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ORIGINAL PAPER

Effectiveness of health education on knowledge, attitude and practice regarding junk food consumption among interns in a tertiary health care center in Chennai, India – a quasi-experimental study

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ABSTRACT

Introduction and aim. Junk foods are defined as any of various pre-packaged foods that are high in calories but low in nutritional value. This study was done to evaluate the effect of health education intervention on the knowledge, attitude, and practices regarding junk food consumption among MBBS interns at the tertiary health care center in Chennai, India.

Material and methods. This was a quasi-experimental study conducted from January to March 2023 among 105 CRMIs of a Government medical college in Chennai, India. After getting Institutional Ethics Committee approval, data was collected using a pretested self-administered semi structured questionnaire before and after health education intervention.

Results. The majority (55.2%) of the respondent interns were hostellers. There was a significant increase in the knowledge ($p<0.001$), healthy attitude ($p<0.001$), and healthy practice ($p<0.001$) concerning junk food intake following health education intervention.

Conclusion. Routine repeated sessions promoting health should be implemented in the medical curriculum in order for our future physicians to live a long healthy life as well as to set a good example

Keywords. attitude, junk foods, knowledge, MBBS interns, practice

Introduction

Public health interventions aimed at improving health often involve promoting healthy lifestyle by addressing the behavioral risk factors in the general population. Giving advice and educating the patient is viewed as a professional responsibility by all general practitioners and are expected by the patients.[1] It has been observed that if physicians do not engage in these healthy behaviors, they are less likely to encourage such behaviors in their patients.[2] Junk foods are defined as any of various pre-packaged snack foods that are high in calories but low in nutritive value. The term 'Junk food' was coined by Michael Jacobson, director of the Center for Science in 1972 in the public interest who wanted to raise pub-

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lic attention about the issue of foods with a high caloric value and a low nutritional value. Junk food contains high level of refined sugar, white flour, trans fat, polyunsaturated fat, salt, and numerous food additives such as monosodium glutamate (MSG) and tartrazine, and lacking in protein, vitamin, and fiber. Junk food is popular because of their simplicity of manufacture, consumption, their taste and they have a long shelf life which may not require refrigeration.[3,4] The prevalence of overweight has risen in India from 2 to 17.1%.[5] The fundamental cause of obesity is an energy imbalance between calories consumed and calories expended. Excessive intake of junk food, lesser intake of fruits and vegetables and lack of regular physical exercise are the major causes for obesity and overweight. Junk food is a quick unhealthy food, which is easy to be made and to be consumed. It lacks nutritional value and is a caloric dense. Junk food is rich in refined sugar, white flour, polyunsaturated fats, salts, and numerous food additives, but low in protein, vitamins and fibers.[6] Junk food cause cerebrovascular accidents, systemic hypertension, type II diabetes mellitus, angina, myocardial infraction, raised LDL cholesterol levels, and colon cancer. It also leads to weight gain and obesity.[7] University life creates a different environment for students with little time for meal preparation, planning, and eating. Students may have the feeling of independence, with preference for eating whenever they want.[8] Youth consume junk food meals more than older people.[9,10] Taste, time constrains, and costs are considered the main predisposing factors that make medical students consume junk food.[11]

Aim

Given the significant potential for negative outcomes to a physician's own health as well as the health and safety of their patients, examination of the acculturation process about the development of related health-promoting/risking lifestyle patterns over the continuum of medical training is critical to the improvement of the health care delivery system. Hence, this study was done to evaluate the effect of health education intervention on the knowledge attitude and practices regarding junk food consumption among MBBS interns at tertiary care center in Chennai, India.

Material and methods

This was a quasi-experimental (before and after intervention) study conducted among all the 105 interns of both genders at a tertiary care hospital in Chennai, India from January to March 2023 using a self-administered semi-structured questionnaire. After getting approval from the Institute Ethical Committee, (IEC approval No: 68/IEC/GOMC/2022) data collection was started. The nature and purpose of the study was explained to the interns and a written informed consent was obtained, confidentiality was ensured and data was collected using a self-administered semi-structured questionnaire.

Study procedure

A questionnaire was prepared after extensive review of the literature by database searches from Google Scholar, Medline (PubMed), Academic search Complete (EBSCO host) and Medline (EBSCOhost), and Cochrane online library. These were meticulously searched for quality research literature published in English from 2001–2022 using the terms junk food, medical students, knowledge, attitude and practices, and health education. The 4-section semi structured questionnaire with a set of sociodemographic questions, 10 knowledge measuring questions, 8 attitude measuring questions and 3 practices assessing questions were used. A knowledge component dealt with an in-depth understanding of a medical intern about junk food, its composition, and its ill effects. Whereas the attitude component investigated how junk foods were perceived in an intern's point of view. The practices section assessed the frequency, energy consumption in kilocalories by dietary recall method and amount of money spend on junk food in one week. The questionnaire was pretested on 10 interns who were also part of the study sample.

Data collection and analysis

The study was conducted in two phases. Baseline data on knowledge attitude and practices regarding junk food consumption among interns were collected using a pretested semi-structured questionnaire. All the interns were assembled into three groups over a period of one week. On completion of the questionnaire, health education regarding junk food consumptions its ill effects, healthy alternatives were given in a lecture session which lasted for two hours. Health education IEC material was also distributed via online platforms. Post intervention data was collected using the same semi structured questionnaire two months after the intervention and was compared with the baseline data.

About 105 interns were given semi structured questionnaires. The data was analyzed according to the scoring pattern. Based on scores allotted to each question in the pre and post intervention questionnaire, total scoring for each component and total score of pre and post intervention responses were calculated. This EXCEL was fed into IBM SPSS software Version22 for data analysis (Armonk, NY, USA). Total scores after both pre and post intervention was compared using Wilcoxon Signed Rank Test and percentage of increase in score was calculated for everyone.

Scoring pattern of questionnaire

– the knowledge component comprises of: 10 multiple choice questions with single correct answers. Each question carries 1 mark with no negative marks,

- the attitude component comprises of 8 questions. They were multiple choice questions with options in the form of Likert scale as Strongly disagree, disagree, neutral, agree and strongly agree. They were scored as 5,4,3,2,1 marks according to healthy practice to unhealthy practice respectively,
- the practice component had 3 MCQS with single option with options in the form of Likert scale graded 4,3,2,1 according to healthy practice to unhealthy practice respectively.

Results

A total of 105 interns participated in this study. Table 1 shows the sociodemographic characteristics of the respondents. Majority (84.8%) of them are in the age range of 22-25 years, followed by (14.3%) in age range of more than 25 years. Majority of the interns were female (51.5%) with 64.8% of participants residing in urban areas. About 44.8% were hostellers.

Table 1. Socio-demographic characteristics of the participants

Variable	Categories	Frequency	Percent
Age in years	18 to <22	1	0.9
	22 to <25	89	84.8
	≥25 years	15	14.3
Gender	Male	52	49.5
	Female	54	51.5
Residence	Rural	37	35.2
	Urban	68	64.8
Current place of stay	Day scholar	47	44.8
	Hostel	58	55.2

Table 2. Comparison of scores before and after intervention*

	Change in scores		
Component	Pre-Intervention median score	Post-Intervention median score	p*
Knowledge	7 (5–8)	9 (9–10)	<0.001
Attitude	16 (14–17)	23 (22–25)	<0.001
Practice	7 (6–9)	11 (10–11)	<0.001

* An analysis was done by Wilcoxon Signed rank test

Table 2 shows the comparison of knowledge, attitude and practice scores before and after intervention. There was a significant (p<0.001) increase in the median knowledge score after intervention. There was a drastic change in median score of attitudes towards junk food intake from 16 to 23 which was also found to be statistically significant (p<0.001). The healthy practice of avoiding junk food also improved as there was a significant increase (p<0.001) in the practice score. Overall score also improved significantly (p<0.001) following health education intervention.

Figures 1 to 6 give a schematic representation of the change in knowledge, attitude and practice scores of junk food intake by the interns before and after health education.

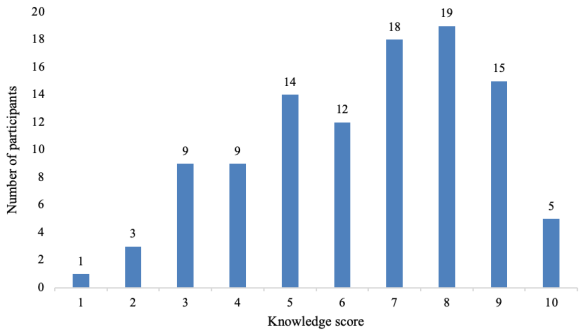

Fig. 1. Pre-test knowledge scores

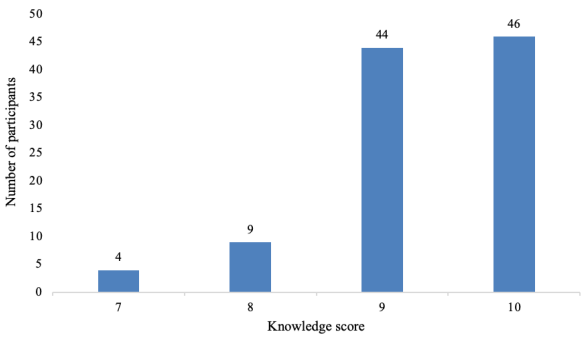

Fig. 2. Post-test knowledge scores

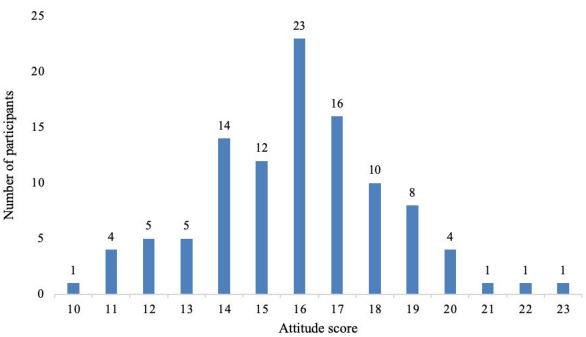

Fig. 3. Pre-test attitude scores

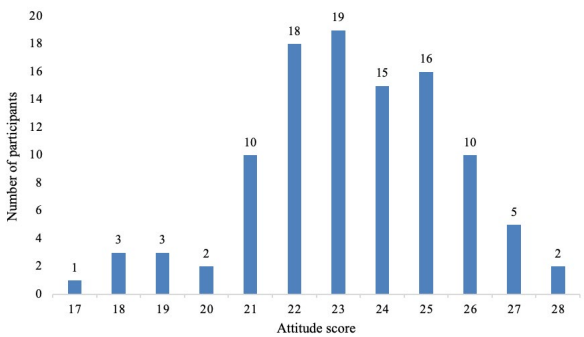

Fig. 4. Post-test attitude scores

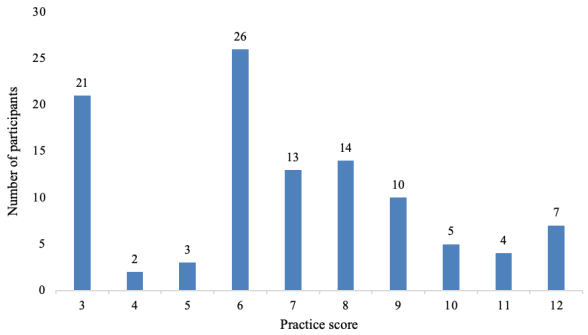

Fig. 5. Pre-test practice scores

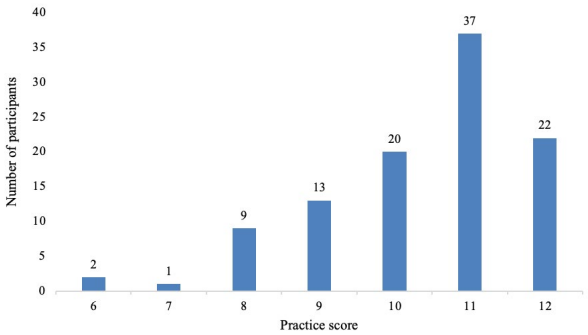

Fig. 6. Post-test practice scores

Discussion

This study showed that there was a significant increase in knowledge, healthy attitude and healthy practice towards junk food intake. This finding was also replicated in previous studies. In a study done among higher secondary school students in Himachal Pradesh, mean post-test attitude score 75.40 was significantly higher than the mean pre-test attitude score 64.18. The knowledge and attitude among students were significantly improved in the study.[12] The results of our investigation were consistent with those of related research carried out by Yadav B et al., Amoldeep et al., and Mishra R et al. among college going students.[13-16] Several studies conducted among school students by Poor Abdollahi et al., Vakili et al., Choobineh et al., Mazloomi et al., and Hosseini et al., Singh UK et al., Hajivandi L et al. also give similar findings.[17-23] These findings demonstrated a significant increase in knowledge, attitude, and performance regarding the consumption of junk food following the intervention; this finding points to the beneficial effects of education on enhancing knowledge, attitude, and performance in reducing junk food intake. The results of Pour Abdollahi and Vakili et al. support similar findings; however, the latter study's finding that the participant's performance score increased to a non-significant degree differs from the current investigation.[17,18] Additionally, research by Chobineh et al. supported the impact of education on students' performance and understanding in the area of eating.[19] These outcomes are also consistent with the findings of a 2003 study conducted by Hoffman et al. on 70 male and female guidance school students over the course of five weeks in an effort to increase fruit and vegetable consumption.[24] In order to improve children's knowledge and attitudes about fruits and vegetables, Heidari et al. used education on diet in their study.[25] They did this by employing educational resources such as newsletters designed specifically for children, parents, and teachers. The participant's knowledge and attitude toward fruit intake significantly improved nine months after the intervention, according to the researchers. These variations can be attributed to different study populations our being medical community already well educated regarding the junk food consumption, settings, designs, differences in the tools used to measure the KAP and methods of data collection.[26,27] Moreover, differences in the performance of health systems in different countries could also explain the differences. There is a dramatic transformation in an intern's dietary patterns, most notably an increase in consumption of processed foods such as hamburgers, cheeseburgers, deep-fried chicken, french fries, pizza, donuts, carbonated drinks etc. Several studies have shown that adolescents staying away from home are associated with increased consumption of fast food with high calorie intake, poorer diet quality, finally ending up in weight gain. With day- by-day increase in the number of fast-food outlets, and online food delivery apps and above all peer pressure our future medical practitioners are themselves on the path of metabolic syndrome. High salt content foods can be acting as addictive substances that stimulate dopamine receptors in brain, leading to increase in craving and hunger.[28,29] It leads to increase in appetite, calorie consumption, overeating, obesity, and related illnesses. Many a times despite being medicos, they are not aware about the high calorie content of such items since it is not easily accessible in streetside fast-food outlets. In addition to increased genetic and environmental susceptibility to diabetes mellitus, hypertension, coronary heart diseases, poor eating habits seals one's fate.

Study limitations

There are some limitations in our study. The duration of the intervention was short. The study was limited to a single set-up and hence may not be representative of all the MBBS interns in the state or the country. Moreover, the study was done without a control group and hence the placebo effect could not be ascertained.

Conclusion

This study revealed that there was a significant improvement in the attitude knowledge and practices among regarding health hazards of junk food after implementation structured teaching program. Hence routine repeated health promoting sessions should be implemented in medical curriculum in order for our future physicians to live a long healthy life as well as set a good example.

Declarations

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Author contributions

Conceptualization, B.M., A.M., R.R., R.K., M.U.V.R. and K.S.; Methodology, B.M. and A.M.; Software, B.M. and K.S.; Validation, B.M., A.M. and R.K.; Formal Analysis, B.M. and M.U.V.R.; Investigation, B.M. and R.R.; Resources, B.M. and A.M.; Data Curation, B.M., A.M. and K.S.; Writing – Original Draft Preparation, B.M., A.M. and K.S.; Writing – Review & Editing, B.M. and K.S.; Visualization, R.R.; Supervision, R.K., M.U.V.R. and K.S.; Project Administration, A.M. and R.R.;

Conflicts of interest

The author declares no conflicts of interest.

Data availability

Data will be made available on request.

Ethics approval

Ethical approval obtained from the Institutional Ethics Committee, Government Medical College, Omandurar Government Estate, Chennai (IEC approval No: 68/IEC/GOMC/2022).

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