

# Nutrition knowledge on diet-related chronic non communicable diseases among the graduates from South Eastern University of Sri Lanka

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**Abstract** - The Purpose of this study is to understand the nutrition knowledge of the graduates on diet related chronic NCDs. A descriptive cross sectional study was undertaken among 200 graduates of south eastern university to assess the nutrition knowledge. Knowledge level analyzed with socio-demographic characteristics. Overall knowledge of graduates was poor; not a single graduate identified with good knowledge. Gender, home area, religious group, marital status of the respondents turned out to be not associated with the knowledge level of the graduates ( $p>0.05$ ).

**Keywords**- Nutrition knowledge, NCDs, Diet, Graduates

## Introduction

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow in progression. The four main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, and diabetes (WHO, 2011). NCDs have an impact on individuals and families; they also affect economies, health structures and societies. Amongst the many implications of NCDs – reduced life expectancy, overall reduction in consumption, income and savings

of individuals plus households and early retirement, all have a great impact on the economic productivity of a country, bringing about the spiral of ill health and poverty (Abegunde and Stanciole, 2006; Suhrcke et al., 2005).

It has been projected that, by 2020, NCDs will account for almost three-quarters of all deaths worldwide, and that 71% of deaths due to ischemic heart disease (IHD), 75% of deaths due to stroke, and 70% of deaths due to diabetes will occur in developing countries (Barker et al, 1993a). The number of people in the developing world with diabetes will increase by more than 2.5-fold, from 84 million in 1995 to 228 million in 2025 (Barker et al, 1993b). On a global basis, 60% of the burden of chronic diseases will occur in developing countries. In Sri Lanka, diet-related chronic NCDs currently account for 18.3 percent of all deaths and 10.2 percent of public hospital expenditures (but 16.7 percent of all hospital expenditures). The current loss attributable to diet-related chronic disease is estimated as 0.3 percent of GDP. In 2025, chronic diseases are expected to account for 20.9 percent of all deaths. Currently, dietary factors account for 10-20 percent of these chronic diseases. By 2025, dietary factors (particularly overweight) will increase in importance to account for 18-40 percent of chronic disease, and the importance of low birth weight as a predisposing factor will increase (Popkin et al, 2001)

Even though the genetic factor involving in the chronic NCDs, it is highly influenced by many environmental factors such as: Unhealthy foods: contain high-salt content, high-sugar content, high trans-fatty acids, saturated fat and by sedentary life style. Since the traditional Sri Lankan diet is vegetable based, a large proportion of adults (82%) do not consume adequate amount of vegetables. Despite the availability of an abundance and variety of fruit in Sri Lanka, the average consumption is found to be inadequate. Despite a modest consumption of fat (15%-18%) by the Sri Lankans, higher percentage of saturated fats is included in the diet compared to unsaturated fat. Higher saturated to unsaturated fat ratio is an important risk factor for development of cardiovascular diseases. The daily intake of salt (10g /day) and added sugar (60g/day –based on food consumption data, 35 g/day based on individual dietary records) is also high in Sri Lankan diet when compared to WHO recommendations. Physical inactivity in moderate is a protective factor against many NCDs. Majority of Sri Lankans (78 %) are engaged in moderate or higher level physical activities (> 600 Metabolic Min /Week). However, only a small proportion is engaged regularly in recreational activity. Female are significantly sedentary (30%) compared to males (19%) and this is also reflected in the higher mean BMI of the former. Alcohol consumption, Percentage of current drinkers is significantly higher in males (26.0%) compared to females (1.2%). However, less than five percent of male population takes alcohol more than 4 days per week (Ministry of Healthcare and Nutrition Sri Lanka, 2009).

World Health Organization has proposed a number of actions to address the problem of unhealthy eating behaviors. Among these recommendations, educating the people is expected to be more effective to control the diet related chronic NCDs. It is widely practiced in many developed countries, in the school level as well as in the university level.

Graduates are the most important section in the society. In future they are going to be the policy makers in the country. Therefore it is important to estimate the nutritional knowledge on the diet- related chronic NCDs among the graduates, since there is a deficiency in that knowledge we can make necessary

recommendations. Hence the study was carried out with the objective of assess the nutritional knowledge on diet related chronic NCDs among graduate students and to identify the source of knowledge on diet related chronic NCDs among graduates.

## Methodology

A descriptive cross sectional study was undertaken to assess the nutrition knowledge on diet-related chronic NCDs among graduates of south eastern university of Sri Lanka, mainly in the field of arts, commerce and science. Purposive sampling method was used to select 200 graduates from different area. Fifty (50) graduates from each batch from each faculty (Faculty of Applied Science, Faculty of Management studies and commerce, Faculty of arts, Faculty of Islamic studies and Arabic language) were recruited. Equal number of males and females were selected from each faculty.

Self administrated questionnaire containing 36 questions [Knowledge of Applied Nutrition (KN), Knowledge of Food Preparation (KP) and Perceived Confidence in Cooking Skills (PC)], (Whati, 2005) was used to collect data from respondents. The questions were directed towards gaining information regarding graduates' knowledge on diet-related chronic NCDs, sources of information, and socio demographic characteristics of the subjects. Knowledge was assessed by using score system. Data were analyzed by using descriptive statistics and SPSS software package.

## Results and discussion

Preparation of questionnaire to check the nutritional studies in a particular target group is a difficult task. Further, preliminary studies were conducted to choice the questions to include them in the final questionnaire. Preliminary study describes an evaluation of validity and reliability measures in a questionnaire designed to assess knowledge of nutrition in graduates participating in this research, for that, 60 basic nutritional questions were included in the questionnaire and was provided randomly to the graduates (Whati, 2005).

**Table 4: Number and percentage of sources of knowledge in which the respondents received information on diet-related chronic NCDs.**

Source of information *	Number(N)	Percentage
News paper	129	64.5
Magazine	110	55.0
Television	93	46.5
Internet	78	39.0
University	57	28.5
Health personals	43	21.5
Leaflets	25	12.5
Radio	21	10.5
Family	17	8.5
Nutritionist/ dietitian	7	3.5
Others	5	2.5

**Table 2: Overall knowledge on diet related chronic NCDs according to the background variables (N=200).**

Characteristics	Knowledge		Significance
	Poor (%)*	Satisfactory (%)*	
<b>Faculty</b>			
Faculty of Applied Science Other faculties	17(34.0) 126(84.0)	33(66.0) 24(16.0)	X <sup>2</sup> =46.007 df = 1 p=0.001
<b>Gender</b>			
Male Female	74(74.0) 69(69.0)	26(26.0) 31(31.0)	X <sup>2</sup> =0.613 df = 1 p=0.433
<b>Home are</b>			
Urban Semi urban / Rural	79(69.9) 64(73.6)	34(30.1) 23(26.4)	X <sup>2</sup> =0.322 df = 1 p=0.570
<b>Religious group</b>			
Muslim Others	120(71.42) 23(71.87)	48(28.5) 9(28.12)	X <sup>2</sup> =0.003 df = 1 p=0.959
<b>Marital status</b>			
Single Married	95(68.84) 48(77.41)	43(31.16) 14(22.58)	X <sup>2</sup> =1.545 df = 1 p=0.214

Finally each question was checked for answering correctly by 5 to 95% of the target population. The question does not fulfill the above requirement is removed from the questionnaire. After the preliminary

study of two times, the final questionnaire was prepared with 36 questions (Anderson, 2002).

**Table 2: Overall knowledge on diet related chronic NCDs according to the background variables (N=200)**

Characteristics	Number(N)	Percentage
<b>Faculty</b>		
Faculty of Applied Science	50	25.0
Faculty of Management studies and commerce	50	25.0
Faculty of arts	50	25.0
Faculty of Islamic studies and Arabic language	50	25.0
<b>Age (years)</b>		
26-29	77	38.5
30-33	56	28.0
34-37	67	33.5
<b>Gender</b>		
Male	100	50.0
Female	100	50.0
<b>Home area</b>		
Urban	113	56.5
Semi urban	40	20.0
Rural	47	23.5
<b>Religious group</b>		
Muslim	168	84.0
Hindus	20	10.0
Christian	12	6.0
Buddhist	0	0.0

Nutrition knowledge may influence dietary behavior directly or through nutrition attitudes. Dietary behavior may further become dietary patterns and influence one's nutrient intake. Therefore, understanding people's nutrition knowledge, attitudes, and behavior is the basis for nutrition education (Stanek and Sempek, 1990; McIntosh et al, 1990). Studies on nutritional knowledge in Sri Lanka are very rare, among them; there is no such research on the knowledge of graduate students on diet-related chronic non communicable diseases done in the past years.

According to the results, the overall knowledge of graduates on diet related chronic NCDs were poor (refer: Table 3). Not a single graduate identified with good knowledge. Faculty of applied science had 33%

of satisfactory level in knowledge. Nonetheless, it was significant when compare to the other faculties. As in the case of applied science, increase in the satisfactory level difference may be due to the early knowledge they gained during the advanced level studies. There was no significant difference between the knowledge score and of the gender found ( $p>0.05$ ), in another research, which conducted in Thailand, Comparison of knowledge between male and female adolescents found that female had more nutrition knowledge than males with statistical significance at the 0.01 (Ruamsup and Charoenchai, 2011).

This deviation in results may be due to the literacy level, is higher in Sri Lanka when compare to other developing countries and its' almost equal among male and female (Central Bank of Sri Lanka, 2005).

There is no significant difference between the knowledge score and home area of the respondents ( $p>0.05$ ). Where 84% of them had poor knowledge, which is higher than the semi urban / rural area graduates. Most of the rural area is now being urbanized and most of the people in Sri Lanka going towards the sedentary life style without knowing the consequences of it. In another study which mainly targeted on Taiwanese Elderly persons who were female, with lower educational levels, and living in remote areas scored lower on the knowledge scale than males with higher educational levels and living in more urban areas (Lin and Lee, 2005). However, the result variation may be due to the knowledge level gaining on diet related chronic NCDs of the people who living in either urban or rural are similar.

As in the case of religious group, there was no Buddhist graduate found. Most of the graduates were identified to be Muslims therefore, their knowledge level on diet related chronic NCDs were compared with other religious group (refer table 2). There was no significant different found among religious group, and the knowledge level was almost same ( $p>0.05$ ). It implies that the availability of sources of knowledge on diet related non communicable disease was low in every ethnic group and the lifestyle of all religious groups was interrelated. There is no association found with the nutrition knowledge on diet related chronic NCDs and marital status of the respondents ( $p>0.05$ ).

In case of individual source of information about the diet related chronic NCDs; from the all source graduates are getting their knowledge where news paper and magazines are used as an important source for getting their knowledge (refer: Table 4). Since, some of the TV channels showing their advertisement for their commercial purpose; it is too used by the graduates to gather their knowledge on chronic non communicable disease. Diet related Chronic NCDs associated with health complications, such as an increased risk of type 2 diabetes and cardiovascular disease (CVD) (Moller and Kaufman, 2005). When the graduates experience the diet related NCDs themselves, they go to health personals that also found to be a source of providing the knowledge. Only 3.5% of graduates gain their knowledge from the nutritionist / dietitian. Nonetheless, people seldom seek nutrition counseling from dietitians because it is not covered by the National Health policy and only some of the private hospital having the dietitian and it's very rare in government hospitals. As a result, medical practitioners or nurses have become the major sources of nutrition information many studies have indicated that the nutrition knowledge of doctors and nurses is not satisfactory (Dappen et al, 1986; Harrison et al, 1969).

**Table 3: Overall Knowledge of on diet-related chronic non communicable diseases (N=200)**

Level of knowledge	Number (N)	Percentage
Poor ( 1-12)	143	71.5
Satisfactory (13-24)	57	28.5
Good (25-36)	0	0.0
Total	200	100.0

Minimum: 6      Maximum: 23      Standard deviation: 4.07

## Conclusion /Suggestion

The overall knowledge of graduates on diet related chronic NCDs was poor. Gender, home area, religious group, marital states of the respondents turned out to be not associated with the knowledge level on related chronic NCDs. Statistically there was significant association found between the faculty of applied science with other faculties. Increase of the

knowledge level of graduates might increase the awareness and it would lead to guide the society to minimize the diet related chronic NCDs. So it is suggested that the Nutrition studies should be added as a compulsory subject in each and every degree programmes provided by Sri Lankan Universities to feed the knowledge on diet related chronic NCDs. Since this study was only restricted to the graduates of South Eastern university of Sri Lanka due to the time constrain and resource limitation. It is recommended; in future, further studies should be carried out throughout country to find out knowledge level of the graduates on diet related chronic NCDs.

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