

Nutritional Status and Attitudes in Female Medical Students of Philippine and Sri Lanka

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Abstract

Educational interference leads to the increase of knowledge on nutrition and the enhancement of people's attitudes to it. The Philippines and Sri Lanka, which are in the South Asian region of the world, are recognized as developing countries. With the busy schedules and hectic workload, medical students of the Philippines and Sri Lanka seem to regularly neglect and skip their meals. Therefore, the present study was carried out to determine the nutritional status and attitudes to it, among female medical students of the Philippines and Sri Lanka because medical undergraduates are the future of the health sector, and especially females are expected to play a leading role in the society. In the present study, the dietary habits, knowledge and attitudes regarding nutrition, and the nutritional status as calculated by weight, height, waist and hip circumferences, skin-fold thickness and mid upper arm circumference have been measured. The body mass index and the waist to hip ratio also have been calculated. There were 154 students in each sample.

It was observed that among the tested sample of female medical students, the average height of Sri Lankans is greater than those of Filipinos. The Philippine students' body mass index is higher than the Sri Lankans, and has more fat deposits than in the Sri Lankan students. As an average, none of the groups show obesity and thus has less prevalence for the Type 2 diabetes. Both test groups are conscious of their figure and are ready to go on diet plans if needed. Both groups are aware of the healthy body shape and are concerned about maintaining a good figure as a positive image for the profession, although few students do not consider it as an important aspect. As the conclusion, it could be suggested that none of the study groups are obese, thus has less prevalence to the Type 2 diabetes. However, as Filipino female students contain a high body mass index and a high degree of fat deposits in the body, chances of getting cardiac problems and increased blood cholesterol levels are higher in them than in Sri Lankans. Hence, this issue needs intense attention.

Keywords: Female medical students; Nutritional status; Obesity; Philippines; South Asia; Sri Lanka

Introduction

The importance of proper nutrition as one of the important aspects of lifestyle was emphasized in recent years and the trend toward healthier diets has increased, although television commercials put emphasis on pre-prepared or packaged food that has low nutritional value. Health is defined as 'a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity' [1]. The definition suggests that an individual must take care of the body, mind and emotions, and must pay attention to his/her life-styles and surroundings. The relationship between diet and health is strong, and goes to the extent that the nutrition goes hand in hand with some of the chronic diseases [2] important in preventing malnutrition, growth retardation, and acute child nutritional problems [3]. Nutrition plays a major role in the prevention and treatment of many leading causes of disease burden and death worldwide, including cardiovascular and cerebrovascular disease and also diabetes mellitus [4]. Evidences of epidemiology indicate that changes in people's lifestyles in the recent past have increased the frequency of major diseases. This highlights the significance of nutrition habits for people's health. Nutrition education as one of the important practical aspects plays an important role in raising public awareness and ultimately health of society [5].

The shape of the body and the physique mostly express an individual's nutritional status and attitudes to it. This is highly prominent among the female community as they seem to be relatively more beauty conscious than males. Educational interference leads to the increase in knowledge on nutrition and the enhancement of people's attitudes to healthy diet. A study revealed that, despite the field of study, undergraduates always show good personality concerns on their lifestyle at their graduate schools [6].

Young female adults' nutritional status and attitudes to it are very important as females play a great role for the future generation. According to WHO, in the Philippines and Sri Lanka, which are recognized as developing countries in the South Asian region of the world, obesity in young adults has become a main health issue [1]. Thus, a threat of having an unhealthy future generation emerges as a serious health concern in both countries.

Medical undergraduates are the future of the health sector and they are destined to play a leading role, not only in the medical field but also in social life. Thus, studying the nutritional status and attitudes to it among female medical students in the Philippines and Sri Lanka is worthwhile and the comparison of those factors would indicate the effects of dietary habits on physique of two groups. The study will help to identify areas of weakness in students' understanding of healthy eating and will also provide useful data for examining the relationship between nutrition knowledge and dietary behavior which, up until now, has been far from clear. This study was conducted as an analytical cross sectional study and was carried out among a group of randomly selected group of female medical students in the Philippines and Sri Lanka.

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Materials and Methods

An ethical clearance for the study was obtained from respective organizations (23/14). The sample size was calculated by taking into account the reported prevalence of overweight and obesity in Sri Lanka, which is of 34.4% [7] and 20.2% in the Philippines [8] with a margin of 5% error and 95% confidence level. A sample of 154 female medical students from the Colleges of Medicine in the Philippines and 154 female medical students from the Faculty of Medical Sciences in Sri Lanka were selected for the study. Convenience sampling method was employed to find volunteers for the study. Female students who have been diagnosed with chronic diseases such as diabetes mellitus, hypertension, hypo/hyperthyroidism and students having acute illnesses at the time of data gathering or immediate past week, or students with pregnancies were excluded from the sample.

A well framed and standardized questionnaire-cum-interview schedule was used to elicit information on anthropometric data, nutritional knowledge, attitudes to and, practices of nutrition. The anthropometric section consists of questions and measurements about potential confounding factors such as age, ethnicity, height, weight, waist circumference, skin fold thickness, hip circumference, and mid upper arm circumference.

All the voluntary students were provided with a consent form together with the questionnaire to gather information on the personal attitudes to nutrition in each community and compared the similarities or differences between the populations. Only the undergraduate female medical students whose consent was granted were taken as individuals within the sample. An assistant always accompanied the principal investigator when obtaining the anthropometric measurements. The procedure of measurements was clearly explained to the volunteers before the sample collection. All measurements were taken at a place of privacy. Those who wanted to withdraw during the study were given the freedom to do so and all the information collected were kept highly confidential.

Dietary habits, knowledge and attitudes to nutrition, and the nutritional status as calculated by weight, height, waist circumferences (WC), hip circumferences (HC), mid upper arm circumference (MUAC), Body Mass Index (BMI) and the waist to hip ratio (WHR) were calculated. The collected data were coded and used for evaluation. All collected data were subjected to a descriptive analysis using SPSS 15 to identify the proportion of obesity in the study population. After the BMI and WHR were individually analyzed, Independent t-test and Pearson Chi squared test were performed to compare the frequency of categorical variables between the groups.

Results

In terms of the weight of two populations, it was observed that, Filipino female medical students weigh more (55.72 ± 0.52 kg) than Sri Lankan students (53.90 ± 0.76 kg) and the difference was statistically significant. Similarly, BMI (23.00 ± 0.20 kg/m²), waist circumference (WC) (82.34 ± 0.52 cm), and skin fold thickness (SFT) (13.05 ± 0.17 mm) among the Filipino female medical students were found to be greater than those of Sri Lankan female medical students (BMI= 22.00 ± 0.30 kg/m², WC= 72.28 ± 0.76 cm and SFT= 11.33 ± 0.27 mm). For all three parameters, the difference was significant indicating that the Filipino students have a higher degree of fat deposits than in Sri Lankan students (Table 1).

However, the hip circumference (HC) and the waist to hip ratio (WHR) were significantly higher in Sri Lankan female medical students,

	Filipino students	Sri Lankan students	p-value
Age in years ^a	26.80 (2.30)	26.90 (2.20)	0.85
Weight (kg) ^b	55.72 (0.52)	53.90 (0.76)	0.49
WC (cm) ^b	82.34 (0.52)	72.28 (0.76)	0.84
SFT (mm) ^b	13.05 (0.17)	11.33 (0.27)	0.12
HC (cm) ^b	84.23 (0.54)	92.13 (0.71)	0.18
MUAC (cm) ^a	25.67 (0.23)	26.04 (0.26)	0.88
BMI (kg/m ²) ^b	23.00 (0.20)	22.00 (0.30)	0.41

^aNot significantly different; ^bSignificantly different

Table 1: Anthropometric characteristics of Filipino and Sri Lankan Medical students (Standard Deviation).

as 92.13 ± 0.73 cm and 1.29 ± 0.01 respectively and those of Filipino test sample was 84.23 ± 0.54 cm and 1.02 ± 0.01 respectively. MUAC was higher among the Sri Lankan group of medical students tested, with 26.04 ± 0.26 cm, while it was only 25.67 ± 0.23 cm for the Filipino test group. Levene's test for equality of variances suggested that there is no significant difference among two groups for those parameters (Table 1).

The results on the survey on diet plans among female medical students indicated that a significantly high number of Filipino female medical students undergo diet plans (51.9%) to maintain the body weight or healthy life style while only 18.2% of the Sri Lankan test population undergo any sort of diet plan, either to increase or reduce the weight. A significantly low number of female medical students found to be on diet plans (17.5% and 3.9% respectively for the Philippines and Sri Lanka). Among the two groups, the Sri Lankan student population appeared to be significantly lower than those of Filipinos, while majority were not on any diet plan during the study (82.5% and 96.1% for the Philippines and Sri Lanka respectively).

Over 75% of female medical students from both the Philippines and Sri Lanka agreed with the fact that it is important to maintain the body shape: for instance, to indicate a positive image of doctors to the general public. However, a significantly low number of medical students from both countries were not in the view that maintaining the body shape or figure is important to create an ideal image of a medical doctor to the public.

It was observed that 39.0% of Filipino medical students represent the body shape A (underweight), while for the tested Sri Lankan population, it was only 25.3% which was significantly low (Figure 1). Body Shape Guide indicates that the body shape of B and C are in normal weight. Out

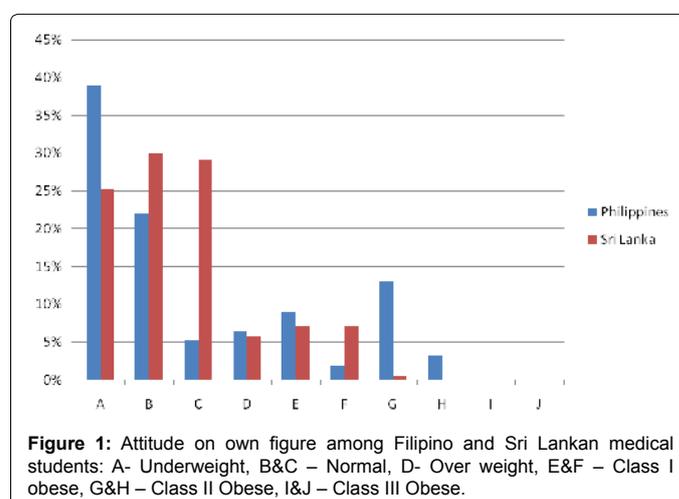


Figure 1: Attitude on own figure among Filipino and Sri Lankan medical students: A- Underweight, B&C – Normal, D- Over weight, E&F – Class I obese, G&H – Class II Obese, I&J – Class III Obese.

of the tested Filipino population, 27.3% have either B or C body shape, while almost double (59.1%) of Sri Lankan female medical students fall into the categories of B and C, indicating that the majority of Sri Lankan female medical students assume that they are in normal weight. However, only 1% of Sri Lankan female medical students fall into the Class III obesity category, but 16% - which was remarkably high - of Filipino female medical students fall into this category.

Discussion

Previous studies conducted among university students from different countries also revealed that a high number of students (80%-90%) belong to the normal BMI category, whereas the prevalence of malnourished individuals were low [9]. The present study also confirms the reports of Sakamaki et al. [9]. The Pearson Chi square test suggested that a high number of Sri Lankan female medical students believe that they are within the normal weight (59.1%): however only 1.9% of students believe that they are obese. Only 37.0% believed that they are overweight although none of them feels that they are obese. Yet the attitudes to these among two groups were different. Filipino students are in the attitude that they are either underweight or overweight (29.9% and 37.0% respectively). Some researchers found out that most of the students are not familiar with healthy foods needed for their body in different conditions [6]. A study revealed, even way back in 2005, 85.6% of students in China are familiar with concepts of balance between the nutrients in foods, however only 7% of them used the knowledge in selecting a diet [10]. The present study revealed that, among female medical students in the Philippines, 59.7% are in the belief that their nutritional state is good enough while 40.3% are not happy about their present nutritional state. Among the Sri Lankan group, 67.5% were happy about the present nutritional status while only 32.5% were with the feeling that they are not getting sufficient nutrients through their regular meals indicating that there is a significant difference among the two test populations on their belief regarding their weight as well as their own nutritional state. Sri Lankan medical students have more positive correlation than Filipino students in this regard.

The current study revealed that Filipino female medical students are more concerned over their body weight than the Sri Lankan group. In general, it is reported that female students were less likely, than male students, to be overweight, but more likely to be trying to lose weight [11]. Despite the fact, the present study revealed that their body weight and diet among female medical students in the Philippines and Sri Lanka are merely on occasion but not on diet plans due to their hectic busy schedules in studies.

The body shape in females is an important indicator of a healthy lifestyle [12]. Older teenagers and young adults with changing lifestyles such as tuition, stress of education can cause dietary changes that are not always beneficial for good health. Thus, it is important to be conscious of and take deliberate efforts to keep them physically active and to consume balanced low fat, low salty foods [13]. The positive indication is that, the study revealed only very few (6% and 7% respectively for Sri Lankans and Filipinos) falls into the category of overweight, but considerably a high percentage (11% and 14% respectively for Filipinos and Sri Lankans) falls in class I obesity. It was observed that being the neighboring country to Sri Lanka, among Indian college students, 46.6% of students were of normal weight, a high percentage (26%) were overweight, comparatively lesser percentage (15.4%) were under weight, 10.3% were obese class I and 1.7% were obese class III comparing to Sri Lankan students.

Some of the previous researches have shown that students have very

low/less awareness on nutrition issues and their knowledge and attitudes are average [6,10]. In women with normal weight, BMI and the body fat percentage were related to their nutrition attitudes. The present study revealed that knowledge and attitudes have a positive correlation with regard to body weight. And it is reported the female students achieved better scores than male students on nutritional knowledge and attitudes to them. They expressed that females notice their nutrition and health issues rather than males: it can be the reason for females' greater knowledge and attitudes than males [14] which could be related to the results of the present study as well. Previous studies [6] also suggested that as college is the golden period for young generation which helps in learning and changing knowledge, attitude and practices on nutrition, implementing nutrition as a subject in various college curriculums and improvement of the learning environment, related to nutrition need to be emphasized on college campuses.

Conclusions

It was observed that the average height of the female medical students in Sri Lanka is greater than those of Filipinos. Female medical students in the Philippines have higher BMI and also more fat deposits than Sri Lankan female medical students. As an average, none of the groups show obesity and thus has less prevalence for the Type 2 diabetes. Both test groups are conscious of their figure and are ready to go on diet plans if needed. Both groups of female medical students are aware of the healthy body shape and are concerned about the body shape in relation to the profession. Thus, as the conclusion it could be suggested that, although none of the groups are obese and has less prevalence to Type 2 diabetes, as Filipino female students have high BMI and fat deposits in the body, there is a chance of getting cardiac problem and increased cholesterol levels in the blood in the future unless precautions are taken. Obesity is a condition that involves the accumulation of fat in the body.

Although the present study revealed that a considerable percentage of medical students in both Sri Lanka and the Philippines are aware of and keen on nutrition and to maintain the body shape, still there are some who do not have the same attitude towards it. The students' attitudes and practices needed improvement, emphasizing the need for further studies and practical nutrition education programs. As the medical students play a vital role in taking messages to the community, holding nutrition workshops and courses in the university can enhance their attitudes and nutrition behaviors and have a positive effect on them.

Declarations

Ethical Approval and Consent to participate: Ethical clearance for the study was obtained from Ethics Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka with the number of 23/14. Consent for publication has been given by all authors and I hereby declare that the supporting data is available if needed. The research was conducted as a partial fulfillment of Medicine Degree and self-funded. As the investigator I have contributed to data collection, analysis and preparation of the manuscript (60%). Prof. PPR Perera has edited the manuscript and also has given basic skills in data collection (25%) and Dr's AR Espinoza, and R Espinoza contributed to this study by 15%, being internal advisors of the research.

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