ORIGINAL RESEARCH PAPER

Volume-8 | Issue-2 | February-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

DIETARY PRACTICES OF CLINICIANS AND STUDENTS IN A TERTIARY CARE HOSPITAL AND ITS PERCEIVED EFFECT ON THEIR HEALTH.

Medicine

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ABSTRACT

Introduction: Clinicians tend to neglect their own health at the cost of their professional obligations. This study assessed the dietary practices of clinicians and students in a tertiary hospital. The study also aimed to identify barriers to healthy eating and determine its perceived effect on their health.

Objectives: (i) To assess the dietary practices of medical students and clinicians in a tertiary care teaching hospital. (ii) To determine the factors that impede healthy eating and dietary practices. (iii) To determine the role of dietary practices in the perceived health of its participants. Methods: This cross-sectional questionnaire-based study included 90 doctors; with 60 in training (30 interns and 30 postgraduate residents) and 30 clinicians (specialists). The validated semi-structured questionnaire had four sections (i) demographic and academic details, (ii) daily dietary patterns, (iii) barriers to healthy eating and (iv) impact of dietary patterns on health. Each section had an open-ended question and participants responded in their own words. The responses were analyzed both quantitatively and qualitatively.

Results: The participants included 64 females and 26 males with 88%(79/90) below 35 years of age. Insufficient intake of food in 40/90(44%) and water in 52/90(58%) participants was reported. Non-availability of food on campus at 'odd hours' (32/90) ($p<0.05$) was found to be a significant barrier. Lack of healthy food options while on duty was another important concern. Most felt hungry (73/90), hypoglycaemic (46/90), impatient (43/90), irritable (66/90) and frustrated (58/90) when they skipped a meal ($p<0.05$). The average health score was 69/100 (±20). The mean health scores among consultant, interns and postgraduate residents were 85 (±12), 63 (±22) and 59 (±17) respectively. Also, 37% felt their diet reflected on the healthcare they provide and 87% felt they could do better with timely food and adequate hydration.

Conclusion: Physicians had poor eating habits despite their knowledge of good eating practices. Over 61% felt they were healthy. The perceived barriers to healthy eating observed are not irresolvable and include better access to food, better scheduling of breaks from work and work ethics. Majority felt healthy, however those who did not attributed it to their poor eating habits.

KEYWORDS

Dietary practices; doctors; clinicians; medical students; health.

Introduction:

Clinicians are believed to neglect their personal health for their professional obligations. [1] Poor dietary practices among clinicians could affect their physical or psychological well-being resulting potential lapses in decision making. [1,2] Thus poor dietary practices amongst Clinicians' is a concern.

Adequate nutrition, exercise and sleep are essential for optimal human functioning; Clinicians are no exception to this. If above factors are adequate, then they can positively affect the undertaking of the physician's professional responsibilities. [2] Medical students were observed to counsel patients better regarding healthy eating practices when they themselves practiced it and had a better state of health. [3] Poor eating and dietary practices of physicians at their work place was found to affect their physical and cognitive functions. [4,5]

This study assessed the dietary practices of clinicians and students at a tertiary hospital. The study also identified barriers to healthy eating and determined the perceived effect of dietary practice on their health.

Objectives:

1) To assess the dietary practices of medical students and clinicians in a tertiary care teaching hospital. 2) Determine the factors that impede healthy eating and dietary practices. 3) To determine the role of dietary practices in the perceived health of its participants.

Materials and methods:

A total of 90 doctors participated in this cross-sectional questionnaire-based study. A written informed consent was obtained following which the questionnaire was administered. The participants consisted of 60 trainee doctors (i.e. 30 interns and 30 postgraduate residents) and 30 clinicians (specialists) studying and working at a Medical College Hospital in Mangalore, India. All participants included were on rotational postings in clinical departments which included scheduled night calls.

The questionnaire used was validated and semi-structured, which was adapted from a questionnaire used by the National Health Service, United Kingdom. [6] The questionnaire was divided into four components (i) demographics and academic position, (ii) daily dietary practices, (iii) perceived barriers to healthy eating and (iv) perceived impact of dietary patterns on health of the participants. A five-point Likert scale was used to elicit answers for each question.

To identify possible barriers to healthy eating, we divided the possible factors into the following categories - (i) lack of time, (ii) accessibility to food and water, (iii) choice of available food, (iv) work ethics and professionalism and (v) personal motivation and knowledge regarding healthy eating habits. The questionnaire also had certain opened ended questions, to which the participants were expected to provide answers in their own words. Themes arising from the collective answers were elucidated and analyzed.

Participants also scored their health and perceived sense of well-being on the EuroQol Visual Analog Scale (EQ-VAS) wherein health is rated on a scale of 0-100, 0 being equated to death and 100 to perfect health. [7]

The quantitative data obtained was analyzed using Chi-square test and one-way ANOVA. All tests were done using SPSS (Statistical package for social sciences) version16. Thematic analysis was done for qualitative data.

Results:

Among the 90 doctors participated in this study, 64 were females and 26 were males. Most belonged to the age groups of 18-25 years (43%) and 26-35 years (45%).

In response to a question which asked the participants to describe what 'an ideal meal' meant to them, majority of the participants 67/90 (74%) described a balanced meal. They described how much each food group (example: carbohydrates -rice, wheat, proteins- legumes, meat, vegetables) should ideally be present in a meal. The remaining 23/90 (26%) participants described their ideal meal by mentioning the components they consumed like dal, rice, chapathi, etc. (The word "meal" (noun) being defined as an act or the time of eating a portion of food to satisfy appetite as per the Merriam-Webster dictionary).

Most participants (53%; 48/90) ate minimum of three meals every day,

with over 81% (73/90); saying that their food intake consisted of wholesome meals rather than just snacks. Regarding the sufficiency of intake 44% (40/90) participants felt that their intake was insufficient. Most participants reported missing breakfast in 58% (53/90), followed by lunch in 16% (15/90) and dinner 7% (7/90). In response to where they ate when on call-duty, most utilised the hospital canteen or mess facilities for lunch and 11% (10/90) skipped their lunch entirely. For dinner 45% (41/90) preferred ordering food from outside the campus. The Clinicians group ate packed meals from home (60%).

The participants consumed an average of 1.6 liters of water in a day. Interestingly, 72/90 (80%) of participants consumed water only when thirsty and/ or chose to aerated beverages or tea /coffee at other times. We found 53/90 (58%) subjects felt that the amount of water they consumed was insufficient. Among these 53 participants, 22 were interns, 23 were post graduates and 8 were Clinicians. Also 27/53 (50%) felt that they habitually consumed lesser quantity of water.

In this study, 68/90 (75%) participants felt that they were unable to eat well during their working hours. Barriers to healthy eating were classified as significant or insignificant (with significant being taken in the literal sense and not statistically). The significant barriers identified by over 35% of the participants to healthy eating were: 'Challenging Work Schedule' (31/90) , 'Lack of Scheduled Breaks' (35/90), 'Location of food stalls/ eating places with respect to working area' (38/90), 'Insufficient working hours of food outlets on campus'(32/90), 'Availability of healthy food on Campus' (34/90), 'An inclination or need to get work done before having own meal' (37/90), 'A feeling that eating around patients may be inappropriate' (33/90) and 'Missing meals due to a mismatch between work timings and food outlet timings' (31/90). The intern and postgraduate doctors more frequently reported the above-mentioned barriers to be significant as compared to Clinicians. The workload, lack of space to store food from home or elsewhere, available food choices - its appeal/ variety/ cost, personal well- being, lack of motivation/ knowledge and work stress didn't affect food consumption.

Statistical significance of these factors was also assessed (Table -1). It was observed that the accessibility of food and water in the campus with reference to location of food stations and its working hours significantly affected healthy eating ($p = 0.01$). Lack of time from busy schedules ($p=0.079$), availability of food (with respect to variety/ appeal/ cost) ($p=0.192$) and work ethics/ professionalism ($p=0.148$) were not statistically significant. However, the frequency of positive responses did indicate that they did affect day to day eating practices. Personal motivation and lack of knowledge towards healthy eating practices was not statistical significance ($p=0.919$).

Table -1: Perceived barriers to healthy eating and their significance.

Lack of time		**Participant**			**Total**
		Intern	Post graduate	Clinician	
	Insignificant	13	12	20	45
	Significant	17	18	10	45
Total		30	30	30	90
Accessibility to food and water		**Participant**			**Total**
		Intern	Post graduate	Clinician	
	Insignificant	20	11	18	49
	Significant	10	19	12	41
Total	30	30	30	90	
Availability of food on campus		**Participant**			**Total**
		Intern	Postgraduate	Clinician	
	Insignificant	14	11	18	43
	Significant	16	19	12	47
Total		30	30	30	90
Work ethics and professionalism		**Participant**			**Total**
		Intern	Postgraduate	Clinician	
	Insignificant	12	13	19	44
	Significant	18	17	11	46
Total	30	30	30	90	
Personal motivation and lack of knowledge of healthy eating practices		**Participant**			**Total**
		Intern	Postgraduate	Clinician	
	Insignificant	25	25	26	76
	Significant	5	5	4	14
Total		30	30	30	90

On qualitative analysis of the responses of the participants to the question "*How would you like to change the way you eat at the hospital*?" the following themes emerged: (72%) "felt the need for *better food facilities at night, especially when on night duty*". Participants also felt that there was a significant deficit in the "*availability of healthy food choices at night*". Most resorted to ordering in food from nearby eateries. Many felt that "*they didn't mind eating out, but it wasn't always the healthiest choice*". Most felt the need for fixed breaks where they could eat at leisure. Most "*felt hurried while eating*" and felt "*taking time off for their lunch or dinner to be a burden*" as it affected their work. Participants unanimously agreed that "a busy schedule" and "*work that could not be put off or a sudden change in schedule like- OT calls, casualty calls, finalising discharge summaries*" were significant contributors to a poor eating habit.

Only 55/90 (61%) participants felt themselves to be healthy. Many of them (65/90) had either lost or gained weight in the preceding 6 months and nearly half (44/90) had fallen ill in the previous 6 months. Of the 44 participants who had fallen ill, 12 chose not to answer if their illness was related to their dietary habits while the remaining 24 participants felt it could been related to their food intake. Also 20/30 (66%) of postgraduate residents and13/30 (43%) of interns did not feel healthy. In comparison only 6/30 (2%) of the clinicians felt they were unhealthy. About 1/3rd (37%) of the doctors felt that their diet affected the care they offered to their patients (Table-2).

Table -2. Perceptions of impact of daily dietary practices on health.

Participant		**Do you feel healthy?**	
		No	Yes
	Intern	13	17
	Postgraduate	20	10
	Staff	2	28
	Total	35	55
Participant		**Have you gained/lost weight in the last six months?**	
		No	Yes
	Intern	3	27
	Postgraduate	6	24
	Staff	16	14
Total	25	65	
Participant		**Have you fallen ill in the last six months?**	
		No	Yes
	Intern	15	15
	Postgraduate	9	21
	Staff	22	8
	Total	46	44
Participant		**Do you think your diet affects your patient care?**	
		No	Yes
	Intern	18	11
	Postgraduate	16	14
	Staff	22	9
	Total	56	34
Participant		**Do you feel you can work better after a good meal?**	
		No	Yes
	Intern	5	25
	Postgraduate	4	26
	Staff	2	28
	Total	11	79

Symptoms related to poor eating were analysed. Participants were asked what they felt when they missed a meal. Numbers of positive responses with their significance for the same are tabulated below in Table -3. When asked whether missing a meal would affect their interpersonal relationships with co-workers, 49/90 (54%) of the participants answered in the affirmative ($p=0.259$).

Table -3. Symptoms experienced after skipping a meal.

Emotional symptoms		Physical symptoms		Cognitive symptoms	
Irritability	66/90 (p=0.53)	Hungry	73/90 (p=0.015)	Inability to concentrate	64/90 (p=0.09)
Impatience	63/90 (p=0.018)	Nauseated	30/90 (p=0.257)	Slower decision making	65/90 (p=0.8)
Frustration	58/90 (p=0.03)	Unwell	32/90 (p=0.288)	Lower efficiency	63/90 (p=0.545)
Drained	40/90 (p=0.03)	Giddiness, hypoglycaemic	46/90 (p=.257)	Negative impact on work	55/90 (p=0.45)

The mean health score of our participants was 69 out of 100 (± 20) with the score ranging from 30 to 100. The Clinician groups fared better than the interns and post-graduates with mean health scores of 85 (±12), 63 (±22) and 59 (±17) respectively.

Discussion:

The participants in this study missed meals despite having adequate knowledge on healthy eating habits. Similar findings were seen in a study by Winston et,al. from UK [6], though far fewer physicians missed their meals when compared to the present findings. Similarly, skipping meals especially breakfast, was noted more commonly among junior doctors (</= 30 years) as compared to their senior counterparts in a study in Pakistan (n= 1,190). [8]

A high dependence on cafeteria facilities of Institution by the junior doctors, was noted in a study from UK. It was noted that 90% of their junior doctors used the canteen facilities as compared to 59% of their consultants. [6] In the present study, 70% of the interns and post-graduates depended on the canteen or hostel dining hall for their lunch. A busier work schedule and more frequent night calls could explain the higher dependence on workplace eateries by training doctors.

The statistically significant barriers for healthy diet in this study were; lack of easily accessible eating facilities; long working hours; and a mismatch between work schedule and timing of in-hospital eating facilities especially at night. Lemaire JB et al. found that doctors cited busy schedules, feelings of inappropriateness when eating in front of a patient and a lack of professionalism as barriers to healthy eating. [5,9] In a study by the NHS in the UK, cost and the available food choices in their canteen were found to be major deterrents to healthy eating.[6] A study in South Africa including 109 health professionals found that 75% of their participants bought food from vendors and restaurants with 60% choosing predominantly 'fast foods'.[10] This highlights the need for better in-house eating facilities especially at night for doctors. The training doctors cited the above reasons as significant more frequently when compared to the Clinicians.

The average water intake of 1.6 liters /day in the study population was far less than the recommended 2-3 liters /day. Also, over 50% felt that their water intake to be inadequate. Interns and post-graduates (>2/3rds) were more likely to drink less water as compared to their counterparts. In a study in the UK [6], the average number of glasses of water consumed daily was 3.1 (SD 2.4), with only 14% drinking the recommended six to eight glasses per day. A study amongst 43 emergency ward male doctors, during the dayshift were found to have a higher risk of developing dehydration for the reduced intake of water. This was because their female counterparts were more likely to consume water at regular intervals. The study also showed that water consumption increased in women when safe, clean and accessible toilet/ restroom facilities were provided. [11] Thus, despite of their awareness to drink water, they fail to do so for various reasons [1,6] By encouraging doctors to drink water more frequently we could avoid dehydration and improve work efficiency.

Missing meals and poor dietary practices may affect perception of own health. A study in Finland including 1189 students studying in various universities, found that students eating healthy (i.e. diets rich in vegetables and fruits /diets that followed dietary guidelines) were more likely to report and perceive better levels of health. This was in comparison to students who ate unhealthy diets (rich in fast foods /sugar rich diet) who perceived a lower sense of health. [12] Participant's in this study scored their health an average of 69 out of a 100. Only 61% of our participants felt healthy. Fatigue has been noted to affect their health and efficiency. A Japanese study on the effect of a poor diet on medical students showed that irregular meals and skipping breakfast positively correlated with a feeling of poor health. [13] Doctors felt that they needed to eat better, with 37% saying that their diet reflected on the care their patients received. Most of the participants (87%) felt that they would work better after a good meal and if their water intake was adequate. In a study by Lemaire et. al., similar findings were noted. An intervention designed to ensure a good diet, easy accessibility of food and water showed significant feeling of improved well-being among participants. [5]

A range of emotional, physical and cognitive symptoms were reported among doctors after missing their meals. Participants felt that they were more likely to make incorrect decisions and were probably more inefficient in their approach to patients. They also reported a higher tendency to argue /disagree with their colleagues when they neglected their meals. This was in good agreement with other studies that analysed the effects of missing meals. [6,7,8]

The training doctors had lower health scores, lesser tendencies to make healthy food choices and an increased perception of what constituted as significant barriers to healthy eating. Such barriers need to be evaluated further to ensure healthy eating among doctors participating in this study.

Conclusion:

This study explored the workplace eating practices, its effect on the work and health perception among training doctors and clinicians. The effects of dehydration and poor eating on cognitive function, work insufficiency and general lack of well-being amongst doctors were evident in the study. The training doctors rated themselves to have lesser health scores as compared to clinicians. Encouraging training doctors to eat well and to take care of their health by exercising the right food choices may improve their quality of work.

Limitations:

Our study included only a limited number of training doctors and clinicians at a single Centre.

Disclosures:

The authors acknowledge the training doctors and Clinicians for their participation in this study.

Conflicts of interest:

No conflicts of interest to declare. Authors have not received funding from any agencies.

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