How to cite this article: Ravazzani EDA, Matia G, Coelho IM, Esteves RZ. Evaluation of the development of general competences in undergraduate courses in nutrition. Inter J H Educ. 2018;2(1):42-52. doi: 10.17267/2594-7907ijhe.v2i1.1863

Journals BAHIANA
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Artigo original

Evaluation of the development of general competences in undergraduate courses in nutrition

Avaliação do desenvolvimento das competências gerais em graduandos de cursos de nutrição

Edilceia Domingues do Amaral Ravazzani[1], Graciele de Matia[2], Izabel Meister Coelho[3], Roberto Zonato Esteves[4]

[1]Author for correspondence. Autonomous University Center of Brazil, Curitiba, Paraná, Brazil. ORCID: 0000-0001-8611-6503. edilceiarav@hotmail.com
[2]Faculties Little Prince, Curitiba, Paraná, Brazil. ORCID: 0000-0002-6538-4346. graciele.matia@gmail.com
[3]Faculties Little Prince, Curitiba, Paraná, Brazil. ORCID: 0000-0002-4904-0746. izamcoelho@gmail.com
[4] Faculties Little Prince, Curitiba, Paraná, Brazil; State University of Maringá, Maringá, Paraná, Brazil. ORCID: 0000-0001-6632-775X. manhabc209@gmail.com

RESUMO: As Diretrizes Curriculares Nacionais direcionam a educação para mudanças no processo ensino-aprendizagem, buscam a valorização da formação quando estabelecem em sua estrutura, competências gerais e específicas, enfatizando a importância do acompanhamento pela avaliação sistemática e permanente visando à melhoria na graduação. A presente pesquisa teve por objetivo avaliar o desenvolvimento das competências gerais em graduandos de nutrição. Trata-se de um estudo analítico com abordagem quantitativa e método transversal onde se utilizou um questionário, elaborado e validado por Matia e Coelho (2015) composto por 44 questões, aplicado em estudantes e professores de quatro instituições de ensino por meio do Software Google forms. Para análise descritiva dos dados foram utilizadas medidas de tendência central e medidas de variabilidade e os testes Mann Whitney, Tukey e Teste- t com nível de significância de $p < 0,05$, realizadas por meio do Software livre R versão 3.1.1. Obteve-se um total de 210 respostas, sendo 110 de estudantes de ambos os sexos e 100 de professores. A média de idade de estudantes foi de 24,66 ± 7,41 anos. A amostra foi composta por predominância de participantes do gênero feminino (87,3%). Na visão dos professores, os estudantes avaliados parecem estar desenvolvendo mais competências e habilidades de Gestão em saúde e Educação em saúde e na visão dos estudantes houve pequeno destaque apenas na Educação em saúde. Conclui-se que os estudantes dos cursos de nutrição envolvidos na pesquisa não estão desenvolvendo as competências profissionais gerais necessárias a formação, apontadas nas diretrizes, em sua totalidade.

PALAVRAS-CHAVE: Competência profissional. Educação baseada em competências. Nutrição. Avaliação educacional.

ABSTRACT: The National Curricular Guidelines direct education to changes in the teaching-learning process, seek the appreciation of training when they establish in their structure, general and specific competences and emphasize the importance of a systematic and permanent follow-up evaluation aimed at improving graduation. The present research had the objective of evaluating the development of the general competences of undergraduate students of nutrition. An analytical study with a quantitative approach and cross-sectional method using a questionnaire, elaborated and validated by Matia and Coelho (2015) composed of 44 questions, which was applied to students and teachers, from four educational institutions, through the Google forms Software. For the descriptive analysis of the data, we used measures of central tendency and measures of variability and the tests Mann Whitney, Tukey and Test-t, with level of significance of $p < 0.05$, realized through Free software R version 3.1.1. A total of 210 answers were obtained, of which 110 were students of both sexes and 100 of teachers. The mean age of students was 24.66 ± 7.41 years. The sample consisted of a predominance of female participants (87.3%). In the view of the teachers, the evaluated students seem to be developing more competences and abilities of Management in health and Education in health and in the vision of the students there was small emphasis only in Education in health. It is concluded that the students of the courses of nutrition involved in the research, are not developing the general skills necessary for the training, pointed out in the guidelines, in its entirety.

KEYWORDS: Professional competence. Competency-based education. Nutrition. Assessment.

Submitted 10/03/2018, Accepted 18/07/2018, Published 07/08/2018
Inter J H Educ, Salvador, 2018 October;2(1):42-52
Doi: 10.17267/2594-7907ijhe.v2i1.1863 | ISSN 2594-7907

Introduction

In Brazil, National Curricular Guidelines (NCG) for health courses seek to value training, propose changes in the teaching-learning process and envisage curricular changes which orientate professional training according to general and specific competencies, with an emphasis on the principles of the Unified Health System (SUS). They consider the needs of individual and collective health in order to rearrange the care model, value the promotion of health and reinforce the need for systematic evaluation, in order to determine an increase in undergraduate students' knowledge[1-2]. In recent decades, the education of health professionals has been redesigned, a process which has resulted from a diverse range of structural changes to the contemporary world: political, economic, cultural, social and technological. These changes have redirected education and health policies which, in turn, recover fundamental elements, in order to rethink the education of health professionals[3].

According to the NCGs, a nutritionist is a professional with general, humanistic and critical training, qualified to work in all areas of food and nutrition, focusing on promoting, maintaining and recovering health and preventing diseases, contributing towards improving quality of life, based on ethical principles, and reflecting on the current reality[1]. Thus, professional practice should meet society's demand for nutritionists who adapt to constant changes.

The transition of traditional to competency-based teaching has aroused the interests of researchers on the subject and different concepts of competency have been postulated, with competency-based education associated with "being capable." Therefore, competency can be understood as a set of attributes and skills developed by individuals[4-5]. In health, competency can be understood as an individual's capacity to take care of another while engaging their knowledge, abilities and attitudes on prevention and promotion in different areas of activity[5-6].

Assessing the development of competencies is a challenge but this activity is encouraged as a mechanism which enables the follow-up of knowledge construction. Forms of assessment need to be established for continuous improvements in the curricula and so that efficient, conscientious and critical professionals are trained for work and society[7-8].

General competencies, healthcare, decision-making, communication, leadership, administration, management and permanent education are comparable in eleven of fourteen other health courses[1-9].

This work is justified since the NCGs define health training based on general and specific competencies which include social health needs, with a particular emphasis on SUS. They also highlight that training professionals should include excellence in health promotion and recognizing social factors which trigger the health-disease process.

General competencies may be considered a cornerstone for a professional and, therefore, their evaluation is important, since this will provide a proposal of actions for lecturers in order to resolve any problems which may arise. This study sought to evaluate the development of general competencies in undergraduate nutrition students at public and private higher education institutions in a municipality in the south of Brazil.

Methodology

This is an analytical study with a quantitative, cross-cutting approach. The sample was made up of higher education students and lecturers attached to recognized nutrition courses, situated in a municipality in the south of Brazil. Enrolled students and lecturers who taught classes on the course were included in the research; they all agreed to take part in this research, signing an Informed Consent Form (TCLE). Public and private institutions were included in the research, and identified by the letters A to D; with institutions A, B and D having equal participation but less than institution C. Lecturers and students who did not fully complete the applied instrument were excluded from the research.

For data collection, versions 5A and 5B of an instrument to evaluate the development of general

competencies for health courses were used, developed and validated by Matia and Coelho, and this was divided into three dimensions: healthcare, health management and health education. The dimensions were based on the curricular guidelines for medicine courses, which were recently reformulated[10]. The self-applicable data collection instrument comprised 44 questions and a Likert-type measurement scale. Version 5A of the questionnaire was applied to the students and Version 5B a similar, mirror questionnaire to the lecturers, with the same directives, but separate outlooks. Thus, for each responding student there was a questionnaire completed by a lecturer, which they used to evaluate the students.

The instruments were applied using Google Forms software. The responses were codified, and the Likert scale was presented in a numeric form from 1 to 5, where 1 represents "totally disagree" and 5 "fully agree". Measurements of central tendency and measurements of variability were used for descriptive data analysis. The Mann-Whitney U Test, T-Test and Tukey's tests were applied to verify if there was reason to believe that the values of one of the groups were higher than the other and, therefore, significant results to those $p < 0.05$ values were considered in all the tests. Statistical analyses were performed using the R statistics program, version 3.1.1. The project was referred to the Ethical Research Committee (CEP) CAAE: 53978315.4.0000.5580 and approved on 8th April, 2016.

Results

Two hundred and ten (210) higher education students and lecturers from four different higher education institutions (A-D) completed the questionnaire, comprising 110 students and 100 lecturers. Of the four participating institutions, three were private and one public. They have all been offering a nutrition course for more than 10 years, use a traditional curriculum and their undergraduate courses are completed in 8 semesters. The students had an average age of 24.66 ± 7.41 years, with a minimum age of 17 and maximum of 55.

Table 1 presents descriptive data from the main characteristics of the study, expressed in numbers and the percentages of respondents in each category of variables used.

Table 1. Descriptive variables of nutrition course students from the south of Brazil, 2016 (to be continued)

Variable	Number	Percentage
Sex		
Female	96	87.3
Male	14	12.7
Educational institution		
Institution A	30	27.3
Institution B	34	30.9
Institution C	16	14.5
Institution D	30	27.3
Current period		
First	17	15.5

Table 1. Descriptive variables of nutrition course students from the south of Brazil, 2016 (conclusion)

Second	6	5.5
Third	9	8.2
Fourth	23	20.9
Fifth	19	17.3
Sixth	14	12.7
Seventh	20	18.2
Eighth	2	1.8

Source: Study data.

It should be noted that not all of the periods were in progress while the research was performed, as some of the institutions had not held a selective process for entry every semester and, therefore, there was a lower participation of students from the second, third and eighth periods.

When evaluating the responses given by the students and lecturers, Tables 2 and 3 demonstrate the average values of the scores obtained from the responses given, according to the three evaluated dimensions; it should be noted that the average of the responses given for the health management dimension was the lowest awarded by students and lecturers, with averages of 4.07±0.53 and 3.28±0.64, respectively. Compared to the healthcare and health education dimensions, it is also highlighted that the lecturers' evaluations in all the dimensions were lower than those given by the students.

Table 2. Average, median, minimum, maximum and standard-deviation for the three dimensions of the questionnaire applied to students from nutrition courses in the south of Brazil, 2016

	No	Min	1st Quartile	Median	3rd Quartile	Max	Average	DP
Health care	110	2.889	3.889	4.222	4.444	5	4.19	0.44
Health management	110	2.292	3.75	4.125	4.49	5	4.07	0.53
Health education	110	3.273	4.182	4.455	4.727	5	4.44	0.4
General	110	2.682	3.892	4.193	4.5	5	4.19	0.43

Source: Study data.

Table 3. Average, median, minimum, maximum and standard-deviation for the three dimensions of the questionnaire applied to lecturers on nutrition courses in the south of Brazil, 2016

	No	Min	1st Quartile	Median	3rd Quartile	Max	Average	DP
Health care	100	2	3	3.611	4.111	4.778	3.55	0.67
Health management	100	2.25	2.781	3.167	3.677	4.708	3.28	0.64
Health education	100	2.091	3.091	3.636	4.295	5	3.72	0.72
General	100	2.295	2.955	3.364	3.926	4.795	3.44	0.62

Source: Study data.

Significant differences can be observed in Table 4, where "Institution A" was identified as the one which received the best scores in the student evaluation in the health education dimension (D3).

Table 4. Tukey's test to evaluate the existence of a significant difference in specific comparisons from the questionnaires applied on a nutrition course in the south of Brazil, 2016

Pairs of institutions	D1	D2	D3	General
"Institution B" – "Institution A"	-0.3	-0.24	-0.4	-0.31
"Institution C" – "Institution A"	-0.46	-0.25	-0.82*	-0.51
"Institution D" – "Institution A"	-0.36	-0.31	-0.58**	-0.41*
"Institution C" – "Institution B"	-0.15	-0.01	-0.42	-0.2
"Institution D" – "Institution B"	-0.05	-0.07	-0.18	-0.1
"Institution D" – "Institution C"	0.1	-0.06	0.25	0.1

Source: Study data.

Tukey's test

** Indicates p value < 0.001

* Indicates p value < 0.05

Caption:

D1 – Healthcare dimension

D2 – Health management dimension

D3 – Health education dimension

Responses from the undergraduates who were in the first four semesters (first two years) were statistically compared to those who were in the final half of the course (last two years). Analyses of the questionnaires answered by the students are expressed in Table 5, demonstrating the results for each question, dimension and general evaluation.

It is observed in the table that there was only a significant difference in some of the questions in the three dimensions.

Table 5. Average and standard-deviation for the dimensions and questions by cycles of the questionnaires applied to students and lecturers on nutrition courses in the south of Brazil, 2016 (to be continued)

	Student		Lecturer	
Dimension	Average (DP) 1st and 2nd years	Average (DP) 3rd and 4th years	Average (DP) 1st and 2nd years	Average (DP) 3rd and 4th years
D1	4.11 (0.5)	4.26 (0.36)	3.42 (0.57)	3.69 (0.75)*
Q1.1	4.09 (0.84)	4.36 (0.59)	3.82 (0.74)	3.9 (1.05)
Q1.2	3.78 (0.92)	4.09 (0.73)	3.39 (0.92)	3.61 (1.22)
Q1.3	3.98 (0.89)	4.09 (0.73)	2.82 (1.01)	3.73 (0.93)*
Q1.4	4.29 (0.69)	4.2 (0.78)	3.33 (0.89)	3.84 (0.94)*
Q1.5	4.24 (0.82)	4.6 (0.74)*	3.59 (0.83)	3.86 (0.94)
Q1.6	3.93 (0.96)	4.07 (0.77)	3.22 (0.78)	3.53 (0.94)*
Q1.7	4.33 (0.72)	4.49 (0.69)	3.33 (0.77)	3.76 (0.8)*
Q1.8	4.07 (0.88)	3.87 (0.98)	3.82 (0.77)	3.41 (1.04)*
Q1.9	4.27 (0.85)	4.6 (0.6)*	3.47 (0.64)	3.55 (0.71)
D2	3.98 (0.55)	4.16 (0.5)	3.03 (0.48)	3.53 (0.69)*
Q2.1	4.22 (0.85)	4.13 (0.75)	3.24 (0.97)	3.82 (1.13)*
Q2.2	3.75 (1.09)	4.11 (0.94)	3.35 (0.77)	3.67 (0.83)
Q2.3	3.82 (0.92)	4.18 (0.86)*	3.12 (0.65)	3.69 (0.82)*
Q2.4	4.04 (0.94)	4.29 (0.71)	3.1 (0.46)	3.45 (0.77)*
Q2.5	4.05 (0.97)	4.18 (0.98)	3.08 (0.48)	3.41 (0.61)*
Q2.6	4.07 (0.94)	4.27 (0.95)	3.02 (0.58)	3.41 (0.67)*
Q2.7	4.47 (0.81)	4.67 (0.7)	3.43 (0.9)	4.29 (0.79)*
Q2.8	3.96 (1.1)	4.11 (1.01)	2.96 (1.06)	3.51 (1.21)*
Q2.9	4.4 (0.78)	4.58 (0.74)	2.96 (1.06)	3.59 (1.22)*
Q2.10	4.15 (0.78)	4.25 (0.67)	3.18 (0.77)	3.51 (0.87)*
Q2.11	4.05 (0.85)	4.05 (0.91)	3.18 (0.79)	3.41 (0.96)
Q2.12	4.65 (0.52)	4.78 (0.53)	3.43 (0.85)	4 (0.79)*
Q2.13	4.53 (0.54)	4.64 (0.65)	3.47 (1.05)	3.94 (1.16)*
Q2.14	4.13 (0.75)	4.45 (0.74)*	3.25 (0.8)	3.61 (1.08)
Q2.15	3.67 (0.94)	3.98 (0.91)	2.78 (0.64)	3.33 (0.88)*
Q2.16	3.58 (1.01)	3.85 (1.03)	2.39 (0.9)	3.29 (0.74)*
Q2.17	3.55 (0.96)	3.78 (1.01)	2.41 (0.88)	3.29 (0.79)*
Q2.18	3.69 (0.88)	3.89 (0.92)	2.49 (0.9)	3.37 (0.76)*
Q2.19	3.71 (0.96)	3.75 (1.02)	2.75 (0.82)	3.41 (0.91)*
Q2.20	4.04 (0.96)	4.31 (0.86)	2.98 (0.58)	3.47 (0.89)*
Q2.21	4.09 (0.97)	4.24 (0.82)	3.02 (0.37)	3.31 (0.82)*
Q2.22	4.02 (0.89)	4.13 (0.77)	3.22 (0.73)	3.63 (1.07)*

Table 5. Average and standard-deviation for the dimensions and questions by cycles of the questionnaires applied to students and lecturers on nutrition courses in the south of Brazil, 2016 (conclusion)

Q2.23	3.84 (1.01)	4.02 (0.93)	3.35 (0.98)	3.76 (0.85)*
Q2.24	3.07 (1.12)	3.11 (1.2)	2.51 (1.03)	2.69 (1.1)
D3	4.34 (0.45)	4.55 (0.32)*	3.56 (0.56)	3.9 (0.82)*
Q3.1	3.85 (1.1)	4.44 (0.63)*	3.41 (0.88)	4.1 (0.96)*
Q3.2	4.09 (0.99)	4.13 (0.72)	3.69 (0.95)	3.84 (1.26)
Q3.3	4.11 (0.88)	4.16 (0.81)	3.43 (0.85)	3.65 (1.27)
Q3.4	4.11 (0.88)	4.53 (0.66)*	3.61 (0.92)	4.14 (1.08)*
Q3.5	4.42 (0.81)	4.69 (0.57)	3.75 (0.8)	4.24 (0.72)*
Q3.6	4.18 (0.94)	4.36 (0.78)	3.43 (0.61)	3.49 (1.16)
Q3.7	4.64 (0.56)	4.76 (0.54)	3.35 (0.66)	3.63 (1.13)*
Q3.8	4.55 (0.63)	4.76 (0.54)*	3.33 (0.62)	3.67 (1.03)*
Q3.9	4.47 (0.66)	4.78 (0.5)*	3.31 (0.58)	3.73 (1)*
Q3.10	4.58 (0.69)	4.69 (0.69)	3.76 (0.76)	3.98 (1.07)
Q3.11	4.75 (0.52)	4.69 (0.63)	4.04 (0.72)	4.37 (1.05)*
Geral	4.14 (0.44)	4.32 (0.33)*	3.34 (0.5)	3.71 (0.7)*

Fonte: Dados do estudo.

Valor de p correspondente ao resultado do teste t ou de Mann-Whitney.

* Valor p < 0,05 indica diferença significativa

Legenda:

Q - Questão

D1 – Dimensão Atenção à saúde

D2 – Dimensão Gestão em saúde

D3 – Dimensão Educação em Saúde

For the lecturers, the students in the last periods of the course presented a better score in relation to those in the initial periods for the health management dimension, followed by the health education dimension. The health management dimension considers managerial activities (team, physical resources and materials), teamwork, problem solving (resolving conflicts), decision-making and leadership. This result may indicate that the courses evaluated look for technical training to the detriment of knowledge and developing the skills required for a professional's adequate and comprehensive training. Significant results may be observed in the general evaluation, where it is noted that almost all of the questions present significant statistical results ($p<0.05$) which may demonstrate that, from the lecturers' point of view, the students are gradually developing general competencies throughout the course, since the final score awarded is higher than the initial one.

Discussion

Competency can be noted when the execution of a task is observed and improves day by day from the teaching-learning process and the subjects' experiences. It is not just acquired knowledge; possessing knowledge and skills does not mean being competent, since it is possible to have knowledge without actually knowing how to apply it. Professional competencies are constructed through learning processes which are influenced by sets

of human capacities: knowledge (information – knowing what and why), skills (techniques, capacity and knowing how) and attitudes (wanting to do, identity and determination); when developed, these dimensions generate individuals' capacity to act competently[11-12].

In the health field, developing competencies implies linking different expertise, so that a practice is constructed, which is based not only on acquiring knowledge but also on incorporating skills and personal attitudes which can, in practice, transform the reality of health, particularly within SUS, and contribute to raising the quality of the population's health. From this perspective, health management is equally important as technical-scientific training[13-14]. Oliveira et al.*13* bring to light the discussion that many health courses are shown to be unrelated to organizing management and a critical debate about the systems which structure healthcare. They also emphasize that educational institutions maintain teaching which is dominated by conservative models directed towards and focusing on technical-scientific mastery of the profession.

Health education is linked to the concept of promoting health and can also be considered a health promotion strategy, aiming to raise individual or collective awareness of the population, contributing towards increasing physical and mental, environmental, personal and social well-being[14]. Health professionals must be qualified to orientate individuals at all levels and at any cycle of life.

A nutritionist is the health professional responsible for education on healthy eating practices. In this context, a professional's actions requires a comparison of new practices with social representations of food and their meanings for subjects in the educational process. The challenge is also in considering health requirements, with an emphasis on society's demands and those of SUS[15-16]. Lecturers are responsible for encouraging students to keep up to date and to apply effective communication, in order to be fully trained in health education; they are then able to competently carry out the duties of a health educator.

Considering the results and reflecting on the need to develop competencies, we believe that profound changes are required, and these should be made progressively. It is highlighted that none of the courses evaluated presented a record of systematically using active methodologies on their curricula as teaching-learning strategies, keeping practice limited to the period of compulsory internships which take place at the end of the course. Therefore, we believe that implementing active methodologies is required, but they are still a challenge for teaching staff who experienced formal methodology in their own training[17].

Article 9 of the nutrition NCGs highlight that the pedagogical project must be "...centred on the student as the subject of learning and supported by the lecturer as a facilitator and mediator of the teaching-learning process"[1]. This indicates the need to rethink professional training, independent of the institution.

Active methodologies cannot be simply applied without clear learning objectives. For Mitre, 11 when the aim is to attain more proactive students, the adoption of increasingly complex activities is required; in other words, activities which involve the students making decisions; these are always followed-up by evaluating the results, and feedback is provided on all of them. Maintaining the curriculum and including active methodologies such as the "flipped classroom", "problematization" and "Team Based Learning – TBL," among others, as teaching-learning strategies, motivate students. When presented with a problem, they seek to address bottlenecks and are therefore responsible for their own development. Focusing on professional practice helps to pressure the educational institutions to rethink their curricula and the evaluation processes used, thereby enabling the reorientation of educational planning based on desirable competencies for their undergraduate students[4].

Theoretically, the construction of competencies is an undefined process which can and should be continuous, on account of the constant changes in the world, with respect to epidemiological, demographic, dietary, nutritional and technological transitions, leading professionals and institutions to tackle new and constant training challenges. Therefore, there cannot be a single method, or just one form of training. This training cannot be understood as solely a "project" which ends with the completion of an undergraduate

course but a central component of the training process[12]. It should be borne in mind that a lecturer's competence cannot be transmitted to the students: it must be actively constructed. The proposed training models are only a reference, in order to develop student competencies: every individual leaves their own personal mark on their learning process when they are an active agent of their training.

Students should consider the constant need to search for knowledge, valuing their time in the classroom and practical experience which is more in line with their own learning and permanent education. Permanent education comes from meeting the curricular guidelines of undergraduate health courses, seeking to train a critical professional who is able to learn to learn, work in a team and is mindful of the social reality, thereby enabling humane and quality care. Permanent education considers everyday work or health training, forming a strategy which enables training that is truly in line with the needs of Brazilian public health[13-18].

There is a consensus in scientific literature that the development of competencies should be assessed; in other words, students' practical performance should be observed, in order to examine the "level of doing." Therefore, the lecturer's outlook is important but, as in other courses, it is extremely difficult for lecturers to follow-up practical activities; in other words, when they are in-service. Therefore, other subjective evaluation methods should be introduced, bearing in mind that feedback is an essential part of educational evaluation[19].

It is important to reflect that attaining a diploma is no guarantee that competencies are fully mastered, since this construction begins on an undergraduate course but they are underpinned during professional activities; they are forged in practice and the experience which everyday activities provides. Understanding the competency development process is in line with the situations, experiences and learning transformed into knowledge and skills which, in turn, are the basis for forming attitudes and constructing the capacity to act.

When considering this proposal, practice in academic life should be emphasized: it favors learning in different environments and often cannot be reproduced in the classroom. Experience provides significant learning.

Educational institutions and course managers need to be aware of changes in teaching scenarios. Since developing competencies is presented as a new perspective for training health professionals, in addition to encouraging critical reflection, it can meet the requirements imposed by scenarios of social change and favor the development of citizenship[20]. In order to meet the current challenges of working with health, reflection is required on training and the profile of competencies desired for health professionals, focusing not only on specialized technical knowledge but, primarily, on the skills and attitudes to be developed for the population's health. There is no "template" or a single "way" of acting: the realities are different; problems are diverse and being technically qualified is important: recognizing health problems in the biological framework, but also knowing how to intervene when considering individual characteristics and food problems in the social, political, environment and cultural context. Thus, it is observed that this new scenario has required newly-qualified nutritionists to be fully aware and to reflect more deeply on their role as health professionals committed to promoting healthy practices and eating habits, with a view to achieving the human right to adequate food and the guarantee of sovereignty, food and nutritional safety in Brazil[6]. Historically, we have been criticized by employers for the inadequate production of workers qualified to meet the demands of the labor market, as if teaching institutions were placing a product in the labor market[18]. Training competent professionals is far removed from what was done mechanically in the recent past; "complete" professionals with the desired profile need to have skills as well as techniques.

A supervised internship can be considered one of the main experiences that academics experience during an undergraduate nutrition course. It is a time which encourages students to develop the general competencies proposed, since it is in this environment, and at different times, that they are required to adopt attitudes of leadership, make decisions about real situations, demonstrate their proactivity and communicate, among other general competencies the National Curricular Guidelines require. In this

learning environment, students need to plan their actions, learn to be flexible with decision-making, work in a team, deal with various situations and learn to tackle the demands of the labor market and its realities[9]. The lecturer's role is extremely relevant. S/he becomes the motivator; someone who leads the students to reflect on their role in society as future professionals and mediates the learning process[21].

For students to be considered qualified for professional activities, the development of general competencies must be guaranteed during their training. It is fundamental that training promotes factors related to specific knowledge of the area, which fosters the development of aspects of everyday work in the classroom, highlighting methodologies and contents[22].

Limited scientific production on competencies when training nutritionists, and a lack of in-depth studies about undergraduate nutrition courses may have limited reflection on the approach undertaken. We consider that this study demonstrates the reality of a percentage of schools belonging to a group with specific characteristics, reflecting the local reality, and it may not correspond to courses in other regions. However, we believe that this study is useful to all of the academic community, and also generates reflection which may assist in altering the current nutrition training scenario, as a way of tackling the challenges of academic training.

Conclusion

It was concluded that the undergraduate nutrition students involved in the research were not developing the general competencies required for their comprehensive training. When considering the different times of the course, the lecturers see students in the final years of the course as more prepared than those in the initial years.

From the lecturers' point of view, the students evaluated develop more health management and health education competencies and skills, while from the students' perspective, there was only a slight emphasis on health education. When comparing the evaluated institutions, one of these, "Institution A", received a better evaluation in developing competencies in the health education dimension.

Nutrition plays a relevant role in maintaining health, preventing diseases, treating and recovering health. Therefore, developing competencies during an undergraduate course must be evaluated, since it may promote discussion and improve these courses.

New studies should be conducted in order to discuss and follow-up the training of undergraduate nutrition students on a state and national level, due to the low number of publications in this particular area.

Author contributions

Ravazzani EDA participated in the project, data collection, analysis and discussion of the results, writing the article. Matia G Participate in the analysis and discussion of the results, writing the article. Rabbit IM participated in the analysis and discussion of the results, writing the article. Esteve RZ participated in the contribution of the project design, analysis and discussion of the results, writing the article.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

References

1. Ministério da Educação (BR). Conselho Nacional de Educação. Diretrizes curriculares para o Curso de Nutrição: Resolução CNE/CES nº 5, de 7 de novembro de 2001.

2. Gupta P, Dewan P, Singh T. Objective structured clinical examination (OSCE) revisited. Indian Pediatrics. 2010;47(11):911-920.

3. Albuquerque VS, Gomes AP, Rezende CHAS, Sampaio MX, Dias OV, Lugarinho RM. A integração ensino-serviço no contexto dos processos de mudança na formação superior dos profissionais da saúde. Rev bras educ med. 2008; 32(3):356-362. doi: 10.1590/1413-812320172210.18102017

4. Aguiar AC, Ribeiro ECO. Conceito e avaliação de habilidades e competência na educação médica: percepções atuais dos especialistas. Rev bras educ med. 2010; 34(3):371–378. doi: 10.1590/S0100-55022010000300006

5. Ricardo EC. Discussão acerca do ensino por competências: problemas e alternativas. Cad Pesqui. 2010;40(140):605-628. doi: 10.1590/S0100-15742010000200015

6. Recine E, Mortoza ASM. Consenso sobre Habilidades e Competências do Nutricionista no ambito da Saúde Coletiva. Brasilia: Observatório de Politicas de Segurança e Nutrição; 2013.

7. Santos WS. Organização curricular baseada em competência na educação médica. Rev bras educ med. 2011;35(1):86-92. doi: 10.1590/S0100-55022011000100012

8. Tanaka OY. Avaliação da atenção básica em saúde: uma nova proposta. Saúde soc. 2011;20(4):927-934. doi: 10.1590/S0104-12902011000400010

9. Benito GAV, Tristão KM, Paula ACSF, Santos MA, Ataide LJ, Lima RCD. Desenvolvimento de competências gerais durante o estágio supervisionado. Rev bras enferm. 2012;65(1):172-178. doi: 10.1590/S0034-71672012000100025

10. Matia G. Desenvolvimento e validação de instrumento para avaliação das competências gerais nos cursos da área da saúde. [dissertação]. Curitiba: Faculdades Pequeno Príncipe; 2015.

11. Mitre SM, Siqueira RB, Girardi JMM, Morais NMP, Meirelles CAB, Pinto CP, et al. Metodologias ativas de ensino-aprendizagem na formação profissional em saúde: debates atuais. Ciênc saúde coletiva. 2008 dec;3(spul 2):2133-2144. doi: 10.1590/S1413-81232008000900018

12. Baille E, Bjarnholt C, Gruber M, Hugles R. A capacity-building conceptual framework for public health nutrition practice. Public Health Hutrition. 2009;12(8):1031-1038. doi: 10.1017/S1368980008003078

13. Oliveira FMCSN, Ferreira EC, Rufino NA, Santos MSS. Educação permanente e qualidade da assistência à saúde: aprendizagem significativa no trabalho da enfermagem. Aquichan. 2011;11(1):48-65.

14. Camelo SHH, Angerami ELS. Competência profissional: A construção de conceitos, estratégias desenvolvidas pelos serviços de saúde e implicações para a enfermagem. Texto Contexto Enferm. 2013;22(2):552-560. doi: 10.1590/S0104-07072013000200034

15. Boog MCF. Atuação do nutricionista em saúde pública na promoção da alimentação saudável. Ciência & Saúde. 2008;1:33–42. doi: 10.15448/1983-652X2008.1.3860

16. Recine E, Gomes RCF, Fagundes AA, Pinheiro ARO, Teixeira BA, Souza JS, et al. A formação em saúde pública nos cursos de graduação de Nutrição no Brasil. Rev Nutr. 2012;25(1);23-33. doi: 10.1590/S1415-52732012000100003

17. Anastasiou LGC. Metodologia ativa, avaliação, metacognição e ignorância perigosa : Elementos para reflexão na docência universitária. Revista espaço para a saúde. 2014 jun;15 (supl 1):18-34.

18. Nideck RLP, Queiroz PP. Perspectivas para o ensino na saúde: do "apagão educacional" à politica de Educação permanente. Trab educ saúde. 2015;13(1):159-180. doi: 10.1590/1981-7746-sip00022

19. Briccia V, Carvalho AMP. Competências e formação de docentes dos anos iniciais para a educação científica. Ens Pesqui Educ Ciênc. 2016;18:1-22. doi: 10.1590/1983-21172016180103

20. Nascimento DDG, Oliveira MAC. Reflexões sobre as competências profissionais para o processo de trabalho nos Núcleos de Apoio à Saúde da Família. O Mundo da Saúde. 2010;34(1):92-96.

21. Finkler M, Verdi MIM, Caetano JC, Ramos FRS. Formação profissional ética: um compromisso a partir das diretrizes curriculares? Trabalho, Educação e Saúde. 2010; 8(3):449-462. doi: 1590/S1981-77462010000300007

22. Bergamo FVM, Ponchio MC, Zambaldi F, Giuliani AC, Spers EE. De prospect a aluno: fatores influenciadores da escolha de uma instituição de ensino superior. BASE: Revista de Administração e Contabilidade da Unisinos. 2010;7(3):182-193.