avaliação Educacional; Educação Superior.

### ABSTRACT

**Objective:** to evaluate the curriculum of the undergraduate nutrition course from the perspective of graduates. **Method:** data collection took place through an electronic questionnaire covering general aspects of the curriculum, nutrition training, curricular structure and skills and competences developed. The results were analyzed by frequency distribution and supported on educational references. **Results:** more than 90.0% of the participants presented a positive perspective of the critical training, in the view of the graduates' profile, and relevant to act as nutritionists, researchers and health educators. The main skills and competences described in the pedagogical project were successfully developed with the exception of knowledge on food, including its production, and management of food and nutrition units. A negative view predominated regarding the workload of semester courses and coherence between basic and vocational courses. **Conclusion:** the evaluated curriculum has led to the training of critical, reflective professionals who are prepared to meet the demands stipulated by the Unified Health System; however, there were some weaknesses that indicate the need for actions to improve the effectiveness of the principles of interdisciplinarity and curricular flexibility, and to promote the development of certain specific skills and competences of the nutritionists and to review the curricular program.

**Descriptors:** Evaluation; Curriculum; Nutrition Sciences; Educational Evaluation; Higher education.

### RESUMEN

**Objetivo:** evaluar el currículo del curso de graduación en nutrición, desde la perspectiva del egresado. **Método:** recolección de datos por medio de cuestionario electrónico, que abarcó aspectos generales del currículo, formación en nutrición, estructura curricular y habilidades y capacidades desarrolladas. Los resultados fueron analizados por distribución de frecuencia y con base en referenciales del área de la educación. **Resultados:** Más del 90,0% de los participantes presentaron una visión positiva con relación a la formación crítica, con vistas al perfil del egresado y relevante para actuar como nutricionista, investigador y educador en salud. Las principales habilidades y capacidades descritas en el proyecto pedagógico fueron desarrolladas, con la excepción del conocimiento del alimento desde su producción y de la administración de unidades de alimentación y nutrición. Fue predominante la visión negativa en relación a la carga horaria de las disciplinas y a la coherencia entre las asignaturas básicas y profesionalizantes. **Conclusión:** el currículo evaluado ha conducido a la formación de profesionales críticos, reflexivos y preparados para atender a las demandas exigidas por el Sistema Único de Salud, sin embargo, presenta algunas fragilidades que indican la necesidad de acciones que promuevan el desarrollo de ciertas habilidades y capacidades específicas del nutricionista y de revisión de la matriz curricular.

**Descritores:** Evaluación; Curriculum; Ciencias nutricionales; Evaluación Educacional, Educación Superior.

<sup>1</sup>Graduada em Nutrição. Doutoranda em Enfermagem pela Universidade Federal de Minas Gerais. Docente na Universidade Federal de Juiz de Fora. <sup>2</sup>Graduada em Nutrição. Doutora em Enfermagem pela Universidade Federal de Minas Gerais. Docente na Universidade Federal de Minas Gerais. <sup>3</sup>Graduada em Ciências Biológicas. Pós-Doutorado em Educação para Compreensão de Pesquisas Clínicas na Universidade de George Washington. Docente na Universidade Federal de Minas Gerais.

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## INTRODUCTION

In a critical perspective, a curriculum can be understood as a social, political and historical construction and, in order to understand it, it is necessary to pay attention to the structural, organizational and material conditions that permeate it, the political and administrative practices expressed in its development and the set of ideas and meanings that shape it and mold it in successive steps of transformation<sup>(1)</sup>. Evaluation is one of the strategies used to investigate the curriculum in these dimensions, tune it according to existing guidelines and policies and even promote its innovation<sup>(1,2)</sup>. There are several connotations that can be attributed to curricular evaluation. From a summative perspective, it is the interpretation of data, which are based on defined standards and criteria, and whose purpose is to appreciate the merit or value of something<sup>(2)</sup>. In a formative perspective, it is the attribution of meanings and the construction of reality, influenced by intervening values and contexts<sup>(3)</sup>.

Evaluating a curriculum presupposes interpreting, knowing and valuing its processes and products in order to improve it and produce a new one through the horizontal reconstruction of relations between cultures and uses of knowledge. The evaluation can promote the restructuring of the curriculum and the implementation of new educational actions that promote significant changes in the training of professionals, so that they may be able to respond critically to the demands and needs experienced in the different scenarios of action<sup>(4)</sup>.

In order to respond to these demands and needs of the fields of professional activity, it is necessary, first of all, to understand them. Curricular evaluation carried out from the perspective of graduates can contribute a good deal in this sense. Graduated students already experienced the curriculum during their training and exercised ways of acting in the work context mediated by the knowledge and skills acquired; for this reason, they are ideally enabled to analyze and criticize the curriculum more consistently.

In their daily work, graduates face very complex situations that lead them to confront the skills developed during the undergraduate course with those required in their work. Thus, it is possible to evaluate the curriculum vividly, considering its objectives and guiding principles,

its pedagogical proposal and curricular organization, as well as other aspects that make up the academic training process. The diagnosis of the opinions of the graduates on the adequacy of the curriculum in relation with the professional reality and demands of society characterizes a complementary and essential dimension to the integral process of evaluation of vocational training courses<sup>(5)</sup>.

Although necessary and important, the involvement of graduates in curricular evaluation is recent<sup>(5,6)</sup>. It was only after 2004, with the enactment of Law 10,861, which established the National System for the Evaluation of Higher Education (SINAES) and its regulations, decree 300 of the Ministry of Education from 30/01/2006, which approved the instrument for external evaluation of the SINAES, that Higher Education Institutions envisaged in the relation with their graduated students an opportunity to reach a better performance of institutional evaluations. This is because the SINAES encourages, in the multiple evaluations that compose it, the participation and the engagement of various actors of education<sup>(7)</sup>.

In the prerogative of developing a participatory assessment, capable of producing changes in the curriculum and affecting the actors involved, in addition to meeting the SINAES' recommendation, this study on curricular evaluation by graduates is part of a larger study that includes the views of different subjects. Despite the relevance of considering these actors of the educational process in curricular evaluation<sup>(6)</sup>, the course analyzed here, in its more than 10 years of existence, has never performed an evaluation including them. In view of the above, the present study aims to evaluate the curriculum of the undergraduate nutrition course from the perspective of graduates.

## METHODS

This study is an excerpt of a major doctoral research whose objective was to evaluate the curriculum of the Nutrition Course of the Federal University of Minas Gerais (UFMG) from the perspective of teachers, undergraduate students and graduated students, considering the paradigm of participatory and emancipatory curricular evaluation, understood as a way of knowing and learning that produces subjectivation and that assumes the participation of subjects with different knowledge and power

positions. In this section are presented the quantitative results of the curricular evaluation carried out by graduates from September to December 2014. The results of this evaluation would be presented to teachers, participants of the larger study, so that they could be considered during the curricular evaluation carried out by them. However, due to the extension of the period of data collection with the graduates, in an attempt to increase the adherence to the research, it was not possible to use these results in the evaluation carried out by the teachers, for lack of time. In view of this, a research report was prepared and sent to the Structuring Teaching Nucleus and the Collegiate of the Nutrition Course.

A total of 303 nutrition graduates from the UFMG between the years 2008 (first class) and 2013, who had an *e-mail* registered, were invited to participate in the study, at the Nursing School Teaching Section, where the course is offered. The invitation to participate in the survey was sent by *email*. In it, there was a link to access a self-administered electronic questionnaire, exclusively designed for this research, through a tool for creating electronic forms in *Google Docs*.

The objective of the questionnaire was to evaluate the students' view of their training and of the curriculum of the course. Initially, the participants should read the Informed Consent Term (ICT) and, if they were willing to participate, they had immediate access to the questions on the form, at which point they should indicate their area of professional activity and their year of graduation.

In the preparation of the questionnaire, the pedagogical project of the nutrition course (PPC)<sup>(8)</sup> and some studies on curricular evaluation carried out by graduates<sup>(9,10)</sup> were taken as reference.

The open questions of the questionnaire addressed positive points and points that could be improved in the course. Questions were elaborated with the intention that the graduate students could express in singular manner their opinions about the investigated contents. Data obtained through these questions were grouped and used as reference for further elucidation of the closed questions.

Closed questions were separated into three groups. The first one addressed issues related to the general aspects of the curriculum: the guiding principle of training, the pedagogical proposal and the curricular organization. To these

questions, the participant could answer "absolutely yes", "partially yes", "no" and "I do not know". The second group included questions regarding the skills and competencies needed to train nutritionists, and the response options were "nothing", "little" and "too much". In the last group were the questions that addressed the participants' general view on curricular structure, internships, integrative and monitored practical activities, rural internship, and their training in nutrition. To these questions, the participant could answer: "very bad", "bad", "good", "very good" and "I do not know".

The results of the closed questions were inserted in a *Microsoft Excel*<sup>®</sup> version 2010 worksheet, analyzed by frequency distribution and based on educational references, specifically on curricular evaluation. For the description of the results of the first block of questions, the percentages of answers "absolutely yes" and "partially yes" were summed, representing a positive view of the evaluated question, while the option "no" indicated a negative view.

The project was approved by the Research Ethics Committee of the Federal University of Minas Gerais (CAAE: 32085114.3.000.5149), and all participants signed the Informed Consent Term.

## RESULTS AND DISCUSSION

The results of the curricular evaluation from the perspective of the graduates refer to the analysis of their answers to the closed and open questions about their training and about the curriculum of the Nutrition Course and will be presented as they were organized in the data collection instrument.

The research had the participation of 104 graduates (34.3%). The majority of participants completed the nutrition course in 2012 (27.9%) and 2013 (22.1%). Those graduated in 2008 and 2009 were the ones that least adhered to the research (14.4% and 13.5%, respectively). This participation of graduates was significant when compared to the standard rate of return of *online* research questionnaires, which ranges between 7.0 and 25.2%<sup>(11-14)</sup>. Usually, the rate of adherence to research conducted *online* tends to be lower when compared to traditional research, sent by conventional mail. However, due to the shorter time required for data collection, reduced cost, convenience and greater agility in the tabulation of results, this form of data collection has been used frequently in different studies<sup>(11)</sup>.

In this research, in particular, there is one factor that may have hindered adherence. Possibly, some e-mails were out of date or in disuse, especially those of people who had graduated a longer time ago, a fact that may justify a lower participation of those who completed the nutrition course in the years 2008 and 2009, when compared to those who concluded it more recently in 2012 and 2013.

As for the possible areas of professional activity of the nutritionists, most of the participants participated in clinical nutrition (21.0%), followed by 19.0% who attended a master's or doctorate course without having another professional activity and 16.2% who did not work in the area of nutrition. Graduates working in collective nutrition (13.4%), collective health (6.7%), and sports nutrition (4.8%) also participated in the study. It was observed that the distribution of professional areas of the research participants, with the exception of those who attended a master's or doctorate degree course, and those who did not work in the area of nutrition, is in line with a research carried out by the Federal Council of Nutritionists<sup>(15)</sup>, which defined clinical nutrition as the main area (41.6%), followed by collective nutrition (32.4%), teaching (9.4%), collective health (8.8%) and sports nutrition (4.1%). It is also in line with a study that involved graduates of a nutrition course<sup>(16)</sup>, in which most of the participants worked in the

clinical area (36.6%), followed by collective nutrition (31.0%). However, the finding is in dissonance with another study<sup>(17)</sup>, in which collective nutrition was the most frequent area among participants (28.9%), followed by clinical nutrition (27%), teaching (20.7%) and public health (12.6%).

Observing the results on the general aspects of the curriculum (Table 1), it was found that the proportion of graduates who had a positive view of the curriculum was higher than the proportion of those who expressed negative views. The training with the profile of the graduates was positive for 96.1% of those surveyed. About critical training, 97.1% also expressed a positive view, saying that they were trained to act as critical professionals. Almost all the graduates showed that they had received relevant knowledge to act as a nutritionist (98.1%), as a health researcher and educator (90.3%), and to carry out the activities inherent to the profession (94.9%). Still with regard to the general aspects of the curriculum, according to 90.3% graduates, there was integration between teaching, research and outreach activities during their training in nutrition. It is important to highlight that, in the responses to the open questions most of the participants stressed the possibility of insertion into research activities as one of the positive aspects of the course.

Table 1 - View of graduates on the effectiveness of the recommendations in the Pedagogical Project of the Nutrition Course of the Federal University of Minas Gerais. Belo Horizonte (MG), 2014.

N°	Contents investigated	Positive view		Negative view	
		n	%	N	%
1	Training turned to the profile of graduates	98	96.1	4	3.9
2	Training to act as a critical professional	101	97.1	3	2.9
3	Acquisition of relevant knowledge to act as a nutritionist	102	98.1	2	1.9
4	Acquisition of knowledge that contributes to the professional activity	94	94.9	5	5.1
5	Acquisition of knowledge to act as a researcher and as a health educator	93	90.3	10	9.7
6	Interaction between teaching, research and outreach activities	93	90.3	10	9.7
7	Articulation between theory and practice	97	94.2	6	5.8
8	Teacher-student relationship based on mutual respect and exchange of experiences	102	98.1	2	1.9
9	Coherence between the contents of basic and vocational subjects	86	85.1	15	14.9

Source: Research data, 2014.

As to the curricular principle of articulation between theory and professional practice, a considerable number of respondents presented a positive view (94.2%). This result corroborates what was found in the responses to open questions, where the student's insertion into practical scenarios since the beginning of the course (an action developed to make such articulation viable) was one of the most outstanding items among the positive aspects of the course. This insertion is reinforced by Neto and Silva<sup>(18)</sup> as one of the enhancer factors of critical and reflexive training; however, the authors emphasize the need to extend the student's time in the field of practice, so that they may exercise even more their critical reflexivity and advance in the development of skills necessary for their training.

When investigating the pedagogical proposal of the course, which includes, among others, the teacher-student relationship based on respect and exchange of experiences, the view of the graduates was also positive (98.1%). The only content investigated, which was curricular organization and addressed the coherence between the content of the basic and vocational courses of the curriculum, was the one with the lowest percentage of positive answers (85.1%). This result deserves attention because it was one of the elements evaluated in the first block that presented the highest percentage of negative view among respondents, and it is directly related to another curricular principle of the course, the interdisciplinarity.

Another issue that deserves attention is curricular flexibility. Although flexibility was not investigated in the closed questions, this aspect was emphasized with vehemence in their answers of the graduates to the open questions, who claimed a limited offer of optional courses during semesters as a point to be improved in the course.

We observed that the graduates presented a very positive view of their training and indicated that the curriculum of the nutrition course is effective in pedagogic practice, corroborating the findings reported in the literature<sup>(19)</sup>. As strong aspects of the curriculum pointed out by the participants, it is worth mentioning the generalist, critical and reflexive training, adjusted to the reality of the professional performance of nutritionists and potentiating the main skills and competences required for this profession. In order to enable this training, curricular

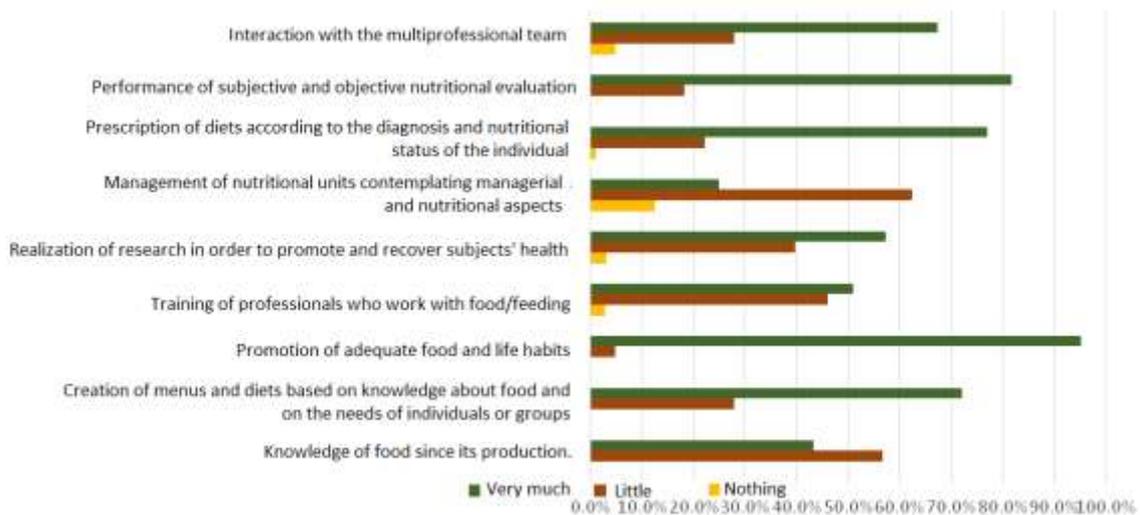
internships (including rural internships) of excellent quality and practical activities are offered since the beginning of the course, as a way to promote the integration of theory and practice and interdisciplinarity.

A study carried out with students from the health area<sup>(20)</sup> highlighted that through the curricular traineeship, it was possible to opportunistically articulate theory and practice, interdisciplinarity and multiprofessional work. Furthermore, it contributed greatly to the critical and reflective training of the various professionals, including nutritionists. In another study, when referring to the competences developed in the training process and experienced in the professional daily life, graduates of a nursing course were emphatic in highlighting the importance of the practice associated to the theory for meaningful construction of knowledge<sup>(6)</sup>.

This training, provided by the course and so well evaluated by its graduates, is in line with that recommended in the Curricular Guidelines for the Nutrition Course<sup>(21)</sup>, which determines the training of generalist nutritionists capable of thinking critically, analyzing the problems of society and seeking solutions for them. The training of nutritionists based on these precepts prepares students beyond the performance in all areas of nutrition, passing through a more complex perspective, less "biological", more focused on social issues and in their insertion in the SUS, with capacity to discern local problems<sup>(22)</sup>. It is important to highlight the need to improve the effectiveness of the principles of interdisciplinarity and curricular flexibility.

In the investigation of skills/competences defined in the curriculum as necessary for the training of nutritionists (second group of questions - Figure 1), it was possible to verify that promoting an adequate diet and life habits (95.2%), performing nutritional evaluation (81.7%), prescribing diets (76.9%) and creating menus (72.1%) were the most developed activities during the training. On the other hand, knowledge on food since its production and management of food units contemplating managerial and nutritional aspects were the skills/competences less developed by the graduates. In the answers to the open questions, one of the participants pointed out that he lacked a more solid training in managerial content with an emphasis on personnel management.

Figure 1 - Degree of development of skills/competences during training in the perspective of graduates of the Nutrition Course of the Federal University of Minas Gerais. Belo Horizonte (MG), 2014.



Source: Research data, 2014.

It is possible to notice that, according to the graduates, the great majority of specific skills and competences of nutritionists had been developed during the training in the nutrition course studied. However, as points to be adjusted in the curriculum, skills and competences related to the knowledge of food from its production and the management of food and nutrition units (FNU) need to be better developed. This result indicates a process of recontextualization<sup>(23)</sup> of the planned curriculum, that is, in the transference from the official context to the practical context, there was a reinterpretation and repositioning that produced new interpretations of the PPC, which may have hampered the development of skills and competences. This is because, contents and semester courses destined to the development of these skills and competences are included in the pedagogical project of the course<sup>(8)</sup>, but according to the graduates, this did not occur. It is explicit in the PPC that the course pervades the global view of the food chain, the transformation of the animal/vegetable product into food and its integration with man. Moreover, the curricular program includes courses such as "ecology applied to nutrition" and "geo-economics in nutrition", whose purpose is to construct knowledge related to the food chain, its relation with the environment, and the geographic and economic aspects of food production, distribution and consumption. With regard to the

management of food and nutrition units, the curricular matrix includes two specific courses and two compulsory curricular traineeships with this purpose, totaling 300 hours of training, as well as several other courses in the food area which together constitute the managerial basis of the UAN as food composition, dietary technique and menu planning.

In the attempt to understand the reasons why these skills and competences had not been satisfactorily developed, according to the graduates, a hypothesis was raised, besides the recontextualization already discussed. The large number of respondents who did not work in the area of collective nutrition may have influenced the negative view they presented in relation to the development of skills and competencies to act in this area.

Although this is one of the fields of work that currently employs nutritionists<sup>(24)</sup>, it is not among the main aspirations of professional performance among nutrition students<sup>(25)</sup>. In the evaluation of the curricular matrix of a nutrition course, researchers<sup>(26)</sup> also found a gap in the development of skills and competences in the UAN management area and, in an attempt to correct this gap it, the PPC included contents related to the management of personnel.

In the last group of questions analyzed, the intention was to investigate the general view of graduates as to their training in nutrition (Table 2). The compulsory curricular traineeships

corresponded to the item that obtained the highest satisfaction among the participants, since 55.9% considered them "very good" and 39.2% "good". This result corroborates what was found in the answers to the open questions, in which the high quality of the curricular traineeships was

highlighted among the positive points of the course. The rural traineeship school, as an internship option for students, was also very well evaluated by the graduates (46.3% "very good" and 45.3% "good").

Table 2 – General view of the graduates of the Nutrition Course of the Federal University of Minas Gerais. Belo Horizonte (MG), 2014.

N°	Item to be evaluated	Very bad		Bad		Good		Very good	
		N	%	N	%	N	%	N	%
1	Curricular structure (courses and workload that make up the curriculum)	2	2.0	34	33.0	57	55.3	10	9.7
2	Mandatory curricular internship	0	0.0	5	4.9	40	39.2	57	55.9
3	Practical Integrative Activities (PIAs)	4	4.0	23	22.7	53	52.5	21	20.8
4	Practical Monitored Activities (PMA)	6	5.9	17	16.7	54	52.9	25	24.5
5	Rural Internship	1	1.0	7	7.4	43	45.3	44	46.3
6	In general, the training in nutrition by UFMG was:	0	0.0	3	2.9	44	42.7	56	54.4

Survey: Research data, 2014.

The satisfaction in relation to the Practical Monitoring Activities - PMA (which aim to promote, since the beginning of the course, the articulation between theory and practice through practical activities developed by the students and monitored by teachers) and Practical Integrative Activities – PIA (which aim to promote interdisciplinarity in the first semesters of the course in order to avoid fragmentation and overlapping of contents) was quite varied. The results varied between 22.7% "very good", 52.7% "good" and 19.7% "bad". In these aspects, the answers to the open questions were also very varied, revealing a lack of consensus among the participants. There were those who valued them and considered them as a strong point of the course and those who advocated the reduction or even withdrawal of PIA and PMA from the curricular matrix.

The question that dealt with the satisfaction of the graduates with the curricular matrix was the one that obtained the lowest percentage of "very good" (9.7%) and the highest percentage of "bad" (33.0%). This result is in line with the answers to the open questions, where a large part of the graduates highlighted the workload of curricular components, the insertion and/or exclusion of some of them from the curricular matrix, the offer of optional courses, and the overlapping of content as important points to be improved in the curriculum. The

analysis of these results shows the need to review the curricular matrix in order to adjust the components and their timetables and the coherence between contents of basic and professional courses. In the quest to understand the social representations of graduates about their undergraduate course, researchers<sup>(27)</sup> also found elements that indicated the need to adjust the workload of some courses of the matrix. However, they point out that these curricular changes are one of the most difficult because "they involve pedagogical changes, changes that confront different interests among individuals, disturb worldviews and crystallized practices, and they depend on internal and external power relations in the University" (p. 183)<sup>(27)</sup>.

In general, the satisfaction of graduates in relation to their training in Nutrition was very positive, since almost all of them rated it as "very good" (54.4%) or "good" (42.7%).

A report with all the results of this research was sent to the Structuring Teaching Board and to the Collegiate of the Nutrition Course. These results were taken as reference in the process of elaboration of the new Pedagogical Project of the Course (PPC) in 2015, and the evaluation instrument used in the present research became part of the policy of follow-up of graduates. The Collegiate intends to promote a curricular reform in the coming years and the results of the

curricular evaluation carried out by the graduates will be used to promote such a reform.

### FINAL CONSIDERATIONS

The study allowed concluding that, from the perspective of the graduates, the curriculum of the nutrition course of the UFMG has led to the training of critical, reflective professionals prepared to meet the demands stipulated by the SUS and the diverse fields of action of nutritionists. However, there are some weaknesses in the current curriculum that indicate the need for actions to promote the development of some specific skills and competences of dietitians, the review of the curriculum, and the improvement of the effectiveness of interdisciplinarity and curricular flexibility. In this sense, frequent and participative meetings destined to the analysis and adjustment of the curricular matrix may lead to the training of nutritionists more aligned with the curricular directives, the social context where the nutritionist is inserted and the demands of the professionals' areas of activity.

Moreover, continuing education can enhance the development of skills and competences required for the training nutritionists and can provide a better alignment between basic and vocational courses towards overcoming the fragmentation of knowledge.

With regard to the study developed, it is important to note that the open questions inserted in the data collection instrument had a restricted scope. The answers to these questions were rather superficial and did not allow the capture of the singularities of the subjects involved in the research. The inclusion of open questions in self-administered questionnaires should be carefully thought out so that they may truly fulfill their purpose.

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**Mailing address:**

Angélica Cotta Lobo Leite Carneiro

Street Manoel Byrro, 241 - Vila Bretas

ZIP CODE: 35032-620 – Governador Valadares/MG – Brazil

E-mail: [angelica.cotta@ufjf.edu.br](mailto:angelica.cotta@ufjf.edu.br)