



Knowledge on occupational health hazards among staff nurses

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Abstract

Background: Hospital environment is known to be one of the most hazardous settings to work. Nursing is a profession that is overwhelmingly concerned with the care of patients and experience a higher rate of workplace hazards exposure than other health care workers. Hence the study aimed to assess the level of knowledge on occupational hazards among staff nurses. **Method:** Cross-sectional research design was employed with 60 samples who matched the inclusion criteria were selected by convenience sampling technique. Data were collected by self-administered questionnaire and analysed by descriptive and inferential statistics.

Results: The study findings reveals that among 60 staff nurses majority 50(83%) had adequate level of knowledge, 10(17%) had moderately adequate knowledge and none of them inadequate knowledge and it is significantly associated with qualification and years of experience.

Conclusion: The study findings concluded that staff nurses is having adequate knowledge on occupational hazards but continue to face several hazards in their workplaces. Interventions should be instituted to mitigate the hazards by supplying of personal protective equipment, counselling for job related pressures and relaxation technique.

Keywords: occupation, occupational hazards, staff nurses, health care personnel, work place

Introduction

Occupational health is the protection and promotion of the health of workers by preventing and controlling the occupational disease and accidents by eliminating occupational conditions and factors hazardous to health and safety of the work (WHO) [1]. Occupational hazard is a hazards which experienced in the workplace. Hospital environment is known to be one of the most hazardous settings to work. Worldwide, the healthcare workforce represents 12% of the working population [2]. Healthcare workers encounter diverse hazards due to their work related activities [3, 4]. Nursing is a profession that is overwhelmingly concerned with the care of others and it tends to neglect itself [5]. Nurses are the highest risk of exposure to occupational health hazards among health care workers [6].

Occupational health problems among nurses may be broadly categorized into four types: biological hazards, chemical hazards, physical hazards, and psychosocial hazards. Biological hazards are mainly infectious hazards such as HIV/AIDS, Tuberculosis, Hepatitis and other blood borne infections. Infection not only exist in the hospital setting but wherever the nurses are employed such as health centre, dialysis centres, nursing homes, institution for retarded, elderly home etc...may exist. In hospital risk areas include infectious disease ward, intensive care unit, emergency and ambulatory care services. Study conducted by Shires (2003) and observed that nurses who do not receive occupational health training are vulnerable to sharp injuries leading to blood-borne diseases [7]. Physical hazards commonly found in health care industry include radiation, exposure to slippery floors, exposure to body fluids and assault by confused patients. Mechanical hazard include back pain/injury because of manual lifting of patients in

particular. This is the main and a common hazard in hospitals and health centres whereby lifting, turning, moving and adjusting beads by hand are routine activity of daily work.

Chemical hazards include handling of antineoplastic agents, exposure to formaldehyde, glutaraldehyde, Ethylene oxide, Nitrous oxide, mercury, etc., Martin, et.al stated that healthcare workers who handle chemotherapeutic agents report an increased incidence of acute health symptoms such as nausea, vomiting, headaches, and hair loss. Further noted that there is an association between exposure to the drugs and adverse effects on reproductive health among female staff members, including infertility, pre-term deliveries, spontaneous abortions, foetal abnormalities, and small-for-gestational-age births. Psychosocial hazards particularly include stress and depression in the departments where psychological engagement is required. Job-related stress is common among nurses particularly those who are always in contact with dying, seriously ill, suicidal patients and distressed relatives [8]. Job related stress could lead to frustration, absenteeism and stress, burnout syndrome and inadequate care to patients. Shimizu *et al* suggest that signs of intense mental fatigue are frequently observed in nurses who take on additional duties [9].

There are several reasons why nurses working in hospital area may be more exposed to workplace hazards than other health workers. The specific factors may be lack of staff, high workload, lack of support services and the need for nurses to take on extended roles [10]. Also, there are often inadequate resources, poor systems, unrealistic expectations from communities and administrators, perceived lack of support from management and high stress [11]. Mahadeo Shinde *et al* reported that 83.8% and 67.6% of them strongly aware about biological hazards and non-biological

hazards respectively. Thus the nurses are prone to exposure to health hazards in the hospital [12]. Hence the study was undertaken to assess the knowledge on occupational health hazards among staff nurses.

Methods and Materials

The research approach adopted in the study was quantitative approach by using non-experimental cross-sectional research design. After obtaining formal permission from authority the study was conducted at Saveetha Medical College and Hospital with 60 samples. Samples who matched the inclusion criteria were selected by convenience sampling technique. The nurses who consented for willing to participate were informed about the purpose of the study. The tool used for the study was socio demographic variables and structured multiple choice questions to assess the knowledge regarding occupational hazards. The

questionnaire contains the questions related to biological hazards, physical hazards, chemical hazards and psychological hazards. Data were collected by self-administered questionnaire during leisure time of the participant at the ward or canteen. Confidentiality and anonymity was maintained throughout the procedure. Collected data were analysed by using descriptive and inferential statistics. P values less than 0.05 were considered statistically significant.

Results

Distribution of Demographic Variables

Regarding demographic variables, out of 60 nurses 33(55%) nurses belongs to age group 25-29 years and majority 46(77%) of the nurses were female with 1-2 years of experience. With regard to qualification 28(47%) were diploma nurses.

Table 1: Frequency and percentage distribution of demographic variables among Staff Nurses

SL.NO	Demographic variables	Frequency	Percentage
1.	Age in Years		
	a) 20 - 24	22	37
	b) 25 - 29	33	55
	c) 30 - 34	5	8
2.	Gender		
	a) Male	14	24
	b) Female	46	77
3.	Qualification		
	a) ANM Nursing	12	20
	b) Diploma Nursing	28	47
	c) B.Sc. Nursing	20	34
4.	Years of experience		
	a) 1- 2	45	75
	b) 3 - 4	14	24
	c) 5 - 6	1	1
5.	Do you experienced Occupational Health Hazard		
	a) Yes	55	92
	b) No	5	8

Level of Knowledge on Occupational Hazards

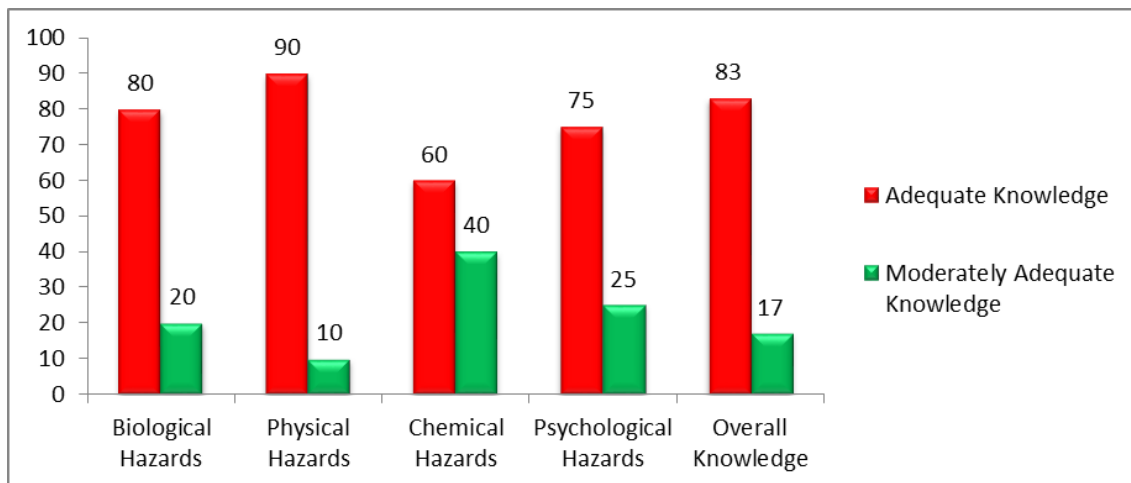


Fig 1: Percentage distribution of level of knowledge on occupational hazards among staff nurses

Regarding level of knowledge on occupational hazards, Majority of the nurses had adequate knowledge and none of them had inadequate knowledge regarding biological, physical, chemical and psychological hazards.

In overall also out of 60 staff nurses, majority 50(83%) had adequate level of knowledge and 10(17%) of them had moderately adequate as shown in figure 1.

Table 2: Mean and standard deviation of the level of knowledge among Staff Nurses.

Level of knowledge	Mean	Standard deviation
Biological Hazards	5.9	1.2
Physical Hazards	8.8	1.5
Chemical Hazards	7.8	2.3
Psychological Hazards	3.7	1.1
Overall Knowledge	20.4	2.34

Mean and standard deviation score was depicted in Table 2. The overall mean score was 20.4 with 2.34 standard deviation.

Association between the level of knowledge and demographic variables

Chi square test reveals that there is significant association with level of knowledge and selected demographic variables of qualification and years of experience at the level of $P < 0.05$.

Discussion

Occupational hazards are conditions surrounding a work environment that increase the probability of death, disability, or illness to a worker. Nursing is a profession within the health care sector focused on the care of individuals, families and communities so they may attain, or recover optimal health and quality of life [13]. Nurses are the largest group of healthcare workers in medical profession and some of them have directly contact with the patient and experience a higher rate of workplace hazards exposure than other health care workers though they are having knowledge on prevention of occupational health hazards. The present study also assessed the level of knowledge on occupational health hazards and found that majority (83%) of them had adequate knowledge and 75% of them experienced to occupational hazards. This study finding largely comparable with previous studies conducted by Aruj Awan *et al*, and reported that 67.5% nurses were with high knowledge about occupational hazards [14] but Poonam Jyoti found that he overall level of knowledge on occupational health hazards was average [15]. Ndejo *et al.*, findings shows that that 50.0% of respondents reported experiencing an occupational health hazards, among these, 39.5% experienced biological hazards while 31.5% experienced nonbiological hazards and that sharp related injuries and stress were the major health-related occupational hazards experienced by healthcare workers [16]. Similarly the another study findings which is conducted on health care workers face the risk of accident and illnesses related to their occupation by Rosa Jimenez paneque *et al* and results showed that Psychological stress, exposure to communicable disease violence are perhaps the most significant ones. Workers in emergency services are more likely to be subjected this risk than health care workers in other areas [17]. Another study conducted by Opelo Keorekil who reported that the common health hazard faced by the staff nurses are health hazards namely; back aches, frequent headaches, and persistent tiredness; mercury, solvents and anaesthetic gases; HIV, streptococcus infections. From the above study and it is revealed that the staff nurses are having knowledge on occupational hazards but still they are experiencing lot of problems physically, biologically, psychologically, chemically and socially [18]. In current study also reveals that qualification and experience was highly associated with the level of knowledge. This finding is supported by the study conducted by Osungbemiro *et al*, who reported that the healthcare workers

with more than 10 years' experience had a better awareness of occupational health safety and hazards [19]. The study has certain limitations that the experience of occupational hazards by staff nurses and its associated causes for the same was not intensively analysed. Future studies may be conducted retrospectively to investigate the reason for the occupational hazards.

Conclusion

The study findings concluded that staff nurses is having adequate knowledge on occupational hazards but continue to face several hazards in their workplaces. The factors associated with experiencing hazards include not wearing all necessary protective equipment, working overtime, experiencing work related pressures, and working in multiple facilities. Interventions should be instituted to mitigate the hazards. Specifically supplying of Personal Protective Equipment, counselling for job related pressures, relaxation technique should be initiated.

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Conflict of Interest

Authors declares no conflict of interest

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