Research Article

Effect of Knowledge and Food Culture on Food Choices in Nutrition Students

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Abstract

The diet of university students is a key element for their future quality of life and their performance as professionals, especially in the area of health and nutrition, therefore, whether the knowledge acquired during the career in nutrition students has an impact on the selection of their foods is an aspect of relevance in this undergraduate.

Objective: To evaluate whether the knowledge acquired by these students of the University of Antioquia favors their criteria for the selection of healthy foods.

Methods: Longitudinal study, conducted in 318 nutrition students, thecollection of information on food consumption was done through a virtual questionnaire of simple food frequency.

Results: Food consumption: food high in fat increased from 15 people (5%) to 44 (14%); high in sodium, showed daily, weekly and biweekly decreases; high in sugar is decreased its inclusion daily, weekly, biweekly and occasional; High in protein It is observed that 36 students already include this food on a more daily basis; High in unsaturated fats, lowered its daily, weekly and biweekly consumption, but increased the occasional and never; rich in fiber and vitamins, their intake was decreased daily and weekly; Finally, for food sources and high in carbohydrates, consumption was increased daily (from 127 students to 145), occasionally (13 to 38) and never went from 3 individuals to 16.

Conclusion: Students of nutrition and dietetics, despite having the knowledge related to healthy eating and considering it indispensable for life, do not practice it correctly.

Keywords: Food Culture; Nutrition; Diet

Introduction

According to Barriguete J, [1] healthy eating habits are understood as "the set of behaviors acquired by an individual, by the repetition of acts regarding the selection, preparation and consumption of food. Eating habits are mainly related to the social, economic and cultural characteristics of a given population or region", these are acquired at an early age and are generally influenced by the family, social and cultural context [2].

Good eating habits are important if you want to have a healthy life. At present in general in the world, eating habits are inadequate, becoming a risk factor for Chronic Noncommunicable Diseases (CNCD), in addition, it is likely that the population with less food education and with the entrance to the university present unfavourable changes in habits acquired from the family context [3].

Therefore, we agree with the contribution given by Torres – Mallma., *et al.* when mentioning in their publication: "the implementation of nutrition education programs at the national level and in universities is required, since food education is a first-level prevention strategy for CNCDs" [3].

In addition, youth is acritical period in which healthy lifestyles are acquired or not, and it is precisely at this stage where the children are located, with a new role that can lead them to important changes, which will have a positive or negative impact on their lifestyle, making them in a nutritionally vulnerable population group, since eating habits and lifestyles that are modified during youth in most cases, are maintained in adulthood with the following effect on health [4,5].

Despite all the beneficial effects that physical activity and good eating habits bring, in young people and especially children, these practices are incorrect. According to Díaz-Muñoz, several studies in Colombia have indicated that university students have a low level of physical activity and inadequate eating habits, estimating that between 56 and 78% have low levels of physical activity and the consumption of vegetables and fruits is improper, compared to a high consumption of sweets and sweets [6].

According to Rizo., *et al.* "It is important to consider that there are degrees in which students must not only prepare to use the knowledge acquired in their professional life, but also that this knowledge can be used for their own benefit, among this knowledge are food and lifestyles in university health sciences" [5,7]. Therefore, this study aimed to evaluate whether the knowledge acquired by students of nutrition and dietetics at the University of Antioquia is a component that favors their criteria for food selection.

Materials and Methods

E longitudinal study, with stratified sampling by semester; with a sample size of 318 students enrolled between the second and eighth semester, of the Nutrition and Ethics program of the University of Antioquia. The inclusion criteria were: students enrolled between 2017 and 2019, who will wish to participate in the study, aged between 18 and 30 years, only women and without any pathology; The following exclusion criteria were: not being pregnant or breastfeeding, nor being vegetarian or extreme athletes.

Information on food consumption was collected using a simple virtual questionnaire. Once the information was collected, the database was filtered to discard those that did not comply with the correct entry of the information and subsequently statistical processing of the information was applied in the SPSS v.26 software, developing statistical techniques such as descriptive analysis for take 1 and take 2, of the sociodemographic factors and food intake, in addition, validation of the null hypothesis of equality of means between the two shots with the Chi-square test and the hypothesis of homogeneity in the two shots with the F-Fisher test was carried out.

The Reliability Coefficient was also applied: Cronbach's alpha: this coefficient indicates that the document used to take the information was viable and reliable. Cronbach's alpha coefficient is a model of internal consistency, based on the average of the correlations between items. It takes values between 0 and 1. The closer you get to number 1, the greater the reliability of the underlying instrument. For this format, the scale of the questions was calculated with the variance of the items with a value of 0.823 that would be within the limit of 0.81 to 1.0, which indicates that there was a very high internal consistency of the results of the items to measure the construct [8,9].

Results

The average age of the students was: 20 years in the first data collection and 22 years in the second collection, common and majority ages in university students from Colombia and the department of Antioquia [5,6]. For the marital status and the socioeconomic stratum, it is clarified that only these two questions were investigated in the first shot, and the following information was obtained, 96% of the students are single, a normal state for the age of this population, most of the participants belonged to the middle socioeconomic stratum (56%) and at the low 41%, an equivalent result for a public university. See table 1.

Age	Take 1	Take 2
Mean	20	22
Median	20	21
Moda	20	20
Range minimum	17	18
Range maximum	29	31
Sample	318	318
Typical error	0.141	0.142
Standard deviation	2.52	2.53
Curtosis	0.912	1,167
Take 1	No	%
Civil status		
Single	306	96
Married	12	4
Free union	0	0
Stratum		
High	11	3
Medium	177	56
Stratum	130	41
Total	318	100

Table 1: Characterization of the study participant population.

To report food consumption, it was necessary to group them into 9 categories. See Table 2.

Group	Foods
1	High-fat foods (cheeses, deli meats, high-fat meats, butter, bacon, coconut, palm oil and vegetable mixes, sauces, chocolates, fried products, fast foods).
2	Foods high in sugar (alcoholic beverages, sodas or sugary soft drinks, panela water, sugars and sweets, chocolates)
3	Foods high in sodium (sauces, canned, salted preserves and snacks)
4	Animal protein source foods (egg, lean meats, whole and low-fat cheese, full-fat dairy, skinless chicken, fish)
5	Food sources of vegetable protein (Legumes and vegetable mixtures)
6	Foods rich in unsaturated fats (Avocado, canola oils, olive soybean oils, sunflower, soft margarines, nuts and seeds)
7	Foods high in fiber and vitamins (fruits, vegetables, legumes, whole grains)
8	Foods sources and high in carbohydrates (refined cereals, bananas and tubers)
9	Energy drinks

Table 2: Grouping of foods reported in the simple frequency form.

In high-fat foods, a positive change was observed in their daily, weekly and biweekly intake, however, in occasional consumption there was an increase from 15 people (5%) to 44 (14%), these changes are significant, since the hypothesis test indicates a value of P: 0.0000.

In the group of foods high in sodium, a decrease in their daily, weekly and biweekly inclusion is also reported and the reports are kept occasionally and never, with a P value of 0.0037, which means that many students have decreased the frequency in the consumption of these foods, an aspect favoring their health.

In the consumption of foods high in sugar there is a decrease between the first and second intake, in the daily, weekly, biweekly and occasional reports, but in the report never shows an increase of 9% that is to say 29 students who did not include these foods in their daily eating pattern, begin to consume it, showing statistically significant difference (P value: 0.0020) between take 1 and 2; It is necessary to clarify that in this study the size of the portion was not taken into account, therefore we can not indicate if the consumption is high, adequate or high, the only thing that can be inferred is that 29 students are already including this food group.

With the intake of high protein foods are observed telling changes in the weekly report and never, passing the first from 21 to 57 students who already include this food more daily in their eating pattern and never from 0 to 45 people who no longer include it, with a P value of 0.0000, in contrast to the food sources of vegetable protein where it is observed that their daily consumption decreased, but increased the weekly, biweekly, occasional and never, however, there is no statistically significant difference between intake 1 and intake 2, with a P of 0.9463, this result is an indication that there was a change in the type of protein consumed, A possibly unfavorable change nutritionally, since it is not possible to indicate if the transition from animal to vegetable protein consumption is adequate and if it is being well managed by the students, due to the limitation of this study, which as already mentioned, did not take into account the size of the portions and the type of vegetable protein included.

In the consumption of foods high in unsaturated fats, a low consumption was observed, daily, weekly and biweekly, but increased occasionally and never, showing a P value of 0.0000, this result may indicate that more students are including these foods in their eating pattern or those who stopped consuming it more frequently, they already do it occasionally.

With regard to the consumption of foods rich in fibre and vitamins, there was a decrease in these foods on a daily and weekly basis between the first and second intake, but the frequency increased fortnightly, occasionally and never, from 28 students who consumed fortnightly to 33; from 10 who included it occasionally to 19 and from zero students who did not consume them to 28, although these findings were not statistically significant in this food group (P value: 0.1563).

Finally, for the group of food sources and high carbohydrate, the results show that their consumption increased daily (from 127 students to 145), occasionally (13 to 38) and never, going from 3 individuals to 16; weekly and fortnightly decreased from 121 students to 87 and from 54 to 32 students (P value: 0.0832), i.e. there were no statistically significant differences between the first data and the second. See table 3.

Discussion

The studies reviewed by Troncoso P, state: students have inadequate food and nutrition, with reduced consumption of fruits, vegetables and dairy products and high intake of foods of high energy density, especially carbohydrates of rapid absorption, which raises the following: why do students not eat properly?, since the lack of a balanced diet, which is identified by them and which can lead to a low intake of some nutrients such as calcium and iron and to appropriate the contribution of macronutrients, may be due to the scarce supply available in the educational institution, due to

Food groups	Take	Frequency of consumption												
		Daily		Weekly		Fortnightly		Occasionally		Never		Total		Hypothesis test F
		%	No	%	No	%	No	%	No	%	No	%	No	
High in fats	1	4	14	39	123	52	166	5	15	0	0	100	318	0.0000
	2	3	10	38	122	45	142	14	44	0	0	100	318	
High in sugar	1	3	10	38	122	45	142	14	44	0	0	100	318	0.002
	2	2	6	19	62	32	101	25	78	9	29	100	318	
High in sodium	1	5	15	29	92	41	131	25	78	1	2	100	318	0.0037
	2	2	7	21	66	21	66	25	78	1	2	100	318	
Protein source foods of animal origin	1	7	21	51	163	40	127	2	7	0	0	100	318	0.0000
	2	18	57	48	153	17	54	3	9	14	45	100	318	
Plant-based protein source foods	1	26	82	50	158	12	38	11	35	2	5	100	318	0.9463
	2	9	28	51	163	17	54	13	42	10	31	100	318	
Foods high in unsaturated fat	1	27	85	43	136	26	84	3	11	1	2	100	318	0.0000
	2	17	53	41	130	26	83	13	42	3	10	100	318	
Foods high in fiber and vitamins	1	40	128	48	152	9	28	3	10	0	0	100	318	0.1563
	2	35	111	40	127	10	33	6	19	9	28	100	318	
Food sources and high in carbohydrates	1	40	127	38	121	17	54	4	13	1	3	100	318	0.0832
	2	46	145	27	87	10	32	12	38	5	16	100	318	

Table 3: Frequency of food consumption first and second data collection.

the high costs of these foods. or by the negative influence of academic peers [10], the latter expressed by Troncoso is not distant or to what was observed in this study, where there is an increase in the consumption of protein of vegetable origin and a decrease in consumption of animal protein, this may be due to the knowledge provided by teachers, who influence the actions of the pupils and leading them to make food decisions not very successful.

When evaluating the consumption of protein sources in which cheeses and dairy products were included in this research, a daily increase was observed, from 17% to 57%, similar results when compared with the study of Díaz M, in which dairy products were one of the food groups with the highest daily consumption in the population (47%) (6), which can favor the maintenance of muscle and bone mass in this population.

Rizo-B found in his study that carbohydrates were the most included in the eating pattern with an average of 44.4 (SD 8.2%), compared to proteins 21.9 (SD 5.9%) and fats 33.0 (SD 7.5%) [5]. In this study it was found that as nutrition students advance in their knowledge, the modification in the consumption of food according to the classification by food groups was presented as follows:

daily and occasional consumption of carbohydrates increased, followed by food sources of protein of vegetable origin in daily and fortnightly form L, as well as the daily consumption of foods were before protein of animal origin, on the contrary the consumption of foods high in sugar, sodium and fat was decreased. (Table 2), elements that in the future favor the quality of life of this professional.

Rizo B also found that the diet of these students with respect to micronutrients showed significant deficiencies, with women having the greatest deficiencies, especially in the consumption of Vitamina D, folic acid, calcium and iron [5]. And although in this study a quantitative analysis was not made regarding the intake of these nutrients, from the qualitative part it can be inferred that the inclusion of protein of animal origin is not very significant, although a daily increase has been seen (group of meats, milks among others). It is important to clarify that in this age group the formation of the muscular and bone system is important, therefore, the inclusion of these nutrients on a daily basis in their diet is essential. On the other hand, the consumption of food sources of fiber and vitamins although, it occurs in most students, its consumption is not always daily, which can affect the intake of these micronutrients, influencing future health and quality of life, especially in female students,

who at this time of their lives, They need good consumption of iron by the process of menorrhagia and calcium to finish the bone accumulation of this mineral and not to mention the importance of folic acid in this population group in the stage of possibility of gestation, for all the above, it can be said that possibly the university students of this undergraduate may have important nutritional deficiencies.

The multicenter study in Chilean students of Duran, reports that only 7.2% consume the recommended portions of dairy, 7% fruits and 27% vegetables. A high consumption of alcohol, junk food and sweet snacks is observed, however women had a higher frequency of weekly consumption / day of dairy products, vegetables and lower weekly consumption / day of alcohol and junk food [7]. This study had as a population only women and when comparing the data reported by Duran, in the population studied it is observed that as their knowledge related to nutrition and food advances, the daily consumption of foods high in fat, sugar and sodium decreases and the occasional increases, the above may be due to the fact that it went from its daily consumption to occasional, A favorable aspect, however, as knowledge increases the consumption of foods high in carbohydrates increases its consumption and decreases that of foods sources of fiber and vitamins aspecto that is not propitious.

The study conducted by Diaz, indicates that students presented inadequate eating habits, due to the low consumption of vegetables, fruits, meats, eggs, dairy and cereals, where in addition the consumption of sugary drinks and sugar is of high prevalence in this evaluated population. However, the author suggests that the low consumption of vegetables among university students may be due to the socioeconomic situation, relating it to the fact that the lower strata are those who include it less, in addition to highlighting that the low consumption of vegetables is directly influential to consider a low consumption of vitamins, minerals and fiber, which harms the health of university students in the short and long term.

By increasing the risk of nutritional deficiencies, colon diseases and weight gain [6]. What Díaz expressed and when compared with what was observed in this study, is worrisome, because there may be a close relationship with the economic situation of public university students, and not due to lack of application of the knowledge acquired.

The study by Piero A., *et al*. on the tendency in the food consumption of university students, concludes: "In both groups university students in general, had an unbalanced, monotonous and insufficient diet in quantity and quality of nutrients due to inadequate food selection and consumption. Little variation was observed over time. Diet covered energy expenditure and macronutrient recommendations did not cover some micronutrients. The excess of saturated fat and the high consumption of simple sugars warns of the need to promote changes in the diet of young people to prevent the onset of obesity and cardiovascular diseases in adulthood. Given this situation observed in the university population, it would be convenient to carry out food-nutritional education campaigns and in this way it could induce improvements in the diet and prevent the appearance of diseases" [11].

And the article by Mardones L., *et al*. on Eating habits in university students of the Bío-Bío region, Chile, in 2017 and which aimed to know the eating habits of students of the San Andrés Campus of the Catholic University of the Most Holy Conception (UCSC), Bío-Bío Region, Chile, does not differ much from what has already been reviewed and reported in other works and even with this study; There is a low percentage of adequate consumption of vegetables (42.3%) and fruits (19.4%) and a high consumption of sugary foods (68.6%) and sausages (61.7%), low consumption of low-fat dairy (36.0%) and water (46.3%), in summary 30.0% of the students had an unhealthy diet, 44.9% followed an unhealthy diet and only 25.1% had a healthy diet [12].

This is how university students are considered a nutritionally vulnerable group, because at this age eating habits and behavior are consolidated and they take responsibility for their own diet [13]. Sosa says: the above justifies the need to insist on a dietary orientation so that they have tools and can improve their habits and thus society will have health care by professionals who are an example of attitudes and correct eating habits and may even avoid Early chronic diseases, because knowledge about nutrition and its relationship with health is the best way to achieve changes in eating habits and to instill healthy and lasting habits. In addition, Orem considers: educating in health allows acquiring knowledge, skills and motivations, so that the self-care actions developed allow promoting and maintaining health [14]. Pi., *et al*. also denotes "the importance of reinforcing nutritional food education since in many cases it is a determining factor of incorrect food habits" [15].

However, in the study of Rizo with students of Nutrition and Nursing, the authors state that despite being undergraduate in Health Sciences, they do not apply the knowledge in nutrition acquired and have unbalanced intakes of macronutrients and important micronutrient deficits [5], likewise, other articles state Regardless of the career, university students manifest a poor diet, with little consumption of foods rich in fiber, with high energy density due to the high consumption of saturated fats and simple carbohydrates [11,13], something similar has been reported in the findings of this study, where it would be expected that as students acquire their knowledge in nutrition, The dietary pattern was healthier, with the inclusion of some foods and the exclusion of others, a situation that in some cases is not perceived, on the contrary the inclusion of foods unfavorable for their future health is observed. It seems that this population of students shows a trend similar to that of the entire Colombian population, since in the National Survey of

the Nutritional Situation in Colombia 2010, a daily consumption of fruits of 63.4%, vegetables of 32.4% and dairy products of 57.9% was described in the group of 19 to 30 years [6] and to complement the study by Montero Bravo., *et al*. they affirm that the diet of this population group is inappropriate, due to its high fat content and low in dietary fiber [14].

All of the above leads to the following reflection for teachers of undergraduate health and especially nutrition and is: the educational guidelines for these students and future health professionals, must be given in a very accurate way and with sufficient scientific argumentation, that allows the student to make the right decisions regarding their diet and avoid future suffering from CNCD, in addition to being an example of their profession between what they promulgate and do.

The Pan American Health Organization (PAHO) and the World Health Organization (WHO) in 2003, presented during the conference "Building Healthy Universities" in Santiago de Chile, a proposal to consolidate the Hispanic American Network of Healthy Universities, which began the union of various institutions of higher education in countries such as Spain, Chile, Colombia, Venezuela, Canada, Peru and Mexico to conform or profile themselves as Healthy University or Health Promoters [16], but with the findings obtained in this study, the orientation and permanent monitoring by educational institutions of this proposal is key, which admits that students in the health area canaccess healthy foods, allowing them to have adequate nutritional parameters.

Eating and nutritional habits are closely related and both begin in childhood, if these are adequate, they will contribute to ensuring health in adulthood [16], but the passage through adulthood goes first through adolescence and youth, stages typical of university students, hence it is not explained why some food parameters Well founded in childhood tend to distort at this stage of life and even more so if the bases are being based on the undergraduate health and especially in the nutrition, it is here where we must prepare ourselves to respond and be able to contribute clearly to this situation experienced by all university students and manifested in many of the studies reported here, However, it is good to clarify that it is not the entire population that presents these conditions, although if a good percentage, then is the key more in the fundamentals of childhood and not in education or dietary guidelines in later years?

It is important to consider what Marsetti says: "food not only fulfills a physiological function, but also a social one and is not digested exclusively, but through representations that come from outside and that have been generated by the cultural environment". This implies that the environment in youth is key to the selection of foods and is complemented by factors such as: strength, availability,

quality, time and nutritional importance [16], Then we return to the same thing, the bases based on childhood are very vulnerable in the university stage as already mentioned, therefore this stage can not be neglected in healthy eating habits desirable for adulthood

Muñoz de Mier., *et al*. in their study on the evaluation of food consumption in a university population and its relationship with the academic profile, reiterates: there is no positive influence on the eating behaviors of Health Sciences students with respect to that of other degrees, indicating that the knowledge acquired in nutrition, are not put into practice [17] and Torres M, in his study on food habits in medical students concludes: that there are inadequate eating habits in these students, due to the omission of breakfast and the consumption of fast foods and that intervention in universities is essential to promote food education from the earliest years [3], but Mardones' study includes: in general, it is considered that university students in the area of health, presentn better knowledge of healthy eating compared to those of other careers, which in some cases leads to the presence of better eating behaviors in this subgroup, as was observed in the study of Reyes and Oyala in Peruvian students [18], but not in other studies conducted in Mexican students [12,19]. All the findings of the aforementioned researchers, place again the question of not being clear, if the knowledge acquired on healthy eating in the university population exert the right effect so that they acquire or continue with their good eating habits or have more effects the food culture and social influence and when reviewing the concept of food culture issued by Vega E, This is "a characteristic lifestyle shared by a social or family group that significantly influences the customs and eating habits of a population, which will lead them to select and consume the same foods they learned to eat in their family or social circle" [20], seems to give a connotation that this situation is more powerful than acquired knowledge.

However, Vega also says that these customs can be modified in the course of life, because food and nutrition are processes that can be affected by sociocultural, biological and environmental aspects and therefore when evaluating a relationship between family food culture and the formation of eating habits, it is essential to look at the childhood of the individual, Because at this stage is where eating habits are formed, which will have relevance in their eating pattern in young adulthood, especially family members [20], then, if the eating habits acquired in childhood through the family or the culture and social environment of the individual, can be little or nothing modifiable in the university stage through the acquisition of this Knowledge is an indication of the reasons why students in the areas of health and specifically nutrition do not present adequate eating habits despite the knowledge acquired. However, in this study, favorable and unfavorable changes were perceived

as they progressed in the semesters, perhaps indicating that the knowledge received, if it can have an influence in the medium and long term.

Duarte C., *et al*. in their study mentions other important aspects in the construction of dietary patterns such as: the influence of the media, especially television, teachers, friends, colleagues and health professionals; Belonging to cultural or ethnic groups also intervenes in the customs of the country or region and especially that of the family and its social environment [21]. All the confirmations of Duarte serve to conclude that the knowledge only imparted from the university to generate adequate eating patterns in professionals in the area of health and specifically in the area of nutrition, are not sufficient for this purpose, since this is a multidisciplinary process of utmost care in different stages of the individual, So it should not be pretended that c on provide education on healthy eating in the uversitarios, significant modifications are achieved in their eating habits, since they will be given from distant time and with the continuous influence of scientific knowledge and the sociocultural relationship of people with the same approach to food saludable.

In addition, according to Campos U, people individually initiate self-regulation processes not supervised or advised by another (parents, friends, teachers, media), this process of self-regulation begins with self-observation of behavior, social and cognitive conditions and perceived self-efficacy [22]. The self-evaluation of all behaviors and especially eating behavior, leads people to regulate their behaviors, in this case those related to healthy eating. Campos, mentions in his publication of a reflection: "healthy eating habits promote well-being and prevent diseases, however, despite the intentionality of changing harmful habits, people often fail in these attempts. This is because change, in addition to knowledge about adequate nutrition, requires self-regulation skills that allow observance, evaluation and action to be taken, maintaining motivation throughout the process" [22].

In Colombia, the Ministry of National Education in 2016, held a consultation for the participatory construction of an institutional welfare policy, for the promotion of the integral human development of the educational community in the different contexts of the institutions of higher education, public and private of the country [23], said policy in this country and in all must include continuity in The formation of healthy lifestyle habits, including here healthy and balanced eating, in which scientific aspects should be covered as well as cultural, social, family and the influences of the media and social networks.

Conclusion

The findings of this study, as well as others similar, showed that university students, especially those in the area of health and spe-

cifically nutrition and dietetics, despite having the knowledge and considering what is essential for a good quality of life, a good number of these do not practice it in Correct way in their daily diet, therefore, programs aimed at promoting adequate eating habits, rather than focusing on educational strategies, should consider having a more multidimensional vision of key aspects of great influence such as food culture, social life, interaction with peers, among others Aspects that also strongly affect the proper selection of foods and therefore the nutritional status and even the diseases associated with food that may appear in the future.

Bibliography

1. Barriguete Meléndez JA., *et al*. "Eating habits, physical activity and lifestyles in schooled adolescents in Mexico City and the State of Michoacán". *Revista Espanola de Nutricion Comunitaria* 23.1 (2017).

2. Delavari M., *et al*. "Migration, Acculturation and Environment: Determinants of Obesity among Iranian Migrants in Australia". *International Journal of Environmental Research and Public Health* 12.2 (2015): 1083-1098.

3. Torres-Mallma C., *et al*. "Eating habits in first- and sixth-year medical students at a private university in Lima, Peru". *Revista Chilena de Nutrición* 43.2 (2016): 146-154.

4. Irazusta Astiazaran A., *et al*. "Feeding university students". Osasunaz 8 (2007): 7-18.

5. Rizo-Baeza MM., *et al*. "Quality of diet and lifestyles in Health Sciences students". *Nutricion Hospitalaria* 29.1 (2017): 153-157.

6. Díaz-Muñoz GA. "Characterization of eating habits and level of physical activity in university students". *Rev Forest Health* 8.1 (2018): 8.

7. Durán S., *et al*. "Characterization of the nutritional status, eating habits and lifestyles of Chilean university students: multicenter study TT - Lifestyles, body mass index and sleep patterns among university students". *Revista médica de Chile* 145.11 (2017): 1403-1411.

8. González Jorge and Pazmiño M. "Calculation and interpretation of Cronbach's alpha for the case of validation of the internal consistency of a questionnaire, with two possible Likert scales" (2015).

9. Zavala A. "Reliability Analysis: Cronbach's Alpha". Spain (2012).

10. Troncoso Pantoja C. "Perception of food during the university education stage, Chile". *Rev Costarric Public Health* 20.2 (2011): 83-89.

11. De Piero A., *et al*. "Trend in food consumption of university students". *Nutricion Hospitalaria* 31.4 (2015): 1824-1831.

12. Mardones L., *et al*. "Eating habits in university students in the bío-bío region, Chile" 23.1 (2017).

13. Cares Gangas MF., *et al*. "Eating behavior and nutritional status in university students of the engineering faculty of the Catholic University of the Most Holy Conception in September". (2017): 69.

14. Sosa-Cárdenas MR., *et al*. "Effect of education on eating habits in undergraduate nursing students". *Revista de Enfermería del Instituto Mexicano del Seguro* 23.2 (2015): 99-107.

15. Pi RA., *et al*. "Nutritional status in university students: Its relationship with the number of daily food intakes and macronutrient intake". *Nutricion Hospitalaria* 31.4 (2015): 1748-1756.

16. Marsetti PS. "Evaluation of eating patterns in students in the second semester of the Administration Career in the face of changes brought about at university admission" (2014): 1-67.

17. Mier M De., *et al*. "Evaluation of the food consumption of a population of university students and its relationship with the academic profile". (2017).

18. Kings S OM. "Knowledge about healthy eating in students of a public university". *Revista Chilena de Nutrición* 47.1 (2020): 67-72.

19. Muñoz-Cano JM., *et al*. "The healthy eating index of new students entering a university in Mexico". *Nutricion Hospitalaria* 31.4 (2015): 1582-1588.

20. Vega Echevarria LA. "Influence of family food culture on the eating habits of university students". Catholic University of the Holy Conception (2017).

21. Duarte-Cuervo CY., *et al*. "Factors related to the eating practices of students from three universities in Bogotá". *Review of Public Health* 17.6 (2015): 925-937.

22. Campos-Uscanga Y., *et al*. "Design and validation of a scale to assess the self-regulation of eating habits in Mexican university students". *Archivos Latinoamericanos de Nutrición* 65.1 (2015): 44-50.

23. Ministry of National Education B. "Welfare Policy Guidelines for Higher Education Institutions". Colombia (2016).