

## A Study of Knowledge Attitude and Practices of Health Care Providers regarding Workplace Health Education and Promotion-Nutrition

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### Abstract:

**Aim:** To assess the health and nutrition knowledge attitude and practices of health care providers, assess the existing programs and policies regarding nutrition of the health care providers and sensitize the employers towards the need of health and nutrition education to employees.

**Subject and Methods:** knowledge, attitude and practices of fifty health care providers was assessed in a tertiary care hospital using a mixed method approach, combining questionnaire-based survey and focus group consultations to evaluate dietary behaviour and the perceptions of nutrition education programs.

**Results:** Significant gaps were found in knowledge and practices regarding workplace nutrition amongst the health care providers. Consumption of unhealthy foods, wrong methods of preparation, long gaps in eating, lack of adequate food breaks, inadequate provision of place to eat etc. were observed.

**Conclusion:** This study highlights the importance of workplace education regarding nutrition of health care providers. Health care providers tend to neglect their own nutrition. Although knowledge was better amongst doctors as compared to Nurses and Paramedical Workers, yet attitude and practices were uniformly deficient. Sensitization of hospital administrators and small corrective measures can significantly improve the practices. The study pioneers' foray in the area of workplace nutrition and underscores the importance of having proper guidelines to ensure uniform practices.

**Keywords:** Health care providers (HCPs), Workplace Education, Nutrition.

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### Introduction

Workplace Health has become a cause of concern in recent times especially in the health sector itself. Worker's health safety and well-being are vital concerns to hundreds of millions of working people worldwide (World Health Organization, 2010; Centers for Disease Control and Prevention, 2014b).

The high burden of diseases combined with the extended hours of working under stress has adversely affected the health and nutrition of the HCPs. Workplace health programs are a coordinated and comprehensive set of health promotion and protection strategies implemented at the worksite that includes programs, policies, benefits, environmental supports, and links to the surrounding community designed to encourage the health and safety of all employees (Centers for Disease Control and Prevention, 2014a; National Institute for Occupational Safety and Health, 2008). Wellness is

defined as a dynamic process of learning new life skills and becoming aware of and making conscious choices toward a more balanced and healthier lifestyle across eight dimensions: physical, intellectual, emotional, social, spiritual, vocational, financial and environmental (Stoewen, 2017). We decided to undertake this project to address the aspects of Health Education and the role of adequate nutrition for the HCPs working in a 50 bedded urban tertiary care hospital in Western Rajasthan, India which also has a paramedical sciences college attached to it. The project was designed keeping in mind a comprehensive approach that puts policies and interventions in place that can address multiple risk factors and health conditions concurrently and recognizes that the interventions and strategies chosen may influence multiple organisation levels including individual employee behaviour change,

organizational culture, and the worksite environment. The project contained a combination of individual and organizational level strategies and interventions to influence health of the HCPs focusing on their Nutrition. The Project was therefore based on workplace health education and promotion keeping nutrition as the focal point. The strategies and interventions are divided into following areas:

Evaluation of existing knowledge, attitude and practices of health care providers at workplace and the awareness of employee and employer regarding healthy nutrition and its impact.

Evaluate the existing Health-related programs-Regarding Nutrition at workplace. Opportunities available to employees at the workplace or through outside organizations to begin, change, or maintain health behaviours. Health related policies-formal or informal written statements that are designed to

protect or promote employee health and Nutrition. Health benefits-part of an overall compensation package including health insurance cover age and other services or discounts regarding health and Nutrition. Environmental supports- refer to the physical factors at and nearby the workplace that help protect and enhance employee health and Nutrition. Exploring community linkages and partnerships with surrounding community organisations to offer health and nutrition related programs and services to employees and the HCPs.

### Review of Literature

The literature demonstrates that workplace health education and promotion, particularly when focused on nutrition, can positively affect employee health. Successful programs are those that are tailored to the specific needs of the workforce, involve behavioural and environmental strategies, and consider the social dynamics of the workplace. Workplace health promotion has gained significant attention due to its potential to influence well-being and productivity.

Behaviour change is possible even among diverse, working-class populations when proper health promotion strategies are implemented. Their study highlights the importance of culturally relevant, targeted interventions in workplace settings, particularly in small businesses with multiethnic employees where resources may be limited (Sorensen et al., 2005).

Goetzel et al. conducted an extensive review of workplace wellness programs and found that such interventions could indeed improve health outcomes when appropriately designed and implemented (Goetzel et al., 2014). They suggest that successful programs are multifaceted, addressing not only nutrition but also physical activity and stress management. However, they caution that programs

must be tailored to the needs of the workforce to ensure engagement and effectiveness.

Workplace physical activity interventions have been widely studied, and their success often depends on incorporating nutrition alongside physical exercise. Conn et al. conducted a meta-analysis that supports the effectiveness of workplace physical activity programs but also noted that nutrition education could enhance these outcomes (Conn et al., 2009). They argue that combining physical activity with healthy eating campaigns creates a more holistic approach to improving employee health.

Social environments significantly impact dietary habits as was evident in exploration of peer effects in adolescent overweight (Trogon, Nonnemaker and Pais, 2008). While their research focused on adolescents, it suggests that peer influence may also play a role in workplace settings, where social norms and group behaviours can either support or undermine health promotion efforts. This underscores the importance of creating a supportive workplace culture that fosters healthy eating.

In a systematic review of dietary workplace interventions, it was concluded that such programs could lead to significant improvements in dietary behaviours (Schliemann and Woodside, 2019). Their review highlights the effectiveness of interventions that include educational workshops, nutritional counselling and changes in the workplace food environment. This evidence further supports the implementation of nutrition focussed interventions in workplaces as a strategy for improving overall employee health and reducing the risk of chronic diseases.

### Aims and Objectives

1. To assess the health and nutrition knowledge attitude and practices of health care providers at a 50 bedded urban tertiary care hospital in Western Rajasthan, India.
2. To assess the existing programs and policies regarding nutrition of the HCPs.
3. To sensitize the employers towards the need of health and nutrition education to employees.

### Methodology

Introduction and permission: A meeting was held with the Director of an urban 50 bedded tertiary care hospital in Western Rajasthan, India and she was oriented about the workplace health education-nutrition program. With the Director of the hospital on board and with her due permission, an orientation and introduction meeting were held with the Nursing staff and HCPs

The program included 28 HCPs. There were 8 Doctors, 18 Nurses and 2 Paramedical Technicians. Focus group consultations were held with the health

care providers at their workplace, and they were oriented about the program.

Evaluation of the KAP status of the employees regarding workplace health and nutrition: A predesigned performa was given to the teachers and HCPs evaluating their knowledge attitude and practices regarding role of nutrition in the workplace and its impact on their health. The questionnaire was designed to assess the knowledge and practices regarding the method of preparation, healthy content of food, correct amount and frequency of food intake and their attitude towards this initiative in the form of their perceived impact of the program. It contained four questions pertaining to the knowledge about healthy nutrition content of food (Question 1, 2, 3 and 13) and two questions (Question 4 and 5) were about correct practices of the same. Two questions (question 6 and 7) were

kept assessing the knowledge about healthy method of preparation of food, and the correct practices of the same were assessed by another two questions (questions 8 and 9). The frequency and amount of food intake was assessed by three questions (questions 10, 12 and 16) and the practices about frequency and amount of food intake were assessed by three questions (11,14 and 15). The last question (question 17) was kept assessing the impact of the program. The existing strategies and policies regarding nutrition of the HCPs at workplace were evaluated and the opportunities identified.

**Observations**

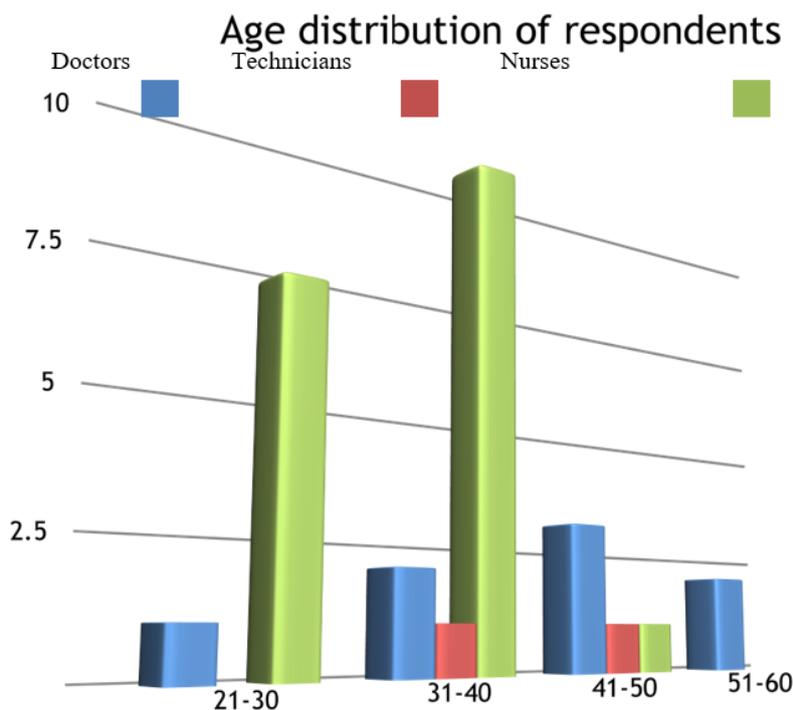
Twenty-Eight health care providers including eight doctors, two technicians and eighteen nurses took part in the program.

**Table 1: Age Distribution of Participants**

| Participants 'cadre | Age group (in years) |   |       |    |       |   |       |   |
|---------------------|----------------------|---|-------|----|-------|---|-------|---|
|                     | 21-30                |   | 31-40 |    | 41-50 |   | 51-60 |   |
|                     | M                    | F | M     | F  | M     | F | M     | F |
| Doctors             | 0                    | 1 | 0     | 2  | 3     | 0 | 1     | 1 |
| Nurses              | 0                    | 7 | 0     | 10 | 0     | 1 | 0     | 0 |
| Technicians         | 0                    | 0 | 1     | 0  | 1     | 0 | 0     | 0 |

The average of doctors was 42.875 years whereas that of nurses was 30.33 years, and the average age of technicians was 42 years. There was a skewing

towards females as this is a mother and child hospital with all female nursing staff.



**Figure 1: Age distribution of the HCPs**

**Table 2: Baseline Knowledge and practices about content of nutritious meal prior to coming on duty. (Based on answers to question 1, 2, 3,13 and 4, 5 respectively).**

| Respo<br>ndent | Question related to knowledge about healthy nutritious content of food |   |  |  | Question related to actual practices about healthy nutritious content of food |   |
|----------------|--|---|--|--|---|---|
|                | Q1: Which of the following is the best vegetarian Source of protein?   | Q2: Which of the following is the best source of Protein? | Q3: What is important for building immunity of the body? | Q13: What should be the calorie contribution from different nutrition components of daily meals? | Q4: Do you consume fast food and packaged food during your duty hours?        | Q5: Do you consume carbonated beverages during your duty hours? |
| Doctors        | 100  | 100   | 100  | 87.5   | 12.5  | 25  |
| Technicians    | 50   | 50  | 0  | 0  | 0   | 0   |
| Nurses         | 0  | 33.33   | 0  | 0  | 0   | 0   |

The baseline knowledge of doctors about sources of protein, important food product for building immunity was better as compared to Nurses and

technicians yet there was more consumption of fast food and carbonated beverages amongst doctors.

**Table 3: Baseline knowledge and practices about healthy method of preparation of food before coming to the workplace (Based on answers to question 6,7,8 and 9)**

| Respondent  | Question related to knowledge about healthy method of preparation of food   |  | Question related to actual practices about healthy method of preparation of food |   |
|-------------|---|--|--|---|
|             | Q 6: While eating apple which of the following is important? Cut/ wash/peel/cut and wash the best vegetarian of protein | Q 7: Which of the following the best for health? Fried Parantha/ grilled potatoes/ steamed sprouts/raw sprouts | Q 8: Do you take spaghetti or noodles in breakfast before coming on duty?        | Q 9: Do you take fried Parantha s in breakfast before coming on duty? |
| Doctors     | 100   | 100  | 0  | 0   |
| Technicians | 0   | 0  | 0  | 0   |
| Nurses      | 0   | 0  | 0  | 0   |

Although the doctors had good knowledge about healthy method of preparation of food yet in actual practice even the doctors have failed to put it into practice. The technicians and nurses neither had good knowledge nor did they practice healthy methods of food preparation before coming to the workplace.

Regarding the correct frequency or amount of food to be taken at the workplace neither the doctors nor the technicians or nursing staff could manifest either correct knowledge (question 10,12,16) or practice (question 11,14,15)

The doctors could understand the importance of workplace nutrition education and their answers to question 17, about the possible impact of a focussed program on workplace education regarding nutrition elicited a response of ‘very important’. The technicians and nurses did not feel that such a

program could be important or might bring about a behaviour change. This could indicate a lackadaisical attitude towards the workplace health and nutrition.

**Annexures**

**Annexure 1**

**List of Abbreviations**

HCP- Health Care Provider

CDC- Centre for Disease Control

MPH- Master of Public Health

WHO- World Health Organisation

NIOSH- National Institute of Occupational Safety and Health

KAP- Knowledge Attitude Practice

**Annexure 2****Evaluation Questionnaire Pre Project/Post Project**

Name: .....

Sex: M/F

Age: .....Years

Profession: Doctor/ Nurse/Technician

**Age Group:**

21-30 Years

31-40 Years

41-50 Years

51-60 Years

**Question 1: Which of the following is the best vegetarian source of Protein**

- Apple
- Dal (Pulses)
- Curd
- Dalya

**Question 2: Which of the following is the best source of Protein**

- Egg
- Pulses
- Milk
- Groundnut

**Question 3. What is important for building immunity of the body?**

- Carbohydrates
- Fats
- Proteins
- Water

**Questions 4: Do you consume fast food and packaged food during your duty hours?**

- Usually once every day
- Occasionally less than once a week
- Never
- More than twice a week but not daily

**Questions 5: Do you consume carbonated beverages during your duty hours?**

- Usually once every day
- Occasionally less than once a week.
- Never
- More than twice a week but not daily

**Question 6: While eating apple it is important to**

- Peel it before eating
- Wash it before eating
- Boil it before eating
- Cut and wash before eating

**Question 7: Which of the following the best for health?**

- Deep fried Paranth
- Grilled Potatoes
- Steamed Sprouts
- Raw Sprouts

**Question 8: Do you take spaghetti or noodles in breakfast before coming on duty?**

- Yes more than twice a week
- Occasionally less than once a week
- Daily
- Never

**Question 9: Do you take fried Paranthas in breakfast before coming on duty?**

- Yes more than twice a week
- Occasionally less than once a week
- Daily
- Never

**Question 10: What is the importance of having meal (Breakfast/Lunch/ Dinner) before coming on duty?**

- Very important
- Important
- Has some importance
- Does not make any difference

**Question 11: How many times in a day do you skip meal before coming on duty**

- Never
- Once a week
- Two times a week
- More than twice a week

**Question 12: What should be the amount of meal taken before coming on duty?**

- Light Meal
- Moderately Heavy Meal
- Heavy Meal
- Meal rich in Liquids

**Question 13: What should be the calorie contribution from different nutrition components of daily meals?**

- Carbohydrates 30-40 % Proteins 30-40 % and Fats 30-40 %
- Carbohydrates 50-60 % Proteins 30-35 % and Fats 10-15 %
- Carbohydrates 10-20 % Proteins 30-40 % and Fats 40-50 %
- Carbohydrates 30-40 % Proteins 10-15 % and Fats 30-40 %

**Question 14: How many days in a week are you able to take an adequate meal before coming on duty?**

- 0-1 Days
- 2-3 Days
- 4-5 Days
- 6-7 days

**Question**

**15: How many times do you take a snack Break during duty hours?**

- I do not eat while on duty
- I sometimes eat while on duty when I am very hungry
- I sometimes order tea or Poha while on duty
- I take two snack breaks everyday while on duty

**Question 16: What can you eat while on duty?**

- Nothing should be eaten while on duty
- Fruits can be eaten once on duty
- One Full meal should be taken while on duty
- At least two snack breaks should be taken at an interval of 2-3 hours

**Question 17: In your opinion what could be / has been the impact of this program regarding workplace Health Education-Nutrition**

- Excellent and might lead to/has led to behaviour change
- Could be/Was meaningful and worth following
- Average and will not/does not impact existing behaviour
- Not useful

**Results and Conclusions**

Twenty-eight HCPs including 8 doctors, 18 Nurses and 2 Technicians participated in the program.

Only 21.42 percent HCPs had adequate knowledge about the importance of nutrition and its impact on workplace health at the time of initiation of the program.

Only 34.82 percent answers were correct regarding the nutrition content of food.

Only 17.86 % participants were actually taking adequate meal in terms of nutritive value and amount of food before coming on duty. Eating healthy food before coming on duty was often ignored by doctors and nurses. Most of the HCPs cited lack of time as the reason for neglecting their own nutrition.

There was no place in the workplace where the HCPs could eat without being disturbed by patients.

There was no tie up with any service provider to provide adequate and nutritious food to the HCPs although such facility was available nearby and the staff was going there whenever they could find time. The staff was not taking a snack break routinely during working hours. Meals breaks were mostly compromised by heavy work pressures.

Based on the findings of this study, it is evident that workplace health education and promotion focused on nutrition is a neglected subject. There are major gaps existent in the knowledge and practices of all health care providers including doctors, nurses and technicians. The gaps in knowledge about nutritious food and its consumption is maximum amongst doctors. Similarly, doctors had maximum knowledge about correct method of preparation but had seldom put it into practice. The study highlights the importance workplace health education regarding nutrition amongst health care providers.

**What is already known-** Workplace health education and focus on nutrition is important.

**What the study adds-**Workplace health education regarding nutrition is a neglected aspect even amongst health care providers. There are gaps between knowledge and practices of health care providers and even qualified doctors. Workplace health education augmentation regarding nutrition is a doable and urgently required intervention.

**Recommendations**

- There should be guidelines for provision of adequate place to eat depending on the number of health care providers employed in a facility.
- There is a need for formulating guidelines for food breaks and provision of healthy and nutritious food at all work places.

**Declarations**

**Funding:** None.

**Ethics approval:** The study was part of an institutional project conducted with director's consent. As per institutional and national guidelines, formal ethics approval was not required.

**Consent to participate:** Consent letter of Director where the study was conducted.

**Consent for publication:** Not applicable as no image or individuals' personal data published

**Data Availability:** All raw data is stored in electronic form with corresponding author.

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