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Preferences, motivations, professional activities and job satisfaction of nutritionists of the National School Feeding Program of the Federal Schools Network

Preferências, motivações, atividades profissionais e satisfação no trabalho de nutricionistas atuantes no Programa Nacional de Alimentação Escolar da Rede Federal dissertações e teses

Flávia Mendes Peradeles Galdino¹ , Elke Stedefeldt¹ 

¹ Universidade Federal de São Paulo, Escola Paulista de Medicina, Programa de Pós-Graduação em Nutrição. São Paulo, SP, Brasil. Correspondence to: E STEDEFELDT. E-mail: <elke.stedefeldt@unifesp.br>.

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ABSTRACT

Objective

To identify preferences, motivations, and professional activities of nutritionists from the Federal Technical Schools in Brazil regarding their field of work, potentials and weaknesses, and level of job satisfaction. We also aimed to assess the relationship between the performance of professional activities and job satisfaction.

Methods

This is a cross-sectional study, with a quantitative approach and descriptive analysis. The nutritionists completed an online form (Google FORMS[®]) about identification, interpersonal aspects, professional activities, and job satisfaction. Descriptive statistics were reported for all variables. Student's *t*-tests and Mann-Whitney U tests were used to assess differences in satisfaction levels among nutritionists who perform certain professional activities or not, with significance considered at $p < 0.05$.

Results

A total of 195 nutritionists from all Brazilian states, except Acre and Amapá, participated in the study. Out of these 95.1% were female, with over 11 years graduation (43.8%), working in the institution for 1 to 5 years (51.4%), and 99.5% were public servants. Job stability in the public service motivated 70.3% nutritionists to work in the field. The majority stated they were

committed (67.6%) and wished to continue in the job (27.6%). Difficulty in balancing management activities with nutrition education was the main drawback (25.4%). Satisfaction, rated at 3.61 on a scale of 1 to 5, differed significantly ($p < 0.05$) based on the performance of professional activities.

Conclusion

Effective communication among those involved in the National School Feeding Program, increased participation, and autonomy in administrative decisions, along with support for their mandatory activities, can enhance the satisfaction of nutritionists in federal technical schools.

Keywords: Job satisfaction. Nutritionist. School feeding.

RESUMO

Objetivo

Identificar preferências, motivações e atividades profissionais de nutricionistas das Escolas Técnicas Federais no Brasil referentes à área de atuação, potencialidades e fragilidades e nível de satisfação no trabalho. Como também avaliar a relação entre a realização de atividades profissionais específicas e satisfação no trabalho.

Métodos

Trata-se de um estudo transversal, com abordagem quantitativa e análise descritiva. Nutricionistas responderam um formulário online no Google FORMS® sobre identificação, aspectos interpessoais, atividades profissionais e satisfação no trabalho. Estatísticas descritivas foram realizadas para todas as variáveis. Testes t de Student e U de Mann-Whitney foram usados para verificar diferenças nos níveis de satisfação entre nutricionistas que executam ou não certas atividades profissionais, considerando significativo $p < 0,05$.

Resultados

Participaram do estudo 195 nutricionistas de todos os estados brasileiros, exceto Acre e Amapá. 95,1% eram do sexo feminino, com mais de 11 anos de formação (43,8%), atuando na Instituição de 1 a 5 anos (51,4%), e concursados (99,5%). A estabilidade do serviço público motivou 70,3% a trabalharem na área. A maioria declarou-se comprometida (67,6%) e deseja permanecer (27,6%). A dificuldade em conciliar atividades de gestão e educação alimentar e nutricional foi a principal fragilidade (25,4%). A satisfação, avaliada em 3,61 numa escala de 1 a 5, diferiu significativamente ($p < 0,05$) conforme a realização das atividades profissionais.

Conclusão

Uma comunicação efetiva entre os envolvidos no Programa Nacional de Alimentação Escolar, maior participação e autonomia nas decisões administrativas, além de apoio para suas atividades obrigatórias, podem elevar a satisfação dos nutricionistas nas escolas técnicas federais.

Palavras-chave: Satisfação no emprego. Nutricionistas. Alimentação escolar.

INTRODUCTION

The growth of the nutritionist profession has come along with the evolution of the Programa Nacional de Alimentação Escolar (PNAE, National School Feeding Program) in recent years. With this Program, the work of nutritionists has become prominent, as it helps contributing to changes in schoolchildren's eating habits, promotion of healthy eating practices and food and nutritional security. This advancement has also had a significant impact on technical and vocational education institutions, such as the *Institutos Federais de Educação, Ciência e Tecnologia* (IF, Federal Institutes of Education, Science and Technology) and *Centros Federais de Educação Tecnológica* (CEFET, Federal Centers of Technological Education), which have increased retention of these professionals [1,2].

Working in the area of Food and Nutrition in the school setting, the nutritionist assumes technical responsibility for compliance with the PNAE, carrying out activities such as diagnosing and monitoring the nutritional status of schoolchildren; planning, preparing, monitoring and evaluating menus and Food and Nutrition Education initiatives [3]. However, it is necessary to consider the duties and responsibilities of nutritionists in light of how these professionals perceive themselves

in the environment in which they work and their level of satisfaction, since these factors are known to influence outcomes inside and outside the work setting [4,5].

Job satisfaction is of great interest to scholars in different areas, influencing organizations productivity and the lives of workers [4,5]. Job satisfaction is a subjective assessment that workers make about how beneficial or detrimental their work is to their well-being [6,7]. Research indicates that high levels of satisfaction are associated with reduced intentions to quit the job, low absenteeism rates, improved performance, and higher productivity [8,9]. Satisfied workers tend to be more concerned with the quality of their tasks, value the customer, and demonstrate greater commitment to the organization [8]. On the other hand, job dissatisfaction leads to high rates of absenteeism and turnover, as well as weak performance and productivity [10,11]. According to the individual, dissatisfaction can adversely affect mental and physical health, contributing to conditions such as anxiety and burnout [10,11].

Studies with health professionals, such as nurses, physicians [12], physiotherapists and occupational therapists [12,13] highlight that professional recognition and appreciation influence job satisfaction. As for nutritionists, some studies reveal that the majority are satisfied with their work, due to the nature of their activities and the work environment [14-17]. However, others point to low salaries, lack of opportunities for advancement, disrespect from colleagues in other health areas, competition and difficulties in professional advancement as causes of dissatisfaction [14,15,18-20]. It is important to note that these studies focus mainly on the satisfaction of nutritionists in clinical nutrition [16-18,21,22] and in food care for communities [23], not encompassing other areas of activity.

Although the importance of studying satisfaction in the work environment is recognized [8,24,25], most of the research on this topic for environments where nutritionists work is outdated, dating back to 2014 [14,15,19,21,22]. No data were found in the scientific literature on the satisfaction of nutritionists in the food and nutrition field in the school setting, specifically. Considering this gap, studies are needed to reveal nuances of the nutrition practice and satisfaction. Understanding the practices and satisfaction of nutritionists in the school meals sector can help build strategies and redirect the work process, strengthening actions that promote student health and, indirectly, contribute to the advancement of education in the country. The present study aimed to identify nutritionists' preferences, motivations, and professional activities at the Federal Technical Schools in Brazil regarding the area of activity, strengths and weaknesses, and level of job satisfaction. We also intended to evaluate the relationship between the performance of specific professional activities and job satisfaction.

METHODS

This is a cross-sectional study, with a quantitative approach and descriptive analysis, which included nutritionists affiliated with IF and CEFET, federal public schools that offer high school/technical and higher education.

Nutritionists were invited by email messages and through social media (Facebook®, Instagram®, LinkedIn®) and WhatsApp® group to participate in the survey, between March and December 2020; no incentives were offered. The inclusion criteria were: to be a nutritionist; working at an IF or CEFET and agreeing to answer the questionnaire.

Although the search was for the inclusion of all nutritionists working at IF or CEFET, some did not participate and others were not located. In 2020, 279 nutritionists were registered on the

Transparency Portal [26]. Considering a sampling error of 5% and a 95% confidence level, the calculated sample was 162 nutritionists. We actually recruited a total of 195 respondents.

A single online questionnaire was used via Google Forms® with 39 multiple-choice and closed-ended questions on: identification, interpersonal aspects and performance of professional activities, in addition to questions on job satisfaction. The questions were divided into two blocks: Identification and professional activities; and job satisfaction.

Identification and professional activities

This block included the following questions: identification, academic background, employment relationship, professional activities, interpersonal strengths and weaknesses as nutritionists in the food and nutrition field in the school setting, and area of expertise selected. The questions about professional activities consisted of 26 dichotomous questions about the performance of mandatory and complementary activities described in Resolution of the Federal Council of Nutritionists (CFN) No. 465/2010 [3]. A complete list of activities is shown in Table 1.

Table 1 – Performance or not of mandatory activities (n° 1 to 17) and complementary activities (n° 18 to 26) described in CFN Resolution n° 465/2010 by nutritionists linked to the Federal Technical Schools of Brazil, 2020.

Mandatory activities (no. 1 to 17) and complementary activities (no. 18 to 26)	Performs	
	Yes (%)	No (%)
(1) Perform the diagnosis and monitoring of nutritional status, calculating the nutritional parameters for serving the clientele based on the result of the nutritional assessment, and in accordance with the parameters defined in the regulations of the National Fund for the Development of Education	39.5	60.5
(2) Encourage the identification of individuals with specific nutritional needs, so that they receive appropriate care	65.4	34.6
(3) Plan, prepare, monitor and evaluate the school food menu, based on the nutritional diagnosis and nutritional references	37.8	62.2
(4) Prepare the menu in accordance with the age groups and epidemiological profiles of the populations served, to define the quantity and quality of the food	36.2	63.8
(5) Prepare the menu with respect to the eating habits and food culture of each location, its agricultural vocation and healthy and adequate nutrition	56.2	43.8
(6) Prepare the menu using products from Family Farming and Rural Family Entrepreneurs, prioritizing, whenever possible, organic and/or agroecological foods; local, regional, territorial, state, or national, in this order of priority	45.4	54.6
(7) Propose and carry out food and nutrition education actions for the school community, including promoting ecological and environmental awareness, working with the school's management and pedagogical coordination to plan activities with food and nutrition content	61.6	38.4
(8) Prepare technical sheets for the preparations that make up the menu	29.7	70.3
(9) Plan, guide and supervise the activities of selection, purchase, storage, production and distribution of food, ensuring the quantity, quality and conservation of products, always observing good hygiene and sanitary practices	52.4	47.6
(10) Plan, coordinate and supervise the application of acceptability tests with customers whenever a new food item or any other innovative changes are introduced to the menu	30.8	69.2
(11) Submit the Annual Management Report of the School Feeding Program	13.0	87.0
(12) Interact with family farmers and rural family entrepreneurs and their organizations, in order to learn about local production and include these products in school meals	43.8	56.2
(13) Participate in the bidding process and direct purchase from family farming for the acquisition of foodstuffs, with regard to the technical part (specifications, quantities, among others)	47.6	52.4
(14) Guide and supervise the cleaning activities of environments, food storage, food transport vehicles, equipment and utensils of the institution	51.9	48.1
(15) Develop and implement the Good Practices Manual for Manufacturing and Control Food Services for Food and Nutrition Units	41.6	58.4
(16) Prepare the Annual Work Plan for the School Feeding Program, including the procedures adopted for the development of the assignments	15.7	84.3
(17) Advise the School Feeding Council regarding the technical implementation of the PNAE	5.9	94.1
(18) Coordinate, supervise and execute ongoing education actions in food and nutrition for the school community	48.1	51.9
(19) Participate in the technical evaluation process of food suppliers, in order to issue a technical opinion, with the aim of establishing qualitative criteria for their participation in the food acquisition process	29.2	70.8
(20) Participate in the technical evaluation in the process of acquiring utensils and equipment, cleaning and disinfection products, as well as in the hiring of service providers that directly interfere in the execution of the School Feeding Program	37.8	62.2

Table 1 – Performance or not of mandatory activities (n° 1 to 17) and complementary activities (n° 18 to 26) described in CFN Resolution n° 465/2010 by nutritionists linked to the Federal Technical Schools of Brazil, 2020.

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Mandatory activities (no. 1 to 17) and complementary activities (no. 18 to 26)	Performs	
	Yes (%)	No (%)
(21) Participate in the recruitment, selection and training of personnel who work directly in the implementation of the School Feeding Program	18.4	81.6
(22) Participate in multidisciplinary teams designed to plan, implement, implement, control and execute policies, programs, courses, research and events in the area of school meals	53.5	46.5
(23) Contribute to the preparation and review of regulatory standards specific to the area of food and nutrition;	49.7	50.3
(24) Collaborate in the training of professionals in the area of food and nutrition, supervising interns and participating in improvement, qualification and training programs	37.8	62.2
(25) Communicate with legal guardians and, if necessary, the competent authority, when there are conditions in the School Feeding Program that prevent good professional practice or that are harmful to the health and life of the community	35.1	64.9
(26) Train and coordinate the actions of the supervisory teams of the implementing entity's units related to the School Feeding Program	15.1	84.9

The block of questions concerning identification was used exclusively to characterize the sample based on observable criteria; therefore, a basic validation process was carried out, focused on ensuring adequate understanding of the questions. A pilot test was applied with 10 nutritionists from IF and CEFET, selected by convenience, who considered the questionnaire easy to understand and did not suggest any changes.

Job satisfaction

The S20/23 questionnaire [24], a self-report instrument to assess job satisfaction, was used. Composed of 20 items, participants responded on a five-point Likert-type scale (from 1 = *completely dissatisfied* to 5 = *completely satisfied*). The items were grouped into three dimensions: satisfaction with hierarchical relationships (SHR), satisfaction with the physical job environment (SPJE), and intrinsic job satisfaction (IJS). Previous studies have indicated the psychometric adequacy of this instrument, with good internal structure and in relation to other variables [24]. In this study, the validity of the instrument was briefly investigated; it showed adequate levels of internal consistency using McDonald's Omega (0.87 to 0.95) and correlations in line with the literature.

Data analysis

Frequency analyses were performed to understand the sample composition and verify preferences, motivations, and professional activities. For the continuous job satisfaction variables, mean and standard deviation descriptive analyses were performed on items and factors, with an internal consistency analysis using McDonald's Omega. Then, the means were compared to investigate associations between the performance of professional activities and job satisfaction. The assumptions for the Student's *t*-test were verified using the Shapiro-Wilk and Levene tests. For data with normal distribution and equality of variances between groups, the Student's *t*-test was used and the effect size was calculated with Cohen's *d*. If the assumptions were violated, the Mann-Whitney U test was used and the effect size was estimated with rank biserial correlation. The means of job satisfaction were compared between groups of nutritionists who did or did not perform each of the 26 activities, with separate comparisons for each activity. Significant associations were expected between satisfaction and performance of specific tasks, considering significant results when $p < 0.05$. Cohen's *d* effect size was interpreted according to the following criteria: values less than 0.20 as very small, 0.20 to 0.49 as small, 0.50 to 0.79 as medium, 0.80 to 1.19 as large and

greater than 1.20 as very large [27,28]. All analyses were conducted using R version 4.0.1 [29] and R studio version 1.3.959 [30] software.

The survey was approved by the Research Ethics Committee of UNIFESP and Co-participating Centers, under Opinion No. 0104/2019. All participants signed an Informed Consent Form.

RESULTS

A total of 195 nutritionists from all Brazilian states participated in the study, with the exception of nutritionists from the states of Acre and Amapá due to lack of feedback from professionals in this region. The majority was female (95.1%; n=185). Regarding education, the majority had graduated more than 11 years before (43.8%; n=85), while 42.2% (n=82) graduated 6 years to 10 years and 11 months before and 14.1% n=27 had graduated one year to 5 years and 11 months before. The length of service at the institution ranged from 1 year to 5 years and 11 months (51.4%; n=100), followed by 6 years to 10 years and 11 months (28.6%; n=55), more than 11 years (10.3%; n=20) and up to 11 months (9.7%; n=19). Regarding employment relationships, the majority were civil servants (99.5%; n=194).

Data on nutritionists' preferences and motivations can be seen in Table 2. Stability in the public service is the main reason for working in the area of feeding and nutrition in schools (70.3%; n=130). Approximately 27.6% (n=51) wished to continue in the same area or move into teaching, research or extension, while 16.8% (n=31) mentioned an interest in clinical nutrition. The main weakness in the school feeding area is the difficulty in reconciling the activities of managing meal production with food and nutrition education (25.4%; n=47), followed by the lack of support in implementing the National School Feeding Program (24.9%; n=46). The main interpersonal strengths highlighted were commitment, knowledge and dedication (67.6%; n=125).

Table 2 – Preferences and motivations regarding the area of activity; interpersonal strengths and weaknesses reported by nutritionists linked to the Federal Technical Schools in Brazil, 2020.

	n	%
1 of 2		
Preferences and motivations regarding the area of activity; interpersonal strengths and weaknesses		
Main motivation for choosing to work in the school meals sector		
Stability provided by the public service	130	70.3
Affinity with this area of activity	52	28.1
Lack of options in the job market	3	16.0
Area in which I would work if I had the opportunity to choose		
I would continue in the same area of activity	51	27.6
Nutrition in teaching, research and extension	51	27.6
Clinical nutrition	31	16.8
Nutrition in Public Health	24	13.0
I would give up nutrition	11	5.9
Sports nutrition	9	4.9
Collective feeding	8	4.3
Main weakness as a nutritionist in the school food segment		
Difficulty in reconciling activities related to the management of meal production and those related to food and nutritional education	47	25.4
Lack of support in the implementation of the PNAE	46	24.9
Lack of autonomy regarding performance in general	26	14.1
Difficulty with people management	23	12.4
Psychological factors such as: stress, anxiety and lack of concentration	18	9.7
I believe that I have no weaknesses in the area of school meals	10	5.4

Table 2 – Preferences and motivations regarding the area of activity; interpersonal strengths and weaknesses reported by nutritionists linked to the Federal Technical Schools in Brazil, 2020.

	n	%
2 of 2		
Preferences and motivations regarding the area of activity; interpersonal strengths and weaknesses		
Main weakness as a nutritionist in the school food segment		
Lack of identification with the area (school meals)	7	3.8
Lack of studies	4	2.2
Lack of organization and focus in the professional area	2	1.1
I don't work in school meals	2	1.1
Main interpersonal potential as a nutritionist in the school food segment		
Commitment, knowledge, dedication	125	67.6
Promotion of food and nutritional education at school	24	13.0
Experience in the field	18	9.7
Know the preferences and needs of the target audience	15	8.1
I don't work in the school meals sector	2	1.1
I have no potential because I don't identify myself with the area	1	0.5

Regarding restaurants for students, 39.5% (n=77) of the campuses where nutritionists work do not have a student restaurant. Of the campuses that do have a restaurant, 90.3% (n=105) receive funds from the PNAE. The majority of nutritionists (82.2%; n=160) stated that they work under the PNAE guidelines.

With regard to the 26 mandatory and complementary technical activities described in CFN Resolution No. 465/2010, which establishes the responsibilities of nutritionists within the scope of the Programa de Alimentação Escolar (PAE, School Feeding Program), it was observed that the majority of nutritionists perform only five (29.4%; n=57) of the seventeen mandatory activities and one (11.1%; n=21) complementary activity out of the eight, in the aforementioned resolution (Table 1).

Table 3 presents a descriptive analysis of the items, by factor and overall, of the S20/23 questionnaire in relation to job satisfaction. The results indicate that the highest average satisfaction was in the SHR dimension, followed by IJS and SPJE. Although the S20/23 questionnaire does not have a defined cutoff point to determine job satisfaction or dissatisfaction, the averages ranged between three and four, suggesting levels of indifference with regard to satisfaction.

Table 3 – Mean, standard deviation and McDonald's Omega of the S20/23 questionnaire applied to nutritionists affiliated with Federal Technical Schools in Brazil, 2020.

	Mean	SD	McDonald's Omega
1 of 2			
S20/23 Issues			
Factor 1 - SHR	3.65	0.91	0.95
20 How negotiations regarding the hiring of benefits are processed	3.46	1.07	
19 How legal standards and collective agreements are complied with	3.47	1.17	
18 Opportunities to participate in decisions in the work area	3.82	1.26	
17 Participation in decisions within the organization or in your area of work	3.75	1.09	
16 Possibility of making autonomous decisions about one's own work	3.70	1.17	
15 Support received from higher authorities	3.59	1.22	
14 Equal treatment and sense of justice	3.61	1.15	
13 How they evaluate and judge your work	3.63	1.14	
12 Frequency of supervision	3.60	0.93	
11 Supervision over the work you perform	3.82	1.06	
10 Personal relationships with authorities	3.70	1.19	
Factor 2 - SPJE	3.53	1.11	0.91
9 Air conditioning of the workplace	3.42	1.38	
8 Workplace ventilation	3.50	1.37	
7 Workplace lighting	3.82	1.29	
6 Environment and physical space of the workplace	3.30	1.30	
5 Hygiene and health in the workplace	3.62	1.17	

Table 3 – Mean, standard deviation and McDonald's Omega of the S20/23 questionnaire applied to nutritionists affiliated with Federal Technical Schools in Brazil, 2020.

S20/23 Issues	Mean	SD	McDonald's Omega
Factor 3 - IJS	3.61	0.92	0.87
4 Objectives and goals you must achieve	3.50	1.09	
3 Opportunities that work offers to do things you enjoy	3.62	1.12	
2 Opportunities that work offers to do things that you excel at	3.56	1.12	
1 Work as a facilitator of fulfillment	3.77	1.05	
Overall Satisfaction	3.61	0.84	0.95

Note: SD: Standard Deviation.

Table 4 compares job satisfaction levels between groups that do or do not perform specific professional activities. The results suggest that performing these activities can affect satisfaction, varying according to the nature of the tasks. In cases where the results were significant ($p < 0.05$), nutritionists who perform the activities showed greater satisfaction. Intrinsic satisfaction appears to be especially influenced by performing tasks related to the PNAE, such as planning, preparing, monitoring and evaluating school menus, food and nutrition education actions, coordinating acceptability tests, developing good practice manuals, participating in multidisciplinary teams, contributing to the training of professionals and reporting irregularities to the appropriate agencies.

Table 4 – Comparison of averages in job satisfaction (S20/23) between nutritionists linked to the Federal Technical Schools who perform or do not perform the professional activities listed in CFN Resolution No. 465/2010. Brazil, 2020.

Satisfaction with Hierarchical Relationships							
Activities	Group	n	M	DP	t (df=183)	p	d
1- Advise the School Feeding Council (CAE) regarding the technical implementation of the PNAE	Performs	11	4.62	0.91	1314.00	0.038	0.373
	Does not perform	174	3.98	1.00			
24- Collaborate in the training of professionals in the area of food and nutrition, supervising interns and participating in improvement, qualification and training programs	Performs	70	4.26	0.93	2.69	0.008	0.407
	Does not perform	115	3.86	1.02			
Satisfaction with Physical Work Environment							
Activities	Group	n	M	DP	t (df=183)	p	d
17 - Advise the School Feeding Council (CAE) regarding the technical implementation of the PNAE	Performs	11	4.33	0.66	1382.00	0.014	0.444
	Does not perform	174	3.48	1.12			
23 - Contribute to the development and review of regulatory standards specific to the area of food and nutrition	Performs	92	3.71	1.08	2.18	0.031	0.320
	Does not perform	93	3.36	1.13			
Intrinsic Job Satisfaction							
Activities	Group	n	M	DP	t (df=183)	p	d
3- Plan, prepare, monitor and evaluate the school food menu, based on the nutritional diagnosis and nutritional references	Performs	70	3.83	0.84	2.47	0.015	0.374
	Does not perform	115	3.49	0.95			
7 - Propose and carry out food and nutrition education actions for the school community, including promoting ecological and environmental awareness, working with the school's management and pedagogical coordination to plan activities with food and nutrition content	Performs	114	3.72	0.89	1.99	0.048	0.301
	Does not perform	71	3.44	0.95			
10 - Plan, coordinate and supervise the application of acceptability tests with customers whenever a new food or any other innovative changes are introduced to the menu	Performs	57	3.84	0.95	2.23	0.027	0.355
	Does not perform	128	3.51	0.90			
15 - Develop and implement the Good Practices Manual for Manufacturing and Control Food Services for Food and Nutrition Units	Performs	77	3.79	0.85	2.17	0.032	0.323
	Does not perform	108	3.49	0.96			
22 - Participate in multidisciplinary teams designed to plan, implement, control and execute policies, programs, courses, research and events in the area of school meals	Performs	99	3.74	0.89	2.02	0.045	0.297
	Does not perform	86	3.47				
24 - Collaborate in the training of professionals in the area of food and nutrition, supervising interns and participating in improvement, qualification and training programs	Performs	70	3.83	0.81	2.51	0.013	0.381
	Does not perform	115	3.48	0.97			
25 - Notify legal guardians and, if necessary, the competent authority, when there are conditions in the PAE that prevent good professional practice or that are harmful to the health and life of the community	Performs	65	3.82	0.91	2.26	0.025	0.348
	Does not perform	120	3.50	0.91			

Table 4 – Comparison of averages in job satisfaction (S20/23) between nutritionists linked to the Federal Technical Schools who perform or do not perform the professional activities listed in CFN Resolution No. 465/2010. Brazil, 2020.

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Satisfaction with Hierarchical Relationships																											
Overall Satisfaction																											
Activities	Group	n	M	DP	t (df=183)	p	d																				
17 - Advise the School Feeding Council (CAE) regarding the technical implementation of the PNAE	Performs	11	4.20	0.81	1365.50	0.018	0.018																				
	Does not perform	174	3.58	0.83				24 - Collaborate in the training of professionals in the area of food and nutrition, supervising interns and participating in improvement, qualification and training programs	Performs	70	3.79	0.78	2.32	0.022	0.351	Does not perform	115	3.50	0.86	25 - Notify legal guardians and, if necessary, the competent authority, when there are conditions in the PNAE that prevent good professional practice or that are harmful to the health and life of the community	Performs	65	3.80	0.85	2.22	0.027	0.342
24 - Collaborate in the training of professionals in the area of food and nutrition, supervising interns and participating in improvement, qualification and training programs	Performs	70	3.79	0.78	2.32	0.022	0.351																				
	Does not perform	115	3.50	0.86				25 - Notify legal guardians and, if necessary, the competent authority, when there are conditions in the PNAE that prevent good professional practice or that are harmful to the health and life of the community	Performs	65	3.80	0.85	2.22	0.027	0.342	Does not perform	120	3.51	0.82								
25 - Notify legal guardians and, if necessary, the competent authority, when there are conditions in the PNAE that prevent good professional practice or that are harmful to the health and life of the community	Performs	65	3.80	0.85	2.22	0.027	0.342																				
	Does not perform	120	3.51	0.82																							

Note: Non-significant results were omitted from the Table. M: Mean; SD: Standard Deviation; df: Degrees of freedom. a = Cases in which Levene's test was significant ($p < 0.05$), suggesting violation of the assumption of equality of variances between groups or in which the Shapiro-Wilk test indicated non-normality of the data. In these cases, the Mann-Whitney U test was performed instead of the Student's t test. In these cases, the "t" column corresponds to the Mann-Whitney statistic and the "d" column corresponds to the rank biserial correlation effect size.

The activity of providing advice to the *Conselho de Alimentação Escolar* (CAE, School Food Council) is related to satisfaction with hierarchical relationships, the physical environment and overall job satisfaction. Likewise, contributing to the development and review of regulatory standards in the food and nutrition area is associated with satisfaction with hierarchical relationships. Collaborating in the training of professionals, supervising internships and participating in improvement programs are related to satisfaction in the work environment. Overall satisfaction is linked to the activities of training professionals and reporting irregularities in the PAE.

DISCUSSION

This study fills a significant gap in research on nutritionists' job satisfaction, particularly in the area of school feeding in the federal school network in Brazil, a topic not explored in previous studies [15-23]. Considering the impact of job satisfaction on institutional and external outcomes [8, 24-25], this research stands out for its approach focused on identifying the preferences, motivations, professional activities and level of job satisfaction of nutritionists linked to IF and CEFET. The results reveal that most participants express the desire to continue working in the area of school feeding and demonstrate, for the most part, satisfaction with their jobs. However, areas of weakness that require interventions were also identified, especially regarding the physical work environment, professional autonomy, effective communication and support for specific nutrition activities. These findings highlight the importance of approaches that promote the well-being and satisfaction of the professionals in this area so crucial for the health and development of students.

The results highlighted the stability provided by the public service as the main motivator for working in the area of school food and nutrition. As observed in previous studies, a permanent link with institutions can be beneficial, facilitating continuous and permanent actions by nutritionists [1]. Most participants expressed a desire to continue in the same area, including teaching, research and extension activities, suggesting satisfaction with the profession and area of activity. Furthermore, many highlighted commitment, knowledge and dedication as their main qualities, reflecting a positive perception of their professional performance, despite the weaknesses mentioned.

The main weakness cited by nutritionists was the difficulty in balancing the management of meal production with food and nutrition education, and second, the lack of support in implementing the PNAE. Given the complexity of the nutritionist's work in the PNAE, it is important to highlight

their connection with other areas, especially Education, since they are professionals inserted in the school environment; and Administration, since the professional often performs predominantly administrative functions, assuming a managerial or supervisory role [2]. Nutritionists should actively participate in discussions with school staff to highlight the importance of the PNAE [31], contributing to the recognition of its limits and possibilities as an educational instrument in nutrition. The lack of support in implementing the PNAE is a problem discussed in the literature, with nutritionists facing difficulties with managers who underestimate the program and have little knowledge about the nutritionists' work, resulting in a lack of autonomy and administrative support [2,32].

Regarding the mandatory activities for nutritionists, set forth in CFN Resolution No. 465/2010, it was observed that many activities are not performed, possibly due to the lack of student cafeterias in 39.5% of the campuses where these professionals work. Other potential reasons include task overload, particularly bureaucratic and administrative tasks, mentioned by 50.3% (n=98) of the participants, and lack of support from managers. These results are in line with previous studies that also highlight task overload and lack of support from managers [33-35]. Taking on extra activities beyond those provided for in the PNAE can jeopardize the effectiveness of specific actions in the area of nutrition, inadequately splitting the time and available resources. This overload can directly affect other essential activities, such as nutritional assessment, acceptability tests, and food and nutrition education, which require material resources and support from other professionals, and may be neglected due to the lack of support. Although this study did not assess the adequacy of the number of nutritionists in relation to the number of students, according to the parameters of CFN Resolution No. 465/2010, this shortage is a likely reason for the failure to fulfill all the duties expected of the professional. The literature frequently highlights the lack of nutritionists in Brazilian schools to comply with the PNAE regulations, which include specific duties and numerical parameters, evidencing serious problems in the dimensioning of human resources [33-35].

The nutritionists in this study demonstrated indifference regarding job satisfaction, with an average of 3.61 in overall satisfaction. Scores ranged from 3 to 4 in all dimensions. Previous studies with nutritionists from other segments demonstrated that 63 to 78% of them expressed overall satisfaction with their work [21-23]. Nutritionists showed greater satisfaction with SRH, followed by SIT and SAFT. This suggests that nutritionists are less satisfied with aspects such as: comfort, cleanliness, hygiene and ventilation of the environment in which they work than with work as a factor of achievement and with hierarchical relationships. The result is consistent with the literature, which often highlights the precarious infrastructure of student restaurants in Brazilian public schools [36-38]. Herzberg et al. [39] indicated that aspects of the work environment, including hygienic factors, can have a strong impact on job satisfaction. Furthermore, the results suggest that there are differences in the reasons for dissatisfaction between nutritionists in the school segment and those in other sectors, who generally express dissatisfaction related to promotions, opportunities for professional growth and low salaries [14-15,19,22]. These findings indicate that investing in the infrastructure and hygiene of the work environment could reduce the dissatisfaction of the nutritionists working in IF and CEFET.

The results showed significant differences ($p < 0.05$) in job satisfaction between groups with different professional activities, indicating that performing or not performing certain activities can affect satisfaction. Specifically in relation to intrinsic job satisfaction, an association was observed with typical and mandatory activities of the nutritionist, such as: planning school meal menus, nutritional diagnosis, food and nutrition education actions, among others. Performing these specific activities in the nutritional area positively influences intrinsic satisfaction, related to doing what one

likes and achieving goals. These findings are consistent with previous studies that indicate that the further away from classic assignments the work activities are, the lower the satisfaction, and that motivation is linked to the opportunity to use own skills [5,23,40].

The activity of advising the CAE is positively associated with satisfaction in hierarchical relationships, work environment, and overall satisfaction. The CAE is a collegiate body with a supervisory, permanent, deliberative, and advisory function, established within the scope of the States, the Federal District, and the Municipalities [41]. Although FNDE Resolution No. 6/2020 [42] does not require the presence of the CAE in the federal network, it is important to highlight that some institutions have chosen to implement it. This inclusion emphasizes the relevance of the CAE or similar structures in promoting the quality of school meals and in ensuring the participation of the school community in the management of this process. The difference in satisfaction levels in places that have a CAE can be attributed to the greater support provided to nutritionists who perform this activity, including access to communication channels with managers and the academic community. Given these results, it is suggested that the implementation of this council be encouraged in the federal network.

Other activities highlight the importance of improving communication between nutritionists and the different stakeholders involved in the PNAE, including their contribution to the regulatory standards, training professionals in the field, and communicating issues related to professional practice or public health. Such associations enhance the importance of a communication channel that practices a welcoming listening approach, allowing professionals to have the power of choice, autonomy, and discussion in decisions about nutrition and school meals. This approach can promote the exchange of experiences, acceptance, and updating of information, increasing motivation and job satisfaction.

Despite the relevant contributions of this study, some limitations should be considered. The sample was restricted to nutritionists from the Federal Technical Schools, limiting the generalization of the results to other spheres, such as municipal and state. The job satisfaction assessment instrument did not include a clear cutoff point to classify satisfaction, and was assessed qualitatively. Furthermore, the survey took place during the COVID-19 (Coronavirus Disease 2019) pandemic, which may have influenced the results. To mitigate these limitations, it is recommended to: expand the sample to include nutritionists from other educational institutions and improve the job satisfaction assessment instrument with a clear cutoff point. It is essential to consider the context of the COVID-19 pandemic in future studies, investigating its effects and including relevant control variables, with pre- and post-pandemic comparisons.

CONCLUSION

This is a pioneering study in the investigation of particularities among nutritionists working in school meals at the federal level in Brazil, outlining their preferences, motivations, professional activities and job satisfaction. Nutritionists expressed the desire to continue working in the area of school meals; they stated that they were dedicated and committed, and that they were motivated by their job stability in the public service.

However, many of the nutritionists' mandatory activities outlined in CFN Resolution No. 465/2010 are not performed, evidencing an overload of tasks, especially administrative and bureaucratic ones, and the lack of support from managers, that they highlighted as weaknesses. The proper performance of professional activities impacts job satisfaction, highlighting the importance

of effective communication among those involved in the PNAE, including greater participation of nutritionists in management decisions and the expansion of CAE to the federal network.

The need to develop job satisfaction indicators is highlighted for a comprehensive understanding of the category reality, suggesting further research with nutritionists from different areas and longitudinal studies to investigate their impact throughout their career.

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CONTRIBUTORS

Conceptualization: FMP GALDINO and E STEDEFELDT. Methodology: FMP GALDINO and E STEDEFELDT. Writing-original draft: FMP GALDINO and E STEDEFELDT. Writing-review and editing: FMP GALDINO and E STEDEFELDT.