ISSN: 0976-3031

Available Online at http://www.recentscientific.com

International Journal of Recent Scientific Research
Vol. 6, Issue, 3, pp.3203-3207, March, 2015

International Journal of Recent Scientific Research

RESEARCH ARTICLE

AWARENESS OF HEALTH CONSEQUENCES OF JUNK FOODS AMONG MEDICAL STUDENTS

Thamarai R[1]*, Sivakumar K[2] and Kalavathy Ponniraivan[3]

[1,3]Department of Biochemistry, Chennai Medical College & RC, Irungalur, Trichy
[2]Department of Medicine, Chennai Medical College & RC, Irungalur, Trichy

ARTICLE INFO

Article History:

Received 14th, February, 2015
Received in revised form 23th, February, 2015
Accepted 13th, March, 2015
Published online 28th, March, 2015

Key words:

Globalization, Metabolic syndrome, Obesity, Overweight, Urbanization.

ABSTRACT

Junk food tastes good, but the effects on the health is detrimental. Junk foods have become a prominent feature of the diet of youngsters, especially in the developing country. The health problems that stem from overweight and obesity can shorten the life span. Future medical practitioners should know that these kinds of eating habits will create nutritional deficiencies along with weight gain which ultimately ends in metabolic syndrome. We planned to conduct a survey to determine the level of awareness regarding the commercially processed food and drinks among the medical students. This cross sectional observational study included the sample size of 300 medical students (mean age 21.5 ± 2.5 years). They were provided with a list of questions aimed at evaluating their knowledge, awareness of junk foods and its adverse effects. The analysis showed that 67 % of students were unaware of the fact that artificially added phosphate, in the form of a preservative, is routinely added in processed soft drinks. Among the surveyed population, 46.3% of students consumed 1-5 cans of soda drinks per week, 29.7% students reported the frequency of eating pizza per week may vary. 73 % prefer these kinds of foods for its taste and 50% choose the junk foods because of branded shops. Surprisingly only 12.3 % had the habit of seeing list of ingredients on the label. This study concludes that the medical students are partly aware of the lethal effects of excessive consumption of the junk foods and soft carbonated drinks; they are obsessed with the taste and habituated. This study highlights the need for educational program to raise the awareness of the health risks produced by intemperate consumption of junk foods.

INTRODUCTION

Junk food tastes good, but the effects on the health is detrimental. Junk foods have become a prominent feature of the diet of youngsters in the developing country. The junk food is also called fast food, because it is easy to prepare, cheap and tasty. But these foods have many harmful effects on health. Many youngsters have adapted to such changing fast-food trend culture. Such changes are accompanied by dramatic transformations in people's dietary patterns, most notably an increase in the consumption of processed foods such as hamburgers, cheeseburgers, deep-fried chicken, deep-fried potatoes/french fries, pizza and donuts (Stuckler D, *et al*. 2012). Fast-food consumption seems to be linked quite closely with soft-drink consumption. The majority of the foods are energy-dense foods, which have high fat levels and calorific value. Several studies have found adolescents staying away from home is associated with increased consumption of fast foods with high calorie intake, (Nicole Larson *et al* 2011, Ma Y, Bertone E *et al* 2003 and Paeratakul S, Ferdinand D *et al*) poorer diet quality (Ma Y, Bertone E *et al* 2003, Smith K, McNaughton S *et al* 2009) which finally ends up in weight gain (Pereira M, Kartashov A *et al* 2005). However, in a recent ecological analysis, the density of Subway outlets, used as a marker of fast food penetration, was positively associated with the prevalence of obesity across 26 advanced economies (De Vogli R *et al*., 2011). Some studies have mentioned that the rising consumption of unhealthy foods has been facilitated by trade liberalization (Thow AM, Hawkes C. *et al* 2009) and foreign investment in the food and beverage industries, (Rayner G *et al* 2006, Dreher A *et al* 2008) which have resulted in the proliferation of large transnational food companies (Hawkes C *et al* 2005). Research has found that dietary patterns during young adulthood at fast-food restaurants occur at an average of two to three times per week (Niemeier HM *et al*, 2006). Another cross-national ecological analysis revealed an association between soft drink consumption and higher rates of overweight and obesity (Basu S, McKee M *et al* 2013). However, most adolescents may not be acquainted of the high calorie content of such items because the information is often not easily accessible in fast-food shops. High salt content foods can be act as addictive substances that stimulate the dopamine receptors in the brain, leading to increase in craving and hunger. It leads to increased appetite, calorie consumption, overeating, obesity and related illnesses. (James A. Cocores, *et al* 2008). Rapid changes in diet with increasing consumption of

Corresponding author:* **Thamarai R
Department of Biochemistry, Chennai medical college & RC, Irungalur, Trichy.

oil, animal fats and trans fats and decreasing consumption of vegetables and fruit are the factors fast food related health problems. Nowadays, the familial risks of developing Diabetes, Hypertension, Obesity and Coronary Artery Disease are precipitated by consuming high calorie fast foods. Renal calculi are more prevalent in individuals consuming phosphate containing soft drinks. Unhealthy and poor dietary habits are highly prevalent in the teen age group medicos. Future medical practitioners should know that these kinds of eating habits create nutritional deficiencies along with weight gain which ultimately ends in metabolic syndrome. We planned to conduct a survey to determine the level of awareness, knowledge and attitude towards commercially processed food and carbonated drinks among medical students. The objectives of the study were to elicit predisposing factors that make medical students to consume junk foods and to assess the levels of awareness regarding the adverse effects of junk foods among them.

MATERIALS AND METHODS

This was a cross-sectional, questionnaire-based survey conducted in a medical college after getting approval from the Institutional Ethics Committee. We randomly selected 300 medical students who are currently undergoing MBBS course. The average age of the medical students was 21.5 ± 2.5 respectively. Out of the total 300 students, 178 were male, 122 were female. All the students were participated voluntarily on the assurance of anonymity, and none refused to answer the survey questions. This survey was conducted during March 2014. They were explained about the nature and purpose of the study, and necessary consent was obtained from each individual. The study instrument was a self-developed, pre-validated, a semi - structured questionnaire which includes seventeen questions. To develop the questionnaire, we consulted experts in nutrition to assess the validity and suitability of our questions and adjusted the questionnaire accordingly. In designing the questionnaire, we categorize the questionnaire into five; to examine student's knowledge regarding the composition of junk foods, to analyze their attitude and behavior of the youngsters towards consumption of fast foods like hamburgers, pizza and carbonated soft drinks, to assess the factors which provoke them to consume processed fried foods, to review the awareness and to evaluate the opinion of health education towards junk foods and its health impacts. The questions included were multiple choice questions yes/no questions regarding knowledge of certain health effects of fast foods and. questions with yes/no answers regarding the awareness of eating certain fast foods and opinion about health education of healthy nutrition. This questionnaire was administered in paper format. The young medicos were given approximately twenty minutes to complete the questionnaire. Data was compiled in an Excel worksheet, and it was analyzed for frequency (Number) and response (Percentage). Chi-square test was also applied and Alpha error was set at a 5% level. Data was analyzed using Statistical Package for the Social Sciences 17 software.

Table 1 Demographics of medical students in Chennai medical college

Parameter	Frequency (n=300)	
	No	%
Gender		
Male	178	59
Female	122	41
Age (years)		
19-21	155	51
22-24	145	49
Educational status		
I year	80	26.7
II year	75	25
III year	70	23.3
Final year	75	25

RESULTS

To determine the levels of knowledge, awareness and attitude of future young doctors regarding the junk food and carbonated soft drinks, we conducted a survey among medical students currently enrolled in medical college. Healthcare professionals should be fully aware of foods rich in salt & trans fatty acids such as pizza, hamburgers, fried chicken, chips and carbonated soda drinks in order to manage the increasing worldwide problem of obesity related disorders. The questionnaire consists of seventeen separate questions. To make it convenient we divided the questions in five categories. Table 1 shows the demographics of medical students.

Table 2 Knowledge of composition of junk foods

	Frequency (No)	Response (%)	χ^2	p value
Junk food means				
Fiber rich food	17	5.7		
High calorie food without nutritive value	280	93.3	127	0.000
Food having high nutritive value	3	1		
Composition of junk food				
High in sodium, Refined sugar, White flour, Trans fatty acid, salt, food additives	53	17.7		
Lacking in proteins, vitamins, essential minerals and fiber	50	16.5	127	0.000
Both	185	61.7		
None of the above	12	4		
Composition of soft drinks				
Phosphate	100	33.3		
Low fructose corn syrup	137	45.7	127	0.000
Antioxidants	57	19		
Proteins	6	2		
Awareness about ajinimotto salt				
No	203	67.7		
Yes	77	25.7	127	0.000
No comments	20	6.7		

Among 300 medical students, 178 and 122 were male and female respectively.

Table 3 Habit of consumption of junk foods

	Frequency (No)	Response (%)	χ^2	p value
Canned drink per week				
1-5 cans	139	46.3	211	0.000
6-10 cans	12	4		
varies	12	4		
None	137	45.7		
Pizza per week				
1-2 times	36	12	1.48	0.000
3-4 times	20	6.7		
varies	89	29.7		
none	155	51		
Preferred place for eating snacks				
Cinema theatres	69	23	38.43	0.000
Watching Television	62	20.7		
Evening with tea	24	8		
No habit	54	18		
No comments	90	30		
Junk foods buying for friends				
Yes	196	65.3	159	0.000
No	86	28.6		
No comments	18	6.1		
Amount spending per month				
< Rs.100	106	35.3	76.1	0.000
< Rs.200	119	39.7		
< Rs.500 and above	36	12		
< Rs.1000 and above	39	13		

Table 4 Choice of junk foods and factors influence the choice

	Frequency (No)	Response (%)	χ^2	p value
Choice of junk food				
Fried chips, Fried food items	94	31.3	90	0.000
Pizza, burger items	63	21		
Chocolates, sweets	31	10.3		
All of the above	97	32.3		
None	15	5		
Choice of junk food based on				
Taste	219	73	212	0.000
quick service	35	11.7		
Inexpensive	12	4		
Attractive appearance	12	4		
Advertisement	22	7.3		
Choice of restaurants based on				
Hygiene	62	20.7	108.6	0.000
Branded shops	151	50.3		
Nearby Shops	33	11		
Taste	54	18		

Table 5 Awareness about junk foods consumption

	Frequency (No)	Response (%)	χ^2	p value
Awareness of side effects				
yes	170	56.5	76.5	0.000
no	80	26.8		
no comments	50	16.7		
Habit of seeing list of ingredients on the label				
Yes, always	37	12.3	334	0.000
Sometimes	212	70.7		
No, I am not aware	27	9		
No, I am not bother	24	8		
Calorie of snacks				
>200 calories per serving	148	49.3	158	0.000
>100 calories per serving	107	35.7		
>75 calories per serving	24	8		
>50 calories per serving	21	7		

Medical students in age group of 19-21 years and 22-24 years were 155 and 145 respectively. Table 2 shows the knowledge of composition of junk foods among young medicos. Based on this survey, 93.3% of medical students were aware of the definition and 61.7 % were aware of the composition of the junk foods. 67 % of students were unaware of the fact that artificially added phosphate, in the form of a preservative, is routinely added in processed soft drinks. Moreover, 67.7% were not at all aware of the ajinimotto salt, monosodium glutamate. Table 3 shows the habit, attitude and behavior of young medicos towards junk foods. Among the surveyed population, 46.3% of students consumed 1-5 cans of soda drinks per week, 29.7% students reported the frequency of eating pizza per week may vary. However, they prefer to eat snacks in theaters (23%) and sitting in front of the TV (20%). 65% mentioned that they buy for their friends. 39.7 % of students spending less than Rs. 200 per month. At the same time, 13 % students have mentioned the amount may exceed Rs. 1000 and above per month. Table 4 shows the choices of junk food habits among medical students. 31.3% of the students choose fried chips as their choice, while 32.3 % like to eat all the items like pizza, burgers, chocolates, sweets, fried chips etc. 73 % prefer based on the taste and 7.3 % elect because of the advertisement and 11.7 % choose because of the quick service. 50 % of the young medicos choose the fast food restaurants because of branded shops. Table 5 shows the awareness regarding junk foods. 26.8 % were not aware of side effects. Surprisingly only 12.3 % had the habit of seeing list of ingredients on the label. 51 % wrongly answered for the calorie of snacks per serving. Table 6 shows the assessment of health education among young medical students.86.3 % choose the need of health education among society and 57 % showed interest to attend lectures.

Table 6 Opinion about health education

	Frequency (No)	Response (%)	χ^2	p value
Need of promotion of health education				
Yes	259	86.3	379	0.000
No	23	7.7		
No comments	18	6		
Interested in lectures regarding junk foods				
Yes	171	57	108.6	0.000
No	90	30		
No comments	39	13		

DISCUSSION

This study described the knowledge, awareness and attitude of medical students towards junk foods and its impact on health. 67 % of students were unaware of that phosphate acts as a preservative of carbonated soft drinks. Phosphate-containing soda drinks can influence functionality of different organ systems, as was first reported more than a century ago (Haig 1889). In the studies of (Yoshiko Shutto, Michiko Shimada *et al*), only 11.6% of these students were aware of the presence of phosphate in commercially processed food, such as hamburgers and pizza. Serum uric acid levels increased with increasing sugar-sweetened soft drink intake (Choi JW1, Ford ES, Gao X, Choi HK, 2008). 46.3% of students consumed 1-5 cans of soda drinks per week, 29.7% students reported the frequency of eating pizza per week may vary. Those who ate fast food more than twice a week were more likely to gain weight and develop insulin resistance (Vartanian LR, Schwartz MB, 2007). In this study, (23%) of students prefer to eat snacks in theaters. This study results have found that consuming chips and popcorns in adolescents had been associated more during watching movie, which is consistent with studies of (Jeffery RW, French SA, *et al*1998) and Kotz K, Story M, *et al*. Moreover, nowadays binge eating in theaters is becoming fascinating and trendy. 39.7 % and 13 % of students spending less than Rs. 200 and Rs. 1000

and above per month. 73 % prefer the fast foods based on the taste and 7.3 % elect because of the advertisement and 11.7 % choose because of the quick service. This is consistent with numerous studies the food advertisements affects food choices, preferences, attitudes and nutritional knowledge (Storey & French, 2004). 50 % of the young medicos choose the fast food restaurants because of branded shops. Young medicos indicated they liked fast-food restaurants because they are convenient and attractive places to meet with friends; and that advertising about the branded shops was influential motivators as suggested by Saowaphak *et al*, 1995. 73.2 % of the students were aware of side effects. Even though they are well aware of side effects, most of them give much importance to taste and deliciousness. Therefore, in order to promote healthy food, the food manufacturer should produce healthy foods with good taste and an attractive presentation. Surprisingly only 12.3 % had the habit of seeing list of ingredients on the label. To date, most of the young medicos have not focused specifically on the ingredients of the fried foods and canned soft drinks. 51 % wrongly answered for the calorie of snacks per serving. Calories must be posted clearly adjacent to the item name, using a font and format that are at least as prominent as item name. The high percentage of energy contributed by fried foods and their negative association with nutrient density emphasize the need for dietary guidance for young adults. Medical students will need to acquire the knowledge and skills regarding the food habits to assess and counsel the patients with obesity.

This study will create awareness of health problems related to eating junk foods among medical students. This survey will provide a pathway for health education to broaden for a change towards good eating habits and adoption of healthy living. Also, it is prepared to conduct special programs on healthy living for young medical students who will be the social guardian of the health of the community in future.

CONCLUSION

Finally, the results of this study highlight two important points: medical students are partly aware of the risks related to prolonged consumption of high sodium, trans fatty acids rich junk foods and artificially added phosphate rich soft carbonated drinks. The present study on future doctors revealed that there is a gap between the awareness pertaining to a nutritious diet and the practice of consuming. So, the Interventional steps are needed to increase the knowledge of a balanced diet along with the hazards of an unbalanced diet. Medical colleges could provide the nutritionist not only for the patient's health care and also to impose dietary guidelines for medical students to raise the awareness of the risk posed by dietary items with hidden ingredients which will affect the health of the society.

Limitations

The study is limited to a single center. This study may not be generalized for all medical students, as the study takes part in only one college and the proportion of the participants are not divided according to year wise. In future studies, it is recommended to expand the framework to all adolescents residing in both urban and rural areas to obtain a better understanding of the junk food intake.

Suggestion

It is optimal to design an awareness program regarding lethal effects of consumption of junk foods among the schools and colleges.

References

Anne Marie Thow, Corinna Hawkes. The implications of trade liberalization for diet and health: a case study from Central America. Global Health. 2009; 5: 5.

Basu S, McKee M, Galea G, Stuckler D. Relationship of soft drink consumption to global overweight, obesity and diabetes: a cross-national analysis of 75 countries. *Am J Public Health*. 2013:e1–7.

Cocores JA1, Gold MS. The Salted Food Addiction Hypothesis may explain overeating and the obesity epidemic. Med Hypotheses. 2009 Dec; 73(6):892-9.

David Stuckler mail, Martin McKee, Shah Ebrahim, Sanjay Basu. Manufacturing Epidemics: The Role of Global Producers in Increased Consumption of Unhealthy Commodities Including Processed Foods, Alcohol, and Tobacco. PLoS Med 9(6): e1001235.

De Vogli R, Kouvonen A, Gimeno D. 'Globesization': ecological evidence on the relationship between fast food outlets and obesity among 26 advanced economies. Crit Public Health 2011; 21: 395-402.

Haig A. Influence of phosphate of soda on the excretion of uric acid and some of the conditions which prevent its action. Med Chir Trans. 1889; 72:399–406.

J Ren Nutr. Jul 2007; 17(4): 264–268. Saud Butt, MD, Janeen B. Leon, MS, RD, LD, Carol L. David, MS, RD, LD, Henry Chang,1 Sanbir Sidhu,1 and Ashwini R. Sehgal, MD. The prevalence and nutritional implications of fast food consumption among hemodialysis patients. *J Ren Nutr. Jul 2007*; 17(4): 264–268.

Jennifer L. Harris, John A. Bargh, and Kelly D. Brownell. Priming Effects of Television Food Advertising on Eating Behavior. Health Psychol. Jul 2009; 28(4): 404–413.

Larson N1, Neumark-Sztainer D, Laska MN, Story M. Young adults and eating away from home: associations with dietary intake patterns and weight status differ by choice of restaurant. *J Am Diet Assoc*. 2011 Nov;111(11):1696-703.

Ma Y1, Bertone ER, Stanek EJ 3rd, Reed GW, Hebert JR, Cohen NL, Merriam PA, Ockene IS. Association between eating patterns and obesity in a free-living US adult population. *Am J Epidemiol*. 2003 Jul 1; 158(1):85-92.

Nicole Larson, Dianne Neumark-Sztainer, Melissa Nelson Laska, Mary Story. Young Adults and Eating Away from Home: Associations with Dietary Intake Patterns and Weight Status Differ by Choice of Restaurant. *J Am Diet Assoc*. 2011 Nov;111(11): 1696–703.

Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast food consumption and breakfast skipping: predictors of weight gain from adolescence to adulthood in a nationally representative sample. *J Adolesc Health*. 2006 Dec; 39(6):842-9.

Paeratakul S1, Ferdinand DP, Champagne CM, Ryan DH, Bray GA. Fast-food consumption among US adults and children: dietary and nutrient intake profile. *J Am Diet Assoc*. 2003 Oct;103(10):1332-8.

Pereira MA1, Kartashov AI, Ebbeling CB, Van Horn L, Slattery ML, Jacobs DR Jr, Ludwig DS. Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis. Lancet. 2005 Jan 1-7; 365(9453):36-42.

Roberto De Vogli, Anne Kouvonen,b and David Gimenoc. The influence of market deregulation on fast food consumption and body mass index: a cross-national timeseries analysis. Bull World Health Organ. Feb 1, 2014; 92(2): 99–107A.

S A French, R W Jeffery, M Story, P Hannan, and M P Snyder. A pricing strategy to promote low-fat snack choices through vending machines. *Am J Public Health*. 1997 May; 87(5): 849–851.

Sam-ang Seubsman, Matthew Kelly, Pataraporn Yuthapornpinit and Adrian Sleigh. Cultural resistance to fast-food consumption? A study of youth in North Eastern Thailand. *Int J Consum Stud*. Nov 2009; 33(6): 669–675.

Thow AM, Hawkes C. The implications of trade liberalization for diet and health: a case study from Central America. Global Health. 2009; 5:5.

Vartanian LR, Schwartz MB and Brownell KD. Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. *Am J Public Health*. 2007;97: 667-75.

How to cite this article:

Thamarai R *et al*., Awareness of Health Consequences of Junk Foods among Medical Students. *International Journal of Recent Scientific Research Vol. 6, Issue, 3, pp.3203-3207, March, 2015*

****