International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

Knowledge, Attitude and Practices of Professionals Regarding Food Intake under Stress

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Abstract: ***Nutrition plays a critical role in maintaining good health specifically in stress situations. Nutrient choices under stress manifest itself in two ways- inclination towards food or aversion from food. The present study was conducted to assess the knowledge, attitude and practices of professionals regarding food intake under stress. The locale selected for the study was district Rohtak, Haryana, India. Purposive random sampling technique was used to select one hundred three professionals i.e. doctors (n=22), nurses (n=15), bankers (n=24) and professors (n=42). Data was collected by using questionnaire cum interview method. Nutritional knowledge level, attitude and practices regarding food intake on being stressed were analysed through a self-designed questionnaire. Supplied questionnaire contained the list of questions pertaining to food, nutrition, role of nutrients in stress and food as stress coping tool. Average nutritional knowledge level of all the professionals was high. Comparatively, doctors (M=20.27± 3.93) were on the top followed by professors (M=20.14± SD=3.78), bankers (M=20.04±2.76) and nurses (M=19.60±2.97). Analysis of variance further showed that the differences in the nutritional knowledge according to different profession were non-significant, F(3, 99)=0.12, p=0.95. A two-way eating behaviour was reflected in professionals while under stress: either inclination towards food or aversion from food. Food choices of respondents showed a diversion from healthier choices to unhealthier ones. Energy dense foods, ready-to-eat foods, preserved or processed foods were being preferred under stress.***

Keywords: Professionals, stress, nutrition, nutritional knowledge, food choices

1. Introduction

Good nutrition and health share an inseparable phenomenon with accentuated role in stress situations. Stress not only threatens the quality of life, but also endangers one's physical and psychological well being [4]. The life brings a lot of surprises putting us in devastating situations every day, succumbing to enormous stress leads to a disease [5],[1]. Rapid change of the modern working life is associated with increasing demands of learning new skills, need to adopt to new types of work, pressure of higher productivity and quality work, time pressure and hectic jobs are increasing stress among the workforce. Job stress can be defined as the harmful physical and emotional responses that develop when the demands of the job do not get compensated with the capabilities or resources of the worker [8]. Stress manifests itself in good ways or bad ways. Stress affects our physical health negatively [3]. The pituitary gland stimulates the release of corticosteroid- a stress coping hormone; but, if persist in the system for a prolonged period of time, suppresses the immune system [13]. Moreover, Job stress (from, for example, a low control and high-demand work environment) is linked with high BMI. Stress alters food choices in humans and shifts it toward energy-dense items that contain saturated fat and sugar [16]. Stress can influence eating patterns in human being. Stress changes overall food intake in two ways- under eating or over eating. Chronic stress seems to be associated with a greater preference for energy and nutrient-dense foods i.e. high in sugar and fat. Stress-induced eating may be one of the factors contributing to the obesity [14]. A well balanced diet can help the stress management process, by replenishing the important vitamins and minerals depleted by stress, thus provides more resistance to one's system in a war against negativity of stress [2]. These studies revealed the role of nutrition under stress. Nutritional knowledge about what to eat, how much to eat under stress, food as stress busting tool and its implementation help in preventing and coping stress. This study was conducted to understand the knowledge, attitude and practices of professionals regarding food intake under stress in district Rohtak, Haryana.

2. Methodology

- Locale for the study: The locale for the study was district Rohtak, Haryana, INDIA.
- Sample selection: The total sample size comprised of one hundred three professionals were selected from different fields i.e doctors (n=22), nurses (n=15), bankers (n=24) and associate professors (n=42) using snowball sampling technique.
- Data collection:

a) General information: General information was collected through questionnaire cum interview method. Information on personal, work & family profile, food habits and dietary intake was collected through self- structured questionnaire.

b) Nutritional Knowledge Assessment: Level of nutritional knowledge was assessed by using self-designed questionnaire comprising of thirty questions based on food, nutrition, role of nutrient in stress and food as stress coping tool.

- Statistical analysis of data: Data was statistically analyzed through SPSS 16.0. To assess the significant difference in nutritional knowledge levels of professionals, analysis of variance was carried out using one-way anova.

3. Results and Discussions

Table1: Distribution of respondents on the basis of dietary habits

Variables		Professionals				
		Doctors (n=22)	Nurses (n=15)	Bankers (n=24)	Professors (n=42)	Total (N=103)
Dietary Pattern	Vegetarian	11(50.00)	13(86.66)	21(87.50)	34(80.95)	79(76.69)
	Non-vegetarian	8(36.36)	01(6.66)	3(12.50)	5(11.90)	17(16.50)
	Ovatarian	3(13.63)	01(6.66)	-	3(7.14)	7(6.79)
Meal Pattern	<3	11(50.00)	7(46.66)	8(33.33)	7(16.66)	33(32.03)
	4-Mar	10(45.45)	8(53.33)	14(58.33)	33(78.57)	65(63.10)
	>5	01(4.54)	-	2(8.33)	2(4.76)	5(4.85)
Regularity of meals	Yes	13(59.09)	13(86.66)	20(83.33)	35(83.33)	81(78.64)
	No	9(40.90)	2(13.33)	4(16.66)	7(16.66)	22(21.35)
Skipping of meals	Breakfast	4(18.18)	1(6.66)	4(16.66)	4(9.52)	13(12.62)
	Lunch	5(22.72)	-	-	1(2.38)	6(5.82)
	Dinner	-	1(6.66)	-	2(4.76)	3(2.91)
Frequency of skipping meals	Daily	5(22.72)	2(13.33)	-	1(2.38)	8(7.76)
	Occasionally	17(77.27)	13(86.66)	18(75.00)	34(80.95)	82(79.61)
	Rarely	-	-	6(25.00)	-	6(5.82)
Reasons of skipping meals	Lack of time	18(81.81)	11(73.33)	14(58.33)	27(64.28)	70(67.96)
	Companionship	-	3(20.00)	-	2(4.76)	5(4.85)
	Dieting	4(18.18)	1(6.66)	9(37.50)	8(19.04)	22(21.35)
	Canteen food is more tastier	-	-	1(4.16)	2(4.76)	3(2.91)
Nibbling	Yes	9(40.90)	9(60.00)	4(16.66)	33(78.57)	55(53.39)
	No	13(59.09)	6(40.00)	20(83.33)	9(21.42)	48(46.60)
Frequency of nibbling	Before Lunch	5(22.72)	5(33.33)	01(4.16)	24(57.14)	35(33.98)
	After Lunch	4(18.18)	4(26.66)	3(12.50)	9(21.42)	20(19.41)
Fasting	Occasionally	4(18.18)	10(66.66)	15(62.50)	22(52.38)	51(49.51)
	Never	17(77.27)	5(33.33)	9(37.50)	20(47.61)	51(49.51)
Highly consumed Beverages	Tea/Coffee	8(36.36)*	5(33.33)*	12(50.00)*	32(76.19)*	57(55.33)*
	Others (Juices, buttermilk)	9(40.90)*	1(6.66)*	4(16.66)*	17(40.47)*	31(30.09)*

***Multiple responses**

Distribution of respondents on the basis of their dietary habits is summarized in Table 1. Most of the professionals were vegetarian (76.69%). Pattern of meals consumption per day indicated that more than two third (63.10%) of the respondents were consuming three to four meals per day (63.10%). Majority of respondents (78.64%) were having regular meals. Skipping of meals was common amid more than one fifth of the respondents (21.35%). Ensuing of data further revealed that nearly eighty per cent (79.61) of the subjects were in the habit of skipping meals occasionally. Commonly skipped meal was breakfast (12.62%), lunch (5.82%) and dinner (2.91%) by the respondents. The major reason for skipping the meals was lack of time (67.96%). More than one half of professionals (53.39%) reported nibbling between meals and frequency of nibbling was more often before lunch (33.98%). Almost fifty per cent (49.51%) professionals never practiced fasting while rest (49.51%) were in the habit of keeping fast occasionally. Preferably consumed beverages were tea/coffee (55.33%).

Table 2: Distribution of respondents on the basis of level of nutritional knowledge

Level of nutritional knowledge	*Doctors (n=22)*	*Nurses (n=15)*	*Bankers (n=24)*	*Professors (n=42)*
Low* (0-10)	0.00%	0.00%	0.00%	2.38%
Moderate* (11-20)	40.90%	53.33%	50.00%	33.33%
High* (21-30)	59.09%	46.66%	50.00%	64.28%

*Self-designed questionnaire

Table 2 revealed that nutritional knowledge of all professionals was good. Largely, professors (64.28%) had highest level of nutritional knowledge amongst all professionals. Nearly sixty per cent doctors (59.09%) and forty seven per cent nurses (46.66%) were having higher nutritional knowledge level (scored between 21 and 30), while one half of bankers (50.00%) fell in this category. A large number of respondents i.e. doctors (40.90%), nurses (53.33%), bankers (50.00%) and professors (33.33%) who scored between 11 and 20 had moderate level of knowledge. Very few professors (2.38%) scored below ten and fell in low nutritional knowledge level group. None of the professional from other fields fell in this category.

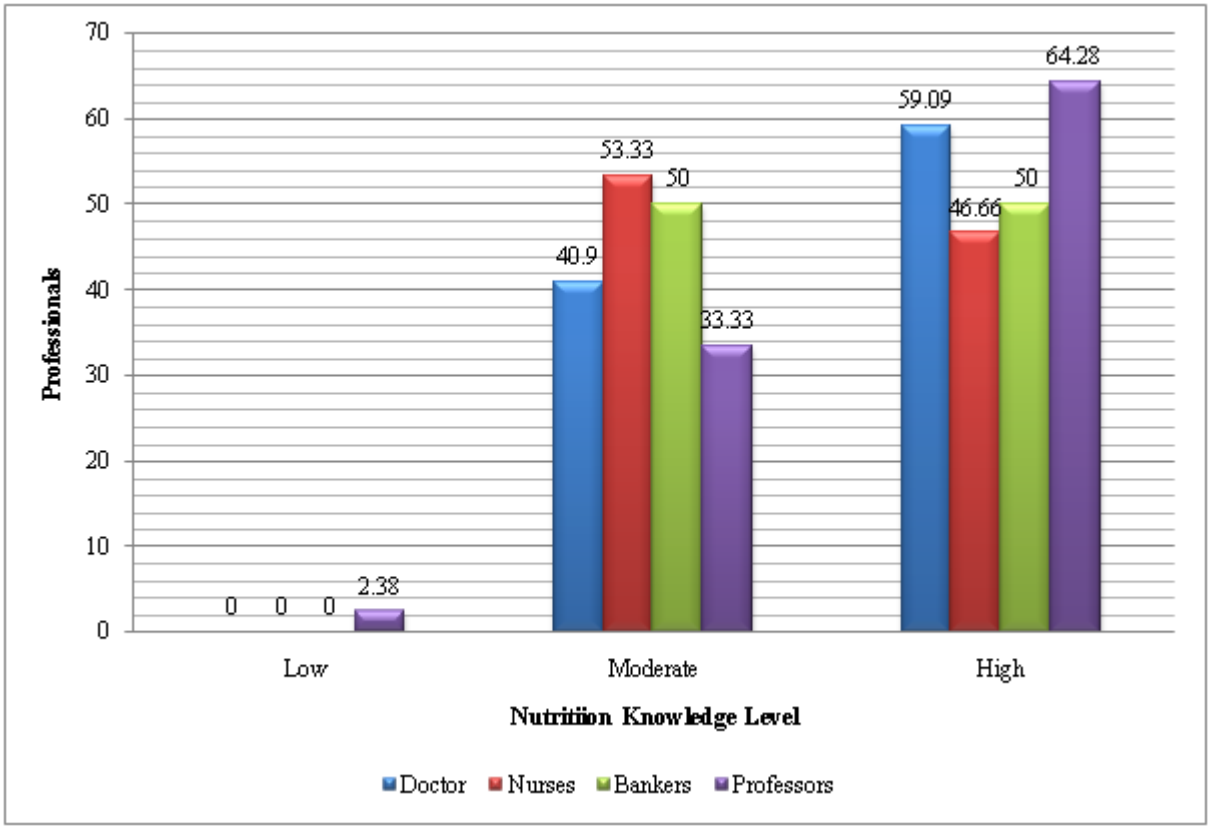

Figure 1: Distribution of respondents on the basis of nutritional knowledge level

All the subjects had quite good nutritional knowledge level (figure 1). Professors scored highest amongst all the subjects followed by doctors, bankers and lastly nurse. Maximum nurses followed by bankers, doctors and professors had moderate nutritional knowledge level. No other professional except few professors had low nutritional knowledge level. There were not major differences among the levels of nutritional knowledge of all subjects, it was quiet high.

Table 3: Mean nutritional knowledge score of professionals

Professionals	*N*	*Mean*
Doctor	22	20.27± 3.93
Nurse	15	19.60± 2.9
Banker	24	20.04± 2.76
Professor	42	20.14 ±3.78

The mean nutritional knowledge level of all the professionals was similarly very high (Table 3). Doctors (M=20.27± 3.93) were on the top followed by professors (M=20.14± SD=3.78) and Bankers (M=20.04±2.76). Nurses (M=19.60±2.97) scored lowest among all professionals.

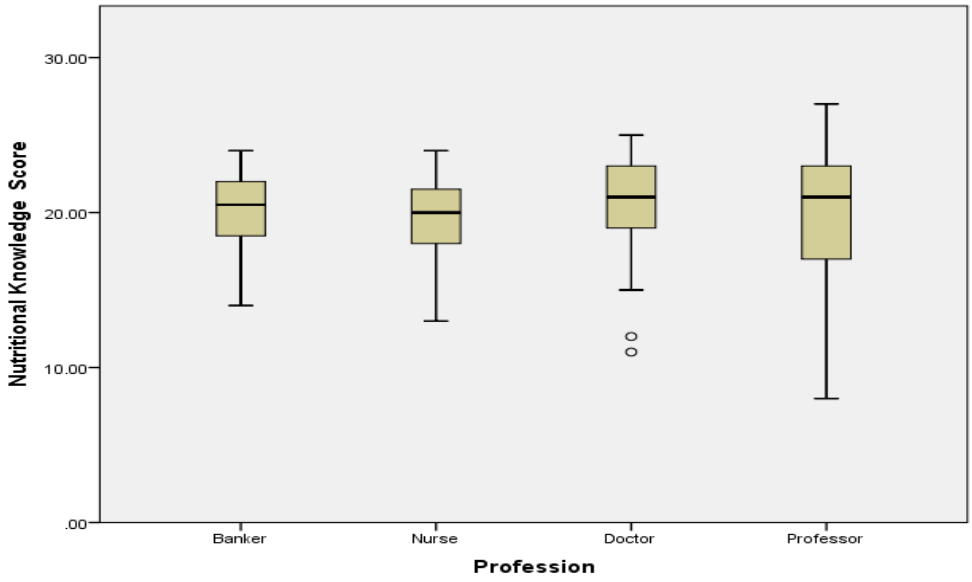

Figure 2: Mean nutritional knowledge level of professionals

Doctors had highest nutritional knowledge level among all the professionals and nurses had lowest. Representation in figure 2 revealed that there was not much difference among the nutritional knowledge level of professionals, it was almost similar (figure 2) and most of the professionals had good nutritional knowledge.

Table 4: Analysis of Variance of nutritional knowledge level among professionals

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.459	3	1.486	.122	.947
Within Groups	1208.065	99	12.203		
Total	1212.524	102			

The results of one-way ANOVA (Table 4) showed that at 0.05 level of significance there were no significant differences in the nutritional knowledge according the profession, F(3, 99)=0.12, p=0.95.

Table 5: Attitude of subjects towards food under Stress

Parameters	**Subjects**				
	Doctors	**Nurses**	**Bankers**	**Professors**	**Total**
Neutral	7(31.81)	13(86.66)	7(29.16)	20(47.61)	47(45.63)
High Inclination	6(27.27)	2(13.33)	5(20.83)	13(30.95)	26(25.24)
Complete Aversion	9(40.90)	-	12(50.00)	9(21.42)	30(29.12)

Table-5 represented the data pertaining to the attitude of subjects towards food under stress. Professionals either showed high inclination or completely aversion from food. High inclination towards food was observed in about one fourth professionals (25.24%) that comprised about thirty one per cent (30.95%), twenty seven per cent (27.27%), twenty one per cent (20.83%), thirteen per cent (13.33%) of professors, doctors, bankers and nurses respectively. Complete aversion towards food was showed by nearly one half of bankers (50.00%), 2/5th of doctors (40.90%) and 1/5th of professors (21.42%); in total by twenty nine per cent of professionals (29.12%). However, none of the nurses was reported to have complete aversion from food during stress. Subjects, who showed more inclination towards food consumed more of high energy refined food, highly sweetened products, more diuretics, ready-to-eat, instant food, processed and packaged products. Food choices of rest of the subjects (45.63%) remained unchanged i.e. they remain neutral towards food while stressed. A large chunk of nurses (86.66%) remained neutral for food followed by professors (47.61%), doctors (31.81%) and bankers (29.16%).

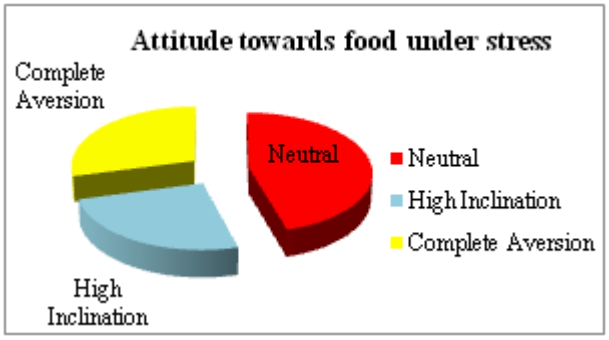

Figure 3: Attitude towards food under stress

Figure 3 represented the attitude of professionals towards food under stress which was reflected in two manners- high inclination towards food or complete aversion from food. Proportion of subjects showed complete aversion was higher than who showed inclination for food. Rest of the subjects remained neutral under stress i.e. neither eat more food nor abstain from food and consumed the regular meals.

Table 6: Food choices made by respondents under stress

Food	*Doctors*	*Nurses*	*Bankers*	*Professors*	*Total*
High energy refined foods	4(18.18)	1(6.66)	5(20.83)	12(28.57)	22(21.35)
Highly sweetened products	4(18.18)	1(6.66)	5(20.83)	5(20.83)	15(14.56)
Diuretics	3(13.63)	-	5(20.83)	10(23.80)	18(17.47)
Ready-to-eat foods	2(9.09)	-	5(20.83)	13(30.95)	20(19.41)
Processed or Preserved foods	2(9.09)	-	4(16.66)	8(19.04)	14(13.59)

* All Multiple Responses

The choices for food under stress were shifted from healthier to unhealthier ones (Table 6). On inclination towards food, respondents chose mainly high energy refined foods (21.35%) followed by ready-to-eat foods (19.41%), more of diuretics (17.47%), highly sweetened products (14.56%) and processed or preserved foods (13.59%).

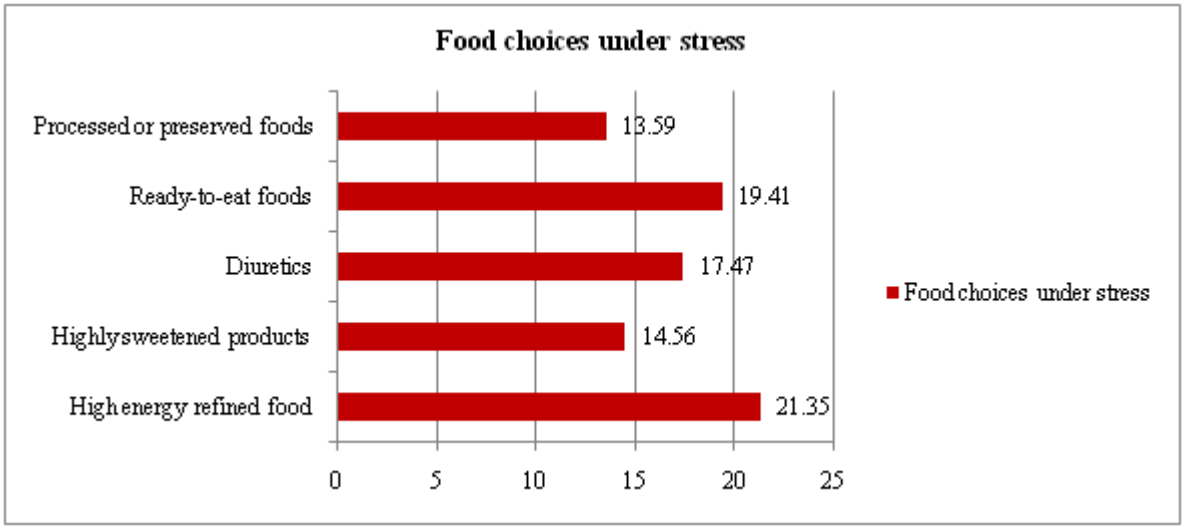

Figure 4: Food choices among professionals under stress

Various food choices made by professionals who had high inclination towards food i.e. eat more under stress (Fig 3). Refined foods rich in energy were mainly consumed followed by ready-to-eat foods, diuretics, highly sweetened products and processed or preserved foods.

Finding of the present study fell in the line with the other studies done in the past. Stress had great impact on food choices; stressed emotional eaters ate sweeter high-fat foods and a more energy-dense meal than unstressed and non-emotional eaters [10]. Stress not only increases the intake of food in certain individuals but also shifts their food choices from lesser to higher fatty food. Stress alters food choices in humans and shifts it toward energy-dense items that contain saturated fat and sugar [17]. A study on effect of stress on appetite and eating habits related to comfort foods in college population when stressed revealed that subjects with an increased appetite chose significantly more of sweet foods and mixed dishes. Sweet foods commonly eaten were desserts, chocolate/candy bars, candy, ice creams, muffins/ sweet breads and fresh or canned fruits; whereas mixed dishes commonly eaten were burgers or sandwich meat items, pizza, casseroles, tacos, ethnic foods and fast food. Interestingly, the variety of foods selected in each category decreased under stressful conditions [7]. A study on the effects of carbohydrates on satiety: differences between liquid and solid food justified that people who drink sugary beverages do not feel as full as if they had eaten the same calories from solid food and studies showed that people don't compensate for their high caloric content by eating less food [11]. Consumers drinking sweetened beverages- whether low calorie or not- tend to have an overall lower dietary quality [9]. Drinking water in place of SSBs (sugar-sweetened beverages) or fruit juices is associated with lower long-term weight gain [12]. Stress lead to overeating and women are more vulnerable to restrained eating [6]. Certain foods can effectively reverse or moderate the physiological effects of stress. Vitamin C (citrus fruits) helps one combat short term, intense stress. Protein (lean meats or fish), calcium (milk products) and potassium (vegetables and fruit) help offset the negative effects of long term stress. Carbohydrates (sugars and starches) can settle nerves. Some foods can make stress worse. High-fat foods (fatty meats, fried foods, chips) are hard to digest and can produce fatigue. Alcohol causes mental depression and dehydration and depletes the body of important vitamins and minerals and should therefore be avoided. Caffeine is a stimulant that can cause increased tension and should also be avoided. Although caffeine, nicotine, and alcohol may give a person a boost in the short term, they actually increase fatigue, and excessive amounts exhaust the nervous system. A person needs to eat regularly, as skipping meals leaves a person working on insufficient energy. A person should also try to reduce intake of fats, sugar and red meat and rather go for fruits, vegetables, salads and whole grains [2].

4. Conclusion

Though nutritional knowledge level of professionals was quite high, yet this knowledge was not implemented to cope up with stress. Skipping of meals specifically breakfast was very common. The food choices under stress were shifted from healthier to unhealthier ones. An inclination was observed towards having energy dense foods, ready-to-eat food and more diuretics. Lack of time was the main reason for not adopting stress-busting food as one of the stress coping tool.

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