

Gender Based Occupational Health Hazards among Paramedical Staff in Public Hospitals of Jhelum

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Abstract

This study provides insight into gender based occupational health hazards among paramedical staff in public hospitals of Jhelum. Quantitative technique was used to find out the gender differences in exposure to occupational health hazards. 120 paramedics were taken as sample (male=60, female=60). Study was consisted of two phases, Phase I for development of questionnaire and Phase II to testment of hypothesis and fulfillment of objectives. Self designed questionnaire consisting of thirty eight items, divided in two sub categories, psychological and physiological was used for data collection. The Alpha reliability of questionnaire was .754. Although both physiological and psychological factors are influencing paramedical staff's health but physiological health hazards are influencing paramedic's health more as compared to psychological health hazards. Hypothesis was supported by findings that females are facing more occupational health hazards as compare to males. Females are more exposed to psychological (stress, tension, and depression) as compare to physiological hazards. There is a significant affect of age on experiencing occupational health hazards while experience itself has no significant effect on occupational health hazards exposure.

Key Words: Gender Based; Occupational Health Hazards; Psychological; Physiological; Paramedical Staff; Public Hospitals

Introduction

Health sector is growing attention in all over the world. Many developed and also developing countries gained substantial improvement in health sector. Health status plays a crucial role in determining social and economic development of any country. Better health leads to improved efficiency and productivity of labor, eventually leads to economic growth and human welfare and breakage of poverty cycle. According to Haidari & Iqbal (1996) in developing nations like Pakistan economy can be strengthened by improving primary health care system and resources can be saved that have to be spent on treatment costs. Improved health results in better use of resources for individual, household, and for whole nation. "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). Some factors disturb health status which are termed as hazards. Hazard refer to a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impact, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (WHO, 2009). Working condition has strong impact on well being of worker's health. Non supportive working environment can cause harm if not controlled.

This non supportive working environment termed as occupational health hazards. Occupational health hazards refer to the potential risks to health and safety for those who work outside the home (Maier 2009). Employees suffer from these hazards they have been exposed to at work place. Workplace hazards are diverse in nature in different settings. Hospitals are moderate health risk industries as it accompanies many services and people from diverse professions. It's a service delivery industry, of high work demand profoundly reliant on staff for efficient delivery of services (Sadleir, 2010). Paramedical staff is integral part of hospital staff (Mittman et al 2002). For health care facilities hospitals are reliant on paramedical staff. In hospital paramedical staff is exposed to many biological hazards (back injuries). Perhaps most common occupational health hazard is low back pain in nurses (Shires, 1993). Physicians and also nurses not receive any training in occupational health (Shires, 1993). Shiao et al (2001) found that sharp injuries remain the commonest cause of exposure to blood-borne diseases in healthcare workers. Due to psychological factors hospitals are stressful place for staff (Sadleir, 2010). Job in hospitals combines with high level of job demand and excessive work load which create job strain and stress among health care workers. The psychological hazards like work load, highly demanded work, fatigue both mental and physical and burn out are common in hospital environment which create stress depression and mental fatigue for its workers (Sadleir, 2010).

Managerial atmosphere also affect ratio of exposure to both psychological and physiological hazards. There is a strong link between occupational (chemical, physical) and organizational (lack of safety training, low level of safety climate, practices) risk factor on workplace injuries in public hospitals employees. Lack of training, low level of safety climate, and safety practices are reasons for which hospital workers are exposed to workplace injuries (Gimeno et al, 2005). Women presence in paid sector has motivated indication how gender have influence their work related health and how women health can be protected from workplace hazards. Women's majority existence in health care workers make them more vulnerable to infections, needlestick injuries, musculoskeletal injuries, and burn out (WHO, 2004). There is a strong link between gender and upper musculoskeletal complaints. Female workers have the higher risk of upper extremity musculoskeletal (neck, wrist, elbow, shoulder) complaints than men did (Zwart, 2001).

The aim of occupational health research is to prevent disease and suffering among workers. Gender as variable in occupational research will lead to accomplishment of this goal effectively. Gender sensitivity is more than comparing male and female disease and injury rate its reexamination of workplace reality that imposes changes in the usual way of happening in order to improve the quality of information about male and female workers. Necessary changes will lead to better-targeted prevention programs for both sexes (Messing et al, 2003). In Pakistani context fewer studies have done on gender differences in occupational health hazards. In previous researches variable of gender is omitted. Keeping in view the previous researches present study is designed to identify gender based occupational health hazards among paramedical staff. To find out differences to exposure of occupational health hazards on the basis of age and experience and which type of hazards whether psychological or physiological hazards influencing paramedic's health more. By identifying these gender differences in hazards might be lead to salvation of these problems in future.

Method

Objectives

- To identify health hazards among paramedical staff in of public hospitals of Jhelum.
- To identify gender differences in occupational health hazards among paramedical staff in of public hospitals of Jhelum.
- To find out the effect of age and experience on occupational health hazards exposure of paramedical staff.
- To find out either psychological or physiological factors are more influencing their health.

Hypothesis

Females are facing more occupational health hazards as compare to males.

Operational definition

Occupational health hazards

In the present research occupational health hazards will be measured in terms of non supportive working environment that can cause harm if not controlled. It will be measured in terms of scores on occupational health hazards questionnaire.

Gender differences

In the present research the gender differences will be measured in terms of differences in ratio of exposure to occupational health hazards reported by both male and female on occupational health hazards questionnaire.

Paramedical staff

In the present research the paramedical staff is those health care assistants who are trained to give emergency medical treatment and assist medical professionals in allied health fields, also supporting medical personnel. In present research the paramedical staff consisted of laboratory technicians, lab assistants, nurses, ward boys, technologists, OT assistants and operation theater technicians.

Public hospitals

In present research the public hospital are those health care institutions owned by a federal, state, or local government, receives government funding and provides free or at low cost health services to its citizens.

Research design

This research was conducted in two phases, Phase I and Phase II. Phase I was about the development of an instrument which was done by following systematic procedure in which item pool was generated through literature review and focus groups and instrument of 38 items was finalized for tryout after taking opinion from judges. The phase II (Main study) dealt with testing of hypothesis and fulfillment of objectives.

Sample

For current study non probability sampling technique (purposive sampling) was used to select the sample. In total 120 sample, 60 were female and 60 were male.

The sample was chosen from District Headquarter hospital, Fauji Foundation hospital and Combined Military Hospital of Jhelum. Categories were specified on the basis of paramedics ages range fifteen to thirty years, thirty one to forty five, forty six to sixty years. Likewise categories on the basis of experience were one to ten years, eleven to twenty years, twenty one to thirty years and thirty one to forty years were categorized.

B. Instrument

Instrument termed as OHH (occupational health hazards), consisting of 38 items, designed in phase I was used as tool to collect data from respondents which was consisted of two categories psychological (12 items) and physiological (26 items). Likert type rating scale with five response categories, “never”, “rarely”, “sometimes”, “often”, “and always” was used. The Alpha reliability of questionnaire was .754.

C. Procedure

The participants of research (Para Medical Staff) were briefly informed about nature and purpose of the study. After taking informed consent the questionnaires were distributed among respondents personally. SPSS (Statistical Package for Social Sciences) was used for analysis of data.

Results

Table 1: Mean, standard deviation and t test values on OHH questionnaire (N=120).

Questionnaire	Male (n=60)		Female (n = 60)		t
	M	SD	M	SD	
OHH	74.33	25.43	82.85	15.90	2.199*

df =118, *p<.05

The finding in table 1 presents gender differences in exposure to occupational health hazards of paramedical staff. Results are found to be significant (t=2.199, df=118, p=<.05). It reflects females are more exposed to occupational health hazards as compare to males.

Table 2: Mean, standard deviation and t test values on physiological factor of OHH questionnaire (N=120).

Questionnaire	Male (n=60)		Female (n = 60)		t
	M	SD	M	SD	
OHH physiological factors	48.42	17.79	53.45	10.17	1.902

(df=118, p=n.s)

The finding in table 2 indicates gender differences in exposure to physiological occupational health hazards of paramedical staff. Results are found to be non significant (t= -1.902, df=118, p=n.s). It reflects no differences exist between male and female paramedical staff in exposure to occupational health hazards.

Table 3: Mean, standard deviation and t test values on psychological factor of OHH questionnaire (N=120).

Questionnaire	Male (n=60)		Female (n = 60)		t
	M	SD	M	SD	
OHH psychological factors	25.92	8.66	29.40	7.63	2.34*

df =118, *p<.05

The finding in table 3 presents gender differences in exposure to psychological occupational health hazards of paramedical staff. Results are found to be significant (t=2.34, df=118, p=<.05). It reflects females are more exposed to psychological occupational health hazards as compare to males.

Table 4: Mean, standard deviation and t test values on OHH questionnaire (N = 120).

Questionnaire	Physiological factors OHH (n = 120)		Psychological factors OHH (n = 120)		t
	M	SD	M	SD	
OHH	50.93	14.65	27.65	8.31	25.18 ***

df =119, ***p<.001

The finding in table 4 presents differences in exposure to physiological health hazards and psychological health hazards among paramedical staff. Results are found to be significant (t=25.18***, df=119, p=<.001). It reflects that ratio of physiological health hazards are more influencing paramedical staff's health as compare to psychological health hazards in public hospitals.

Table 5: ANOVA showing differences on the basis of age in occupational health hazards among paramedical staff in public hospital of Jhelum on OHH questionnaire (N=120).

Questionnaire	Age Categories							
	15-30 Years (n=48)		31-45 Years (n=57)		46-60 Years (n=13)			
	M	SD	M	SD	M	SD	F	
OHH	77.44	18.48	83.21	22.31	66.15	24.45	3.683	

df =118 ,*p>.05

The finding in table 5 presents differences on the basis of age in exposure to occupational health hazards among paramedical staff. Results are found to be significant ($f=3.683$, $df=118$, $p=>.05$). It reflects that significant affect of age in exposure to occupational health hazards among paramedical staff. The category 3(46-60) is less expose to hazards as compare to previous 2 categories.

Table 6: ANOVA showing differences in exposure to occupational health hazards on the basis of experience among paramedical staff in public hospital of Jhelum on OHH questionnaire (N=120).

Questionnaire	Experience Categories									
	1-10 Years (n=54)		11-20 Years (n=46)		21-30 Years (n=16)		31-40 Years (n=16)			
	M	SD	M	SD	M	SD	M	SD	F	
OHH	78.04	17.94	83.33	23.05	72.25	26.85	58.50	9.19	1.817	

(df=118, p=n.s)

The findings in table 6 indicate the differences in exposure to occupational health hazards on the basis of experience among paramedical staff. The result found to be non significant ($f=1.817$, $df=118$, $p=n.s$). It reflects that non significant differences in exposure to occupational health hazards exist between on the basis of experiences in different categories.

Discussion

This study was designed to explore paramedical staff exposure to occupational health hazards (physiological and psychological) along gender differences and impact of demographic variables (age and experience). Along with it was also planned to find out either psychological or physiological factors are more influencing paramedics health. For current study self structured questionnaire (consisting of thirty eight items), designed in phase I of the study, was used as tool to identify occupational health hazards among paramedical staff. Phase II was to testament of hypothesis and fulfillment of objectives. T test was computed for testament of main hypothesis of research which was to find out gender difference in exposure to occupational health hazards. Findings of table 1 showed that females were more exposed to occupational health hazards as compare to males which supported hypothesis. One reason for female more exposure to health hazards was that large proportion of women in workforce was excessively concerted in the low occupational bracket mainly in the service sector like nurses (health care). This occupational segregation of women was often associated with inferior conditions of work. Similarity between both researches was that mostly female were designated as nurses which made them more vulnerable to occupational health hazards as primary caregivers, although male also designated as nurses but their ratio is limited.

There is no sex limitation in occupation of nursing, a man can be nurse just like women but many of job assignments were gender-based and are a result of a complex web of social and economic factors that lead women and men into different occupations. Along this t test was computed separately with both subcategories of hazards (psychological and physiological) to check which type of hazards females or males were more exposed. Results indicated in table 2 and 3 that females were more exposed to psychological hazards (stress, depression, and tension) as compare to physiological hazards. Results were similar to Verbrugge (1985) study that differences in health were the result of acquired roles, stress and life styles and preventive health practices. Female double burdened role made them more vulnerable to hazard of stress. Acquired roles (both family and job responsibilities) made them more vulnerable to psychological hazards as compare to physiological hazards. Although psychological and physiological both types of hazards were affecting paramedical staff's health. The ratio of physiological health hazards was more as compare to psychological health hazards (see results of table 4). Overburden of work and deficient staff were enormous hazards in public hospital faced by paramedical staff. In developing nations where health facilities are not developed and recourses were limited staff is often vulnerable to these hazards. Stress was common occupational health hazard for paramedics at hospital.

Job in hospitals combined with high level of job demand and excessive work load which produce job strain and stress among health care workers. Findings was also supported by the study of Landsbergis (1988) which identified job strain and stress, physical exertion, hazard exposure among health care workers. Female paramedics reported higher level of musculoskeletal diseases as compare to male. Findings were accordance to study of Zawart (2001) which stated that female workers had the higher risk of upper extremity musculoskeletal complaints than males did. Reason for higher reporting of musculoskeletal diseases of females was that work station designs were based on average male physical capacity and female average size was smaller than males, handling of improper size equipments put female body at greater pressure and makes more vulnerable to musculoskeletal diseases as compare to male. Paramedics were less likely to report needle stick injuries. Similar results were reported by study exposure reporting done by (Boal et al 2008) which stated that paramedics were less likely to report needlestick injuries because considering it non threatening for their personal health.

Deep cuts and needlesticks were more likely to report as compare to infections and temperate cuts and from sharp equipments. Female reported more injuries as compare to male. Responses of item 2 by male and female respectively demonstrated the hazard of infectious diseases faced by paramedics in daily routine. Females were more exposed to hazards of infectious diseases (Bacteria, Allergy, and Germs) as primary care givers. A case was identified by nurse that she acquired Hepatitis B from a patient. This finding in accordance to study of Gestal (1987) which showed that most threaten infectious disease was Hepatitis B in hospitals. Danger of contracting with Hepatitis B was more common in departments in where is frequent interaction with blood at hospitals. Another objective of study was to find out affect of age in exposure to occupational health hazards was accomplished by using ANOVA (see table 5). Findings showed the differences on the basis of age in occupational health hazards. Paramedic's age range of forty six to sixty is less prone to hazards.

The ratio of paramedic's age range of forty six to sixty was minute, were designated as nursing assistant, ward master and have less interaction with patients which reduce the risk of occupational health hazards. Findings were supported by previous research of Gestal (1987) stated that paramedics had direct interaction with patients which made them more vulnerable to occupational health hazards. Paramedic ages fifteen to thirty were more exposed to hazards, because they were mostly inexperienced and not trained to equip with occupational health hazards. Same results were stated by (Gimeno et al. 2005) that there is strong link between lack of safety training, low level of safety climate, practices in exposure to occupational health hazards. Another objective of study was also accomplished by using ANOVA see table 6. Findings showed the differences on the basis of experience in occupational health hazards. The result of table 8 indicated that experience not affect disclosure to occupational health hazards. Result was opposite to the study of Shiao et al. (2001) which stated that long duration of employment increases the risk of sharp injuries among health personnel.

Differentiation in results can justified by this argument that current research was observing overall occupational health hazards instead of sharp injuries among health personnel. Workers were less likely to report hazards especially hazards created by bad administration. They considered research was some type of secret evaluation from hospital administration. Study by (Gimeno et al. 2005) showed there was strong link between organizational factors (lack of safety training, low level of safety climate, practices) and important impact on work related injuries among healthcare workers. Organizational factors were even more important than occupational risk factors. Same results were affirmed by current research. Ratio of occupational health hazards including work related injuries are lessening by organizational factors. In three hospitals (FFH, CMH, DHQ) safety climate was better in C.M.H, so paramedics of C.M.H reported low level of hazards.

Conclusion

The present study was designed to provide insight into gender based occupational health hazards among paramedical staff in public hospitals of Jhelum. For primary health care facilities hospitals were reliant on paramedical staff that was expected to fulfill any role on the basis of acquired qualification. Paramedics were exposed to occupational health hazards both psychologically and physiologically as working directly with patients. Paramedical staff is exposed to physiological hazards (infectious diseases and work related injuries) and psychological hazards. Female were facing more occupational health hazards as compare to male. Female reported higher level of occupational health hazards of musculoskeletal diseases and psychological hazards (stress, tension, and depression). There was a significant affect of age in exposure to occupational health hazards paramedics aged forty six to sixty but there was no significant difference on the basis of experience in exposure to occupational health hazards. Physiological health hazards were influencing paramedic's health more as compare to psychological health hazards. Overburden of work and deficient staff were enormous hazards in public hospital faced by paramedical staff.

Recommendations

- This particular research enables us to identify gender differences in exposure to occupational health hazards and existence of occupational health hazards for paramedical staff in public hospital of Jhelum.
- This research enables administration of hospitals to formulate policies to reduce occupational health hazards for paramedical staff. Reduction in occupational hazards will lead to increased productivity and better health of workers resulted in breakup in poverty cycle. Increased productivity will lead to better health facilities for public also.
- This study also serves as guideline for health administration at hospital and at federal and provincial level to implement outcome of this research for making strategies policies to reduce exposure to occupational health hazards of paramedical staff.
- This study also provides baseline for the future research to further address other variables related to this issue in more detail and systematic way. In this study although internal consistency and face validity of scale had been measured but still need more research to make it more reliable instrument by adding more demographic variables e.g. variable of public private hospital comparison is missing, Sample size was so small which create hindrance in generalizability of finding of research.

References

- Boal, W.L., Leiss, J.K., Sousa, S., Lyden, J.T., Li, J., & Jagger, J. (2008). The National Study to Prevent Blood Exposure in Paramedics: Exposure Reporting. *American Journal of Industrial Medicine*, 51, 213–222. doi:10.1002/ajim.20558
- Department of Gender, Women and Health. (2004). Gender Health and Work Retrieved on April 28, 2010, from <http://www.who.int/gender/documents/en.pdf>
- De Zwart, B.C.H., Frings-Dresen, M.H.W., & Kilbon, A. (2001). Gender differences in upper extremity musculoskeletal complaints in the working population. *Institute for Occupational and Environmental Health*, 74, 21-30.
- Gestal, J.J. (1987). Occupational Hazards in Hospitals: Risk of Infection. *British Journal of Industrial Medicine*, 44 (7), 435-442. Retrieved on June 06, 2010, from <http://www.jstor.org/stable/27726421>
- Gestal, J. J. (1987). Occupational hazards in hospitals: accidents, radiation, exposure to noxious chemicals, drug addiction and psychic problems and assault. *British Journal of Industrial Medicine*, 44 (8), 510-520. Retrieved on April 06, 2010, from <http://www.jstor.org/stable/27726436>
- Jimeno, D., Felknor, S., Burau, K.D., Delclos, G.L.(2005), Organisational and Occupational Risk Factors Associated with Work Related Injuries among Public Hospital Employees in Costa Rica. *Occupational and Environmental Medicine*, 62(5), 337-343. Retrieved on April 07, 2010, from <http://www.jstore.org/stable/27732522>
- Haidari., & Iqbal. (1996) .Health conditions in Pakistan. *Economic Review*, 1-14
- Islam, S.S., Velilla, A.M., Doyle, E.J., & Ducatman, A.M. (2001).Gender differences in work related injury/illness: Analysis of workers compensation claims. *American Journal of Industrial Medicine*, 39, 84-91.
- Landsbergis, P.A. (1988).Occupational Stress among Health Care Workers: A Test of the Job Demands – Control Model. *Journal of Organizational Behavior*, 9 (3), 217-239. Retrieved on April 12, 2010, from <http://www.jstore.org/stable/2488075>
- Maier, k. (2009). What Are the Most Common Occupational Health Hazards, Retrieved on December 22, 2009, from <http://www.wisegeek.com/what-are-the-most-common-occupational-health-hazards.htm>
- Messing, K., Punnett, L., Bond, M., Alexanderson, K., Pyle, J., Zahm, S., Wegman, D., Stock, S.R., & De Grosbois, S. (2003). Be the Fairest of Them All: Challenges and Recommendations for the Treatment of Gender in Occupational Health Research. *American Journal of Industrial Medicine*, 43, 618-629. doi: 10.1002/ajim.10225
- Mittman, D.E., Cawley, J.F., Fenn, W.H. (2002).Physician Assistants in the United States. *British Medical Journal*, 325 (7362), 485-487. Retrieved on June 06, 2010, from <http://www.jstor.org/stable/25452218>
- Nuwayhid, I.A. (2004). Occupational Health Research in Developing Countries: A Partner for Social Justice. *American Journal of Public Health*, 94 (11).
- Salie, F., & Gwagwa, T. (1995). Occupational Hazards. *Agenda Empowering women for gender equity*, (27), 15-20. Stable URL: <http://www.jstor.org/stable/4065966>
- Sadleir, B. (2010, May 11). Environmental and Occupational Health Issues in Hospitals Retrieved May 11, 2010, from www.tropmed.org/rreh/vol1_2.htm
- Shiao, J.S.C., McLawsy, Y.M.M.L., Huangz, K.Y., & Guox, Y.L. (2001). Sharps injuries among hospital support personnel. *Journal of Hospital Infection*, 49,262-267. doi:10.1053/jhin.2001.1097
- Shires, D.B. (1993). Health hazards in medical institutions Family physician's role in hospital occupational health. *Canadian family physician*, 39.
- Verbrugge, L.M. (1985).Gender and Health: An Update on Hypotheses and Evidence. *Journal of Health and Social Behavior*, 26 (3), 156-182. Retrieved on April 13, 2010, from <http://www.jstor.org/stable/2136750>
- World Health Organization. (2009). Women and Health Today's Evidence Tomorrow's Agenda .Switzerland - WHO Press. Retrieved from http://whqlibdoc.who.int/publications/2009/9789241563857_eng.pdf
- World Health Organization. (1946). WHO definition of Health. (WHO Publication No.2, p. 100). New York, WHO, Retrieved on June 12, 2010, from <http://www.who.int/about/definition/en/print.html>