

University Canteens' Standard of Food and Nutrition: A Qualitative Study based on University of Kelaniya

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Abstract

Even though, universities are considered as excellent centres for education, some students are unable to gain its full benefits due to various reasons. One of the decisive factor is the university students' food and nutrition. In the case this article find out university canteens' quality and standard of their food and nutrition. This paper discusses mainly students and canteen owner/employee opinions regarding research objective. Both of them data were collected from 25 students and 6 canteen employee/owners in University of Kelaniya. A questionnaire survey was mainly used for primary data collection. Data were descriptively analyzed using elementary statistics. The study found that generated output shows that from the students point of view the quality of the university canteens are in an acceptable manner but not good (Below 75% from each criteria.) but from the canteen's employees point of view the quality is in a good position. (This output might be biased because they are currently engaging with the canteen work).

Keywords: Food, Nutrition, University Canteens'

Paper type: Model Testing.

Introduction

There are 15 approved universities in Sri Lanka. Consider about the no of students in these universities more than 90000. Its mean country's intelligence peoples (especially teenagers) gathering to universities which is situated at entire country. Those who selected the universities in Sri Lanka have to spend at least 3 years in the university. All in all they pass more than 3240 meal wise this 3 year time. The qualities & nutrition level of foods is very important fact which effect to the universities' students in this time. Because of they are teenagers as well as they are spending their most valuable time period their life.

University Grand Commission also understood that situation. Therefore they published Food nutrition book for the university students. (Gamage, 2011)

However there are various opinions in the universities public about the food that supply university canteen. Universities have a common enrollment method for the deliver holding canteen like tender. As well as they have some conditions about the services of canteen and always supervising. Not only has the university administration, main students also had a right to look after the canteen standard.

All universities have more than 5 canteen. Some canteens have big customer crowd that excess the space .Some canteens haven't enough customers for selling foods. At the present, restaurants are growing rapidly around the universities with high price than university canteen's prices. On the other hand, we can see some of the students suffering less nutrition level, various diseases & many other illnesses. That will be a huge effect to studies of the students. So as final year students, we are seeking to find a reason for that issue & hope to suggest some suggestions to create a best situation to students in universities.

So this research is focusing on identifying the Infrastructure & facilities of canteens in universities, Quality & the Nutritious level of the meals at them, as well as student's opinions about the canteen.

So we have selected universities in western province in Sri Lanka as our population. We hope to gather data from some students & staff members of canteens which selected randomly. They after we can analyze the data gathered from the sample & can get a clear picture of the popular. It will support to find a way to get rid of the problem.

Literature review

Healthy & wealthy is very important to students who are doing higher studies in universities. A healthy body & a fresh mind greatly helps to create an educated & successful graduate. These all depend on the meals that university students are having. So it's very important to search about the nutritious level of the foods available in university canteens as well as their infrastructure facilities. It gives us some ideas to improve the current situation. When we consider about the history background of this area, we identified that, there are very few researches done on this area in the world also in Sri Lankan. So we can fill that gap by investigation about this area.

By the way some main issues which pointed out by the students relating to the food provided by hostels and university canteens. They are following; Cleanliness, Varieties of food, Taste of food, Quality and freshness of food, Cooking and edibility conditions, Quantity of a plate of food, Canteen food

related illness such as nausea, vomiting, loose motion etc, Lack of food for late comers, Availability of food on holidays. (Perera, 2013)

Using Maslow's need hierarchy, some writers have well described that the needs from the lowest level to the highest and shows how each need ought to be met before the next higher need and thereby it is emphasized that the lowest level of needs i.e. physical needs, are highly important because without fulfilling them an individual cannot go ahead. (Feldman, 1986). Further, a research carried out in a national university in Sri Lanka, revealed that the highest percentage of students have been facing psychological, economic and social problems (Athukorale, 1995)

Health-promoting styles in a university in Guangzhou was quite low. The findings suggest that health education in regard to nutrition, exercise, and health responsibility should be strengthened by the university authority, and student affairs administrators should provide facilities to meet the demands of choosing health-promoting behaviors. ((Dong Wang, Chun-Quan Ou, 2009)

Investment in the university canteen should be directed towards the compliance of safe procedures by food handlers, through a continuous training plan that covers theory as well as on the job training. With these measures, it would be possible to significantly reduce the identified problems, overcoming safety hazards. (M.B. Veiros, R.P.C. Proenca, M.C.T. Santos L. Kent-Smith,A. Rocha, 2009)

An association between salt (NaCl) intake and blood pressure has been reported in many epidemiological studies (1). Furthermore, some recent studies have shown that high salt intake is independently associated with increased risk of cardiovascular disease (2). Besides this, high salt intake may be a risk factor for other diseases like stomach cancer and have a negative effect on calcium and bone mineral metabolism. Furthermore this researchers say the salt content in lunch meals in worksite canteens is shown in Table 1. The intake is higher in men compared with women when given as gram per meal, but there was no gender difference per energy unit. Of the 180 meals, 109 (61%) had a salt content at or below 1.0 g per 100 g. Eleven (6%) of the meals had a salt content at or below 7 g per 10 MJ. Five (3%) of the meals had a salt content equal to or more than the recommended daily salt intake of 7 g. The salt content in various canteen meals is given in Table 2, per 100 g, per portion, and per 10 MJ. The salt content in salad was significantly lower than the salt content in other meal types when expressed

in all three ways, but no significant differences were found between salt content in the other meal types with mean salt content ranging from 13.0 to 16.1 g per 10 MJ. (Lone Banke Rasmussen, Anne Dahl Lassen, Kirsten Hansen, Pia Knuthsen, Erling Saxholt and Sisse Fagt, 2010)

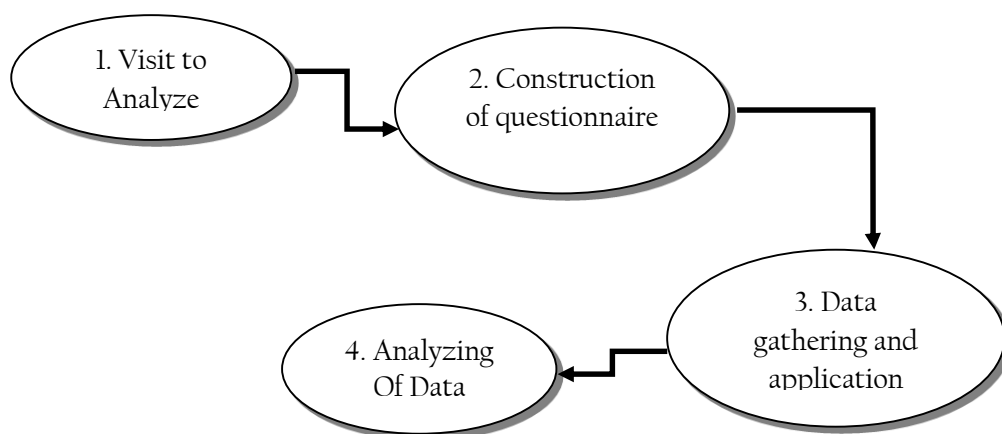
So with referring these extracts we can get a little picture of the area that we are going to research. And also actually, do infrastructure & food nutritious level of universities is in a sad level? We try to investigate & improve the current situation

Materials and Methods

Researching about the quality of the canteens in the university context is really a timely topic since there are lots of issues arise in the recent times. There were lots of media reporting about the conditions of the canteens but the updated situations are not reported. Here as our research we have selected such a realistic topic in order to evaluate the progress of the canteens in the university premises

The study was carried out in four stages which can be identified as visit to analyze location (Canteens), construction of hygienic and healthy food checklist, data gathering and application, analyzing of data as shown as in the figure 1.

Figure 1



1. Visit To Analyze Location

The visit took place on the scheduled date. During this visit we verified the university premises from a physical and environmental perspective. Also the types of services provided by the canteens and organizational systems, as well as the production flow were verified such as food handlers, equipments and materials used by the canteen contractors, material (vegetables, spice items, Etc...) receiving and storage, preparation of foods and the standard of cooking area. The data's were helpful and important to construct the check list therefore to be in line with the study.

2. Construction Of questionnaire

The stage began with the identification and gathering information about the standards related to food and service which are expected and accepted by the contracts. The questionnaire was developed, based on guidance provided and approved by the supervisor according to the population which selected. Also the structure and the items were included as needed as for the study accordingly. The likert scale was structured in a way which enabled to explore the information in detail for the study such as canteen facilities and environment, food handlers, equipments and materials, knowledge of population regarding material (vegetables, spice items, Etc...) receiving and storage, preparation of foods and cleaning areas and opinions on quality standards.

3. Data gathering and application.

Our research can be categorised under qualitative kind of research. In order to collect the relevant data we have prepared two questionnaires with a likert scale . One for the customers of the university canteens (students, academic/ non-academic staff) and the other one for the people who are engaging with the canteen (owners, employees). Not only that we have interviewed a sample of relevant people in order to make the output more effective. Since the questionnaires issued for the all relevant parties, we strongly believe that we evaluate the data in a wide perspective. (Not only from the customer's point of view but also from the owners point of view).

4. Analyzing of Data

Analysis of data was primarily based on the classification proposed by (M.B. Veiros, R.P.C. Proenca, M.C.T. Santos L. Kent-Smith, A. Rocha, 2009). Descriptive of each item of the questionnaire were calculated and compared against the standard level proposed by them. The standard levels are; Very Good if $> 90\%$; Good between $> 75\%$ and $< 90\%$; Acceptable between $> 50\%$ and $< 75\%$ and Not Acceptable if it is $< 50\%$.

we have used latest IT soft wares in order to evaluate the data effectively. The likert scale gave us a strong output. By that we have generated an effective and efficient output. In our point of view the research was conducted successfully and by that we can give a strong recommendation in order to make the canteen process more effective. Here the research was organised and presented with the directions of our supervisors.

Presentation of data and analysis

Table one: Descriptive Statistics (Students)						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Do your employees maintain clean personal habits?	25	1	5	3.28	1.370	1.877
Is there sufficient room for 150 students to have their meals	25	1	5	2.68	1.215	1.477
Canteen is cleaned regularly	25	1	5	3.08	1.187	1.410
Supplies healthy and nutrition meals	25	1	5	3.16	1.143	1.307
There is drinking water facility and it is maintain well	25	1	5	3.48	1.085	1.177
Garbage quickly removed in properly	25	1	5	2.88	.881	.777
Are products stored on a first-in, first-out basis to reduce the possibility of contamination through spoilage? Are old products kept in front of the new to help in the rotation process?	25	1	5	2.44	1.158	1.340

Is all equipment that comes in contact with food cleaned and sanitized as often as necessary to prevent contamination of the product? You should follow appropriate cleaning schedules for each piece of equipment.	25	1	5	2.68	1.108	1.227
Price list shown in front in canteen and deliver meal according to that price	25	1	5	2.52	1.262	1.593
Enough lights, fans and other facilities are supplied	25	1	5	2.72	1.242	1.543
Valid N (list wise)	25					

Source: Research data

According to the above table, the questions of *Do your employees maintain clean personal habits?* Consist of the mean value of 3.28. Therefore, we suggested that this mean value comes under the classification of Acceptable (65.6%). The question of, *Is there sufficient room for 150 students to have their meals* consist of the mean value of 2.68. So, we suggested that this mean value comes under the classification of Acceptable (23.6%).

The question of *Canteen is cleaned regularly.* Consist of the mean of 3.08. Therefore, we suggested that this mean value comes under the classification of Acceptable (61.6%). We suggested that the mean value is 3.16 comes under the classification of Acceptable (63.2%), the question of *Supplies healthy and nutrition meals.* According to fifth question *there is drinking water facility and it is maintain well,* consist of the mean value 3.48 express result of Acceptable (69.6%). The question of *Garbage quickly removed in properly,* consist of mean value 2.88. Therefore

we suggested that this mean value comes under the classification of Acceptable (57.6%).

Next question *Are products stored on a first-in, first-out basis to reduce the possibility of contamination through spoilage? Are old products kept in front of the new to help in the rotation process?* Is taken result of Not Acceptable (48.8%) according to mean value 2.44. The question of *is all equipment that comes in contact with food cleaned and sanitized as often as necessary to prevent contamination of the product? You should follow appropriate cleaning schedules for each piece of equipment.* Consist of the mean value of 2.68. Therefore we can suggested that this mean value comes under the classification of Acceptable (53.6%).

The next two questions *Price list shown in front in canteen and deliver meal according to that price* and *enough lights, fans and other facilities are supplied*, consist of mean values 2.52 and 2.72 respectively. So we suggested that this mean values comes under the classification of Acceptable (50.4%, 54.4% respectively)

Table two: Descriptive Statistics (Canteen owners/employees)

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Are the employees well-trained in what they do? You can avoid many problems by making sure that your employees clearly understand their functions	6	2	5	3.83	1.169	1.367
In handling food products, do your employees wear the proper hair covering, disposable gloves and clean uniforms?	6	2	5	3.83	1.329	1.767
Is there sufficient room for 150 students to have their meal	6	2	5	3.83	1.169	1.367
Canteen is cleaned regularly	6	1	5	3.67	1.751	3.067
Supplies healthy and nutrition meals	6	1	5	3.33	1.366	1.867
There is drinking water facility and it is maintain well	6	2	5	3.83	1.472	2.167
Garbage quickly removed in properly	6	3	5	3.83	.753	.567
Fair time is taken to deliver an order	6	2	5	4.00	1.265	1.600
Are products stored on a first-in, first-out basis to reduce the possibility of contamination through spoilage? Are old products kept in front of the new to help in the rotation process?	6	2	5	3.50	1.049	1.100
Is all equipment that comes in contact with food cleaned and sanitized as often as necessary to prevent contamination of the product? You should follow appropriate cleaning schedules for each piece of equipment.	6	3	5	4.00	.894	.800
Price list shown in front in canteen and deliver meal according to that price	6	3	5	4.50	.837	.700
Enough lights, fans and other facilities are supplied	6	3	5	4.00	.894	.800
Valid N (listwise)	6					

Source: Research data

According to the above table, the questions of first three can be suggested Good.

Are the employees well-trained in what they do?

You can avoid many problems by making sure that your employees clearly understand their functions in handling food products, do your employees wear the proper hair covering, disposable gloves and clean uniforms? mean value 3.83 Suggest “Good” (76.6%)

Is there sufficient room for 150 students to have their meal? mean value 3.83 Suggest “Good” (76.6%)

According to next two questions can be suggested “Acceptable”.

Canteen is cleaned regularly, mean value 3.67 Suggest “Acceptable” (73.4%)

Supplies healthy and nutrition meals mean value 3.33 Suggest “Acceptable” (66.6%)

The 6th, 7th, and 8th questions which is included above table are suggested result “Good”

There is drinking water facility and it is maintain well mean value 3.83 Suggest “Good” (76.6%)

Garbage quickly removed in properly mean value 3.83 Suggest “Good” (76.6%)

Fair time is taken to deliver an order mean value 4.00 Suggest “Good” (80%)

The questions of *Are products stored on a first-in, first-out basis to reduce the possibility of contamination through spoilage? Are old products kept in front of the new to help in the rotation process?* Consist of the mean value of 3.50. Therefore, we suggested that this mean value comes under the classification of Acceptable (70%).

According to last three questions we can suggested result is “Good”

Is all equipment that comes in contact with food cleaned and sanitized as often as necessary to prevent contamination? mean value 4.00 Suggest “Good” (80%) *You should follow appropriate cleaning schedules for each piece of equipment.*

Price list shown in front in canteen and deliver meal mean value 4.50 Suggest “Good” (90%) *according to that price.*

Enough lights, fans and other facilities are supplied mean value 4.00 Suggest “Good” (80%).

Conclusion and Discussion of Findings

Here in our research basically we have analysed about the quality of the university canteens. This is carried out as both qualitative and quantitative type of research. We have gathered data from both students and the employees of the canteens by issuing questionnaires. In order to analyse the data we have used various analytical tools.

The generated output shows that from the students point of view the quality of the university canteens are in an acceptable manner but not good. (below 75% from each criteria.) but from the canteen's employees point of view the quality is in a good position. (this output might be biased because they are currently engaging with the canteen work).

Furthermore the questionnaires that we have issued for students shows that the canteen employees maintain clean personal habits (65.5%) should be improved. Students need more space available to have their meals. Canteens should be clean regularly than now. Availability of healthy and nutritious foods should be improved. Even if the condition of the drinking water facility is good (69.6%) it is better to be improved. Garbage removing process should be improved more and more in the future since they are not agree with the current process. (57.6%) food issuing process is not compatible with the first-in-first-out method. Since students response regarding this matter is not even in the acceptable range (48.5%) this should be highly improved. The cleaning schedule should be improved than now since that criteria reached the acceptable level by just 3% (53%). Presenting the price list and the prices of the foods are somewhat questionable (50.4%) and the available facilities such as fans and lights should be improved (54%).

This an overall analyse about the canteens, the actual output of each can be vary with one another since there are six canteens in the university.

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