

Occupational Health Hazards among Workers in Hospital Laundry Department at Benha City

Amira.R. El-Sayed¹, Mahboub.S.Abd EL Aziz², and Ahlam.E.Sarhan²

¹Nursing Supervisor in Sidi Salem Central Hospital

²Community Health Nursing, Dept. Faculty of Nursing, Benha Univ., Benha, Egypt

Email:- krmtmajd@gmail.com

Abstract

Background: Workers in hospital laundry have exhausting duties and are exposed to various environmental and work related problems. **The aim of the study:** was to assess the occupational health hazards among workers in Hospital Laundry Department at Benha City. **Research design:** A descriptive research design was utilized to conduct this study. **Setting:** The study was conducted at the laundry departments of Governmental and Non-Governmental Hospitals at Benha City. **Sampling:** A Convenience sample of all Hospital Laundry Workers 110 divided into 55 in Governmental Hospitals and 55 in Non-Governmental Hospitals was involved in this study. **Tools:** Two tools were used. **Tool I:** A structured interviewing questionnaire it consisted of four items: **A:** socio-demographic characteristics of the studied laundry workers. **B:** Job characteristics of the studied laundry workers. **C:** It was concerned with health problems among studied laundry workers. **D:** It was concerned with studied laundry workers knowledge about occupational health hazards and safety measures. **Tool II:** Observational checklist which consisted of two parts **A:** assess laundry workers practices regarding safety measures. **B:** Assess the workplace environment safety and sanitation condition. **Results:** 34.5% of the studied laundry workers in Non-Governmental Hospitals had poor knowledge about occupational health hazards. 92.7% of the studied laundry workers at Governmental Hospitals have health problems, while 85.5% of the studied workers at Non-Governmental Hospitals have health problems. 69.1 % of the studied laundry workers in Non-Governmental Hospitals had satisfactory regarding their total practices. **Conclusion:** the current study revealed that the majority of the studied laundry workers had health problems. Also illustrates that more than half of studied laundry workers in Governmental Hospitals had poor knowledge about occupational health hazards and the total practices levels of the studied laundry workers in Governmental Hospitals were unsatisfied. **Recommendation:** perform health education program for laundry workers about occupational health hazards and preventive measures.

Key words: Workers, Hospital Laundry, Occupational Health Hazards.

1. Introduction

Laundry is crucial to the appropriate operation of a hospital, without clean linens, hospitals would not be able to provide the same high quality care environment that patients expect and that is needed by regulations and quality guidelines. Although laundries in hospital settings are necessary to prevent hospital acquired infections and for the hospital activities in general, there is little concern about the workers' health and safety [1].

Linen and laundry is a recognized support service in healthcare settings. In hospitals, this term is used to refer to the clothing of patients, medical and paramedical personnel. In addition, the fabrics used in the operation theatres, beds, and trolleys as the mattresses, pillows, blankets, sheets and towels etc. in the name of patients care services are also included in the linen and laundry [2].

Occupational safety and health is a set of activities to prevent injuries and health problems to workers and to provide safe and healthy workplaces. The entire company is responsible for the health and safety of workers and others that are affected by its activities. This responsibility includes the promotion and protection of their physical, psychological and mental health [3].

Occupational health hazards refer to workplace factors with a potential for harm in terms of injury or ill

health. Hazards are classified in five categories: physical (noise, radiation, extremes of temperature, etc), ergonomic (mechanical), chemical (solid, liquid, and vapors), and biological (bacteria, viruses, etc), and psychosocial (psychological and social stressful factors). Exposure to any of these hazards can cause occupational diseases and work accidents [4].

The role of occupational health nurse is applying occupational health and safety measures to protect workers from being exposed to health hazards arising from the workplace. Employees should be protected from physical and psychological illnesses. It is the duty of management to ensure workers are protected from occupational hazards in the workplace [5].

Also, emphasize Infection Control (IC) universal precautions, especially for staff processing laundry. Otherwise, emphasis should be directed on the safe handling of dirty or soiled laundry from human secretions and that containing unnoticeable sharp objects, protect patients, and visitors from environmental aerosolizing bacteria and additional mechanical hazards [6].

Significance of the study:

Hospital laundry workers are exposed to different hazards and problems; there are a very small number of studies globally and locally concerned with their health, safety and hazards exposures. In Egypt there are

about 15716 cases have non-fatal occupational hazard. At the same estimation there are found that the numbers of injuries per 100000 workers was 13.8 for both sex male and female at Egypt (**International Labour Organization, 2021**). So this study is important to assess occupational health hazards among workers in Hospital Laundry Department.

2. Aim of the study:

This study aimed to assess the occupational health hazards among workers in Hospital Laundry Department at Benha City.

Research questions:

- What are health problems of the laundry workers related to their work in hospital laundry department?
- What are the studied workers knowledge regarding occupational health hazards related to hospital laundry department?
- What are the studied workers practices regarding occupational health hazards and safety measures?
- Is there a relation between workers' health problems and their practices related to safety measures for occupational health hazards?
- Is there a relation between knowledge and practices of the studied workers regarding occupational health hazards related to laundry department?

3. Subjects and method:

Research design:

A descriptive research design was utilized to conduct this study.

Setting:

The present study was conducted at laundry departments of Governmental Hospitals including: Benha University Hospitals, Benha Teaching Hospital, Health Insurance Hospital, Specialized Children Hospital, Psychiatric Health Hospital. Non-Governmental Hospitals including: Dar Elteb Hospital, Alraey Alsaleh Hospital, Aleman Alkhiry Hospital, Specialized Alkewity Hospital, Dar Alshefa Hospital, Ebn Sina Hospital and Dar Hawa Hospital in Benha City.

Sampling:

A convenience sample of all hospital laundry workers 110 divided into 55 in Governmental Hospital and 55 Non-Governmental Hospitals was involved in this study.

Two tools were used for data collection:

Tool I: A structured interviewing questionnaire: It was developed by the investigator based on reviewing related literatures. It was written in simple clear Arabic language. It consists of 4 items:

- A. It was concerned with socio-demographic characteristics of the studied laundry workers which include eight closed ended questions related to: age, sex, educational level, residence, marital status, number of family member, family type and monthly income.
- B. It was concerned with work characteristics of the studied laundry workers it consists of seven closed ended questions related to: work place, type of work, years of experience, daily working

hours, number of working days per week, name of the training courses, number of training courses have been trained on.

- C. It was designed to assess health problems among laundry workers consists of seven closed ended questions about medical health history for chronic disease, virus analysis, hepatitis B vaccination, The health problems you experienced during work period, smoking, number of years of smoking, healthy habits as (doing sports, the number of hours of sleep, personal hygiene, nutrition, recreational activities).
- D. It was concerned with the studied laundry workers' knowledge regarding occupational health hazards and safety measures which included three items:
 - Knowledge of the studied laundry workers about occupational health hazards which included seven closed ended questions: definition of occupational hazard, types of occupational health hazards, physical (natural) hazards, ergonomic hazards, biological hazards, chemical hazards and psychological hazards.
 - Workers knowledge about the laundry which included four closed ended questions: the machines used in the laundry, separation of laundry, which separates dirty laundry from clean laundry and cleaning the soiled area.
 - Workers knowledge about occupational safety and health which included nine closed ended questions: definition of occupational safety and health, objectives of occupational safety and health, occupational safety and health equipment in the laundry, occupational safety and health equipment received, training to use these equipment, responsible for explaining the use of these equipment, reasons for workers' non-compliance with these equipment, methods of preventing occupational hazards, sources of information.

Scoring system:

The scoring system for laundry workers knowledge was calculated as follows: (2) score for a correct and complete answer, while (1) score for a correct and incomplete answer, and (0) score for don't know any questions of knowledge. The score of items was summed up and the total divided by the number of items giving a mean score for the part. These scores were converted into a present score. The total scores of knowledge= 19 points. The total score was considered good when score of total knowledge $\geq 75\%$ (≥ 29 points), while considered average if it equal 50- $<75\%$ ($19 < 29$ points) and considered poor when the total score was $<50\%$ (< 19 points). Sources of information didn't included in scoring system.

Tool (II): It was concerned with an observational checklist which included two items:

- a. It was concerned with observational practices of studied laundry workers (**The Egyptian National Guide to Infection Control, 2020**) regarding safety measures which developed to 4 items:

A. **Wearing personal protective equipment.** included seven steps: wearing a work uniform (avarol), wearing ahead covering, wearing eye glasses, wearing gloves, wearing a respiratory mask, wearing ear plugs and wearing slip-resistant shoes (boot).

B. **Transporting soiled clothes** included nine steps: collect dirty clothes in bags designated for these clothes, carry soiled clothes carefully and away from the body and put them in the bag designated for them, fill only three quarters of the bag and close tightly, wet clothes are placed in non-leaking bags, make sure that there are no sharp objects inside the clothes, transport solid clothes in a special path, workers wear thick dirty laundry gloves and a protective apron when sorting dirty clothes, deliver and receive soiled linen through the laundry register and clean all carts, containers, covers and liners and disinfected after the cart is emptied and before any next use.

C. **Washing stage** included five steps: add soap and disinfectant according to the manufacturer's instructions, detergents and disinfectants are approved by the infection control department, use disinfectant concentration (150ppm) in the case of washing at a low temperature (22-25) after washing with the appropriate detergents, use hot water at a temperature of 71 degrees Celsius and circulate for at least 25 minutes for textiles with high temperature tolerance and use an acid such as vinegar in washing textiles because it prevents the textiles from yelking and helps kill bacteria.

D. **Cleaning clothes after washing** included six steps: make sure that the folding table is clean, store clean clothes on shelves and in a dry, clean area away from the surface of the ground until they are distributed to hospital departments, re-wash the clothes if they have not been used within three months, sort the clean laundry out of the washing machine to re-wash the stained linens, deliver and receive clean linens through the laundry register and take out the clean laundry from its direction into the clean laundry cart.

Scoring system:

Each step of the studied laundry workers' observational practices has two level of answer: done or not done: these were respectively 1, 0. the scores of the items were summed up and the total divided by the number of the items, giving a mean score for the part. Total practices score = (27 points). The total practices score were considered satisfactory when score of total practices $\geq 80\%$ (≥ 21 points) and considered unsatisfactory if score of total practices $< 80\%$ (21 points).

- b. Assess laundry environment which included these items: laundry in ground floor, two separated area clean and dirty, lightning, ventilation, floor smooth not cracked, places for hand washing,

cleanliness of laundry, place for go out in case of emergency and availability of fire extinguisher.

Scoring system:

Each item had choices of answer present and not present. These were respectively scored 1, 0. The scores of the items were summed up and the total divided by the number of the items, giving a mean score for the part. Total environment score = (14 points). The total environment score considered sanitary when score of total environment $> 80\%$ (> 11 points) and considered unsanitary when score of total environment $< 80\%$ (< 11 points).

Validity of the tools:

The tools validity was done by three of Faculty's Staff Nursing experts from Community Health Nursing Specialties who reviewed the tools for clarity, relevance, comprehensiveness, applicability and reliability. Modifications were done accordingly based on their response.

Reliability of the tools:

The reliability of the tools was done by Cornbrash's Alpha coefficient test which revealed that which the two tools consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool. The internal consistency of knowledge was 0.772 and practices was 0.928

Administrative approval:

Official letter was obtained and delivered from the Dean of the Faculty of Nursing, Benha University directed to the Administrators of pre-mentioned settings where the study was conducted. After obtaining the approval from the Administrators of pre-mentioned settings for conducting the present study, the investigator started to communicate with the study subjects and explained the aim of the study to the study subjects to obtain their approval and cooperation for data collection.

Data collection procedures:

Preparatory phase:

An extensive review of the current and past available national and international references related to the research title was done, using a journal, textbooks and internet search was done. This was necessary for the investigator to be acquainted with and oriented about aspects of the research problem as well as to assist in the development of data collection tools. This took time for preparing the tools about 4 months from December to March.

Field work:

The study conducted at a period of four months which from the beginning of March 2022 to end of June 2022. The study was conducted by the investigator for the studied sample in the selected settings laundry department. The investigator visited hospital laundry respectively on Saturdays and Tuesdays. Each hospital laundry were visited two days per week from 8 a.m. to 12p.m to collect data, the average number of interviewed laundry workers was between 4-6 workers/day depending on their responses

to the interviewers, each interview workers takes about 30-45 minutes to fill the sheet depending upon their understanding and responses as well as distribute the questionnaire. The investigator met the workers, introduced herself and explained the purpose of the questionnaire. During the interview, the investigator read each items on the tool and explain its meaning to the workers, then the investigator wrote their answers. The observation check to assess laundry workers practices related to protect themselves and assess the work place environment safety and sanitation condition in different days and at different times.

Statistical design:

All data collected were organized, tabulated and analyzed by using appropriate statistical test. The data were analyzed by using the Statistical Package for Social Science (SPSS version). Which was used frequencies and percentages for quilt descriptive data, and chi square co-efficient χ^2 and p-value was used for relation test, and mean and standard deviation was used for quantitative data, Pearson correlation coefficient (r) was used for correlation analysis and degree of significance was identified.

Statistical significance was considered:

The observation difference and were considered associated as the following (p-value)

- High statistical significance $P < 0.001$
- Statistical significance $P < 0.05$
- No significance $P > 0.05$

4. Results:

Table (1): Shows that 38.2% of the studied laundry workers in Governmental Hospital aged from $30 < 40$ with mean age of $\pm SD$ 43.90 ± 7.62 years old, while 41.8% of laundry workers in Non-Governmental Hospital at the same age with mean age of $\pm SD$ 41.84 ± 6.82 years old. Regard sex 60% of the studied workers in Governmental Hospital were female, while 63.6% of the studied workers in Non-Governmental Hospital were female too. Regard educational level 41.7% of the studied workers in Governmental Hospital could read and write, while in Non-Governmental Hospital were 49.1%. Regard monthly income 85.5% of the studied workers in Governmental Hospital had enough income level, while in Non-Governmental Hospital were 81.8%. There were statistical insignificance differences between studied laundry workers socio-demographic characteristics at Governmental and Non- Governmental Hospitals

Table (1): Frequency distribution of the studied laundry workers regarding their socio-demographic characteristics at Governmental and Non-Governmental Hospitals (n=110).

Socio-demographic characteristics	Governmental (n=55)		Non-Governmental (n=55)		Chi-square	
	No.	%	No.	%	X ²	P-value
Age						
30 < 40	21	38.2	23	41.8	1.310	.519
40 < 50	19	34.5	22	40.0		
50 ≤	15	27.3	10	18.2		
Min –Max	33-56		32-55			

Table (2): Reveals that 80% of the studied laundry workers in Governmental Hospital work in folding the linens, while in Non-Governmental Hospital were 52.7%. Also 60% of the studied workers in Governmental Hospital work more than 8 hours per day, while 50.9% were in Non-Governmental Hospital. As regard number of working days per week 87.3% of laundry workers in Governmental Hospital work more than five days, while 94.5% were in Non-Governmental Hospital. Also 45.5% of the studied workers in Governmental Hospital has previous experience in the laundry more than 10 years, while 43.6% were in Non-Governmental Hospital. There were statistical insignificance differences between studied laundry workers work characteristics at Governmental and Non- Governmental Hospitals

Figure 1: Illustrates that 92.7% of the studied laundry workers at Governmental Hospitals have health problems, while 85.5% of the studied workers at Non-Governmental Hospitals have health problems.

Figure 2: Shows that 54.5% of the studied laundry workers in Governmental Hospitals had poor knowledge about occupational health hazards, while in Non-Governmental Hospitals were 34.5%. Also 36.4% of the studied workers in Governmental Hospitals had average knowledge about occupational health hazards, while in Non-Governmental Hospitals were 38.2%.

Figure 3: Shows that 36.4% of the studied laundry workers in Governmental Hospitals had satisfactory regarding their total practices, while in Non-Governmental Hospitals were 69.1%. Also 63.6% of the studied laundry workers in Governmental Hospitals had unsatisfactory regarding their total practices, while in Non-Governmental Hospitals were 30.9%.

Table (3): Shows that there was highly statistically significance relation between the studied laundry workers health problems and their practices related to safety measures for occupational health hazards in Non-Governmental Hospitals ($p < 0.001$).

Table (4): Shows that there were statistically significance correlation between total knowledge and total practices among the studied workers in governmental hospitals ($p < 0.05$), while there was highly statistically significance between total knowledge and total practices among studied workers in non-governmental hospitals ($p < 0.001$).

Mean \pm SD	43.90 \pm 7.62		41.84 \pm 6.82			
Sex						
Male	22	40.0	20	36.4	.154	.695
Female	33	60.0	35	63.6		
Educational level						
Can't read or write	10	18.2	7	12.7	1.049	.958
Can read and write	23	41.7	27	49.1		
Primary Education	13	23.6	13	23.6		
Secondary Education	3	5.5	3	5.5		
Technical diploma (Agricultural, Industrial, Commercial)	3	5.5	2	3.6		
Above average education(institutes)	3	5.5	3	5.5		
Residence						
Rural	47	85.5	45	81.8	.266	.606
Urban	8	14.5	10	18.2		
Marital status						
Single	14	25.5	13	23.6	.049	.825
Married	41	74.5	42	76.4		
Monthly income						
Not enough	8	14.5	10	18.2	.266	.606
Enough	47	85.5	45	181.8		

Table (2) Frequency distribution of the studied laundry workers regarding work characteristics at Governmental and Non-Governmental Hospitals (n=110).

Work characteristics	Governmental (n=55)		Non-governmental (n=55)		Chi-square	
	No.	%	No.	%	X ²	P-value
Job Type						
Assemble	8	14.5	10	18.2		
Washing	38	69.1	42	76.4		
Drying	23	41.8	43	78.2	3.954	.785
Ironing	33	60.0	43	78.2		
Folding	44	80.0	29	52.7		
Distributing	8	14.5	6	10.9		
Working hours						
From 6-8 hours	22	40.0	27	49.1	.920	.337
More than 8 hours	33	60.0	28	50.9		
Working days						
Four days	7	12.7	3	5.5	1.760	.185
Five days or more	48	87.3	52	94.5		
Number of years of experience						
From 1 < 5 years	17	30.9	17	30.9	.057	.972
From 5 < 10 years	13	23.6	14	25.5		
10 years and more	25	45.5	24	43.6		
Training courses						
Knowing the nature of the work and knowing the risks that may occur	24	57.1	23	52.3	1.751	.941
Safe work practices and procedures, including standard precautions	28	66.7	26	59.1		
How to use personal protective equipment	36	85.7	37	184.1		

*Statistically significance $p < 0.05$

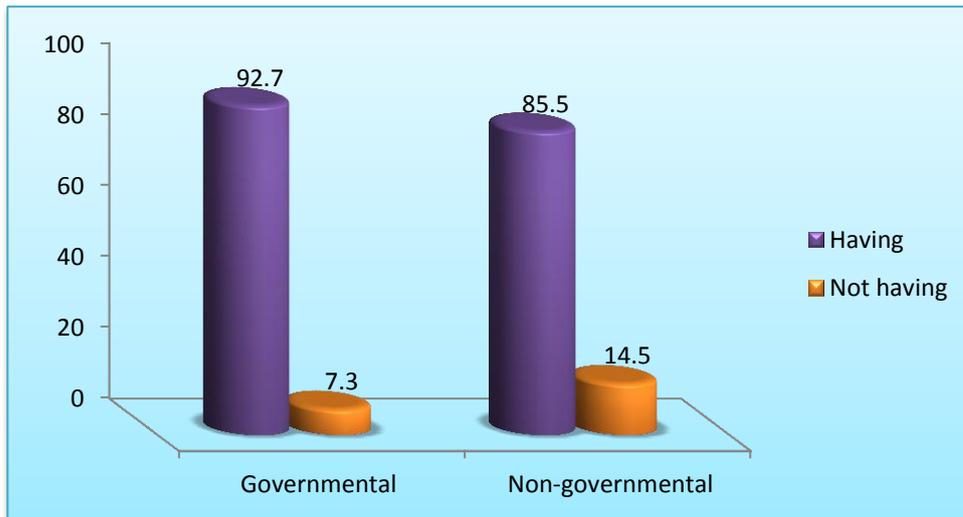


Fig. (1) Percentage distribution of the studied laundry workers regarding their health problem at governmental and non-governmental hospitals (n=110)

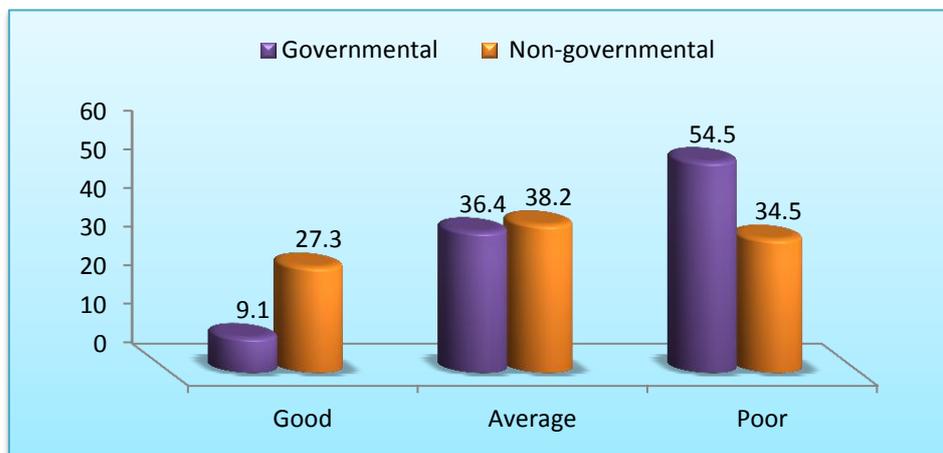


Fig.(2) Percentage distribution of the studied laundry workers regarding total knowledge about occupational health hazards at Governmental and Non-Governmental Hospitals (n=110).

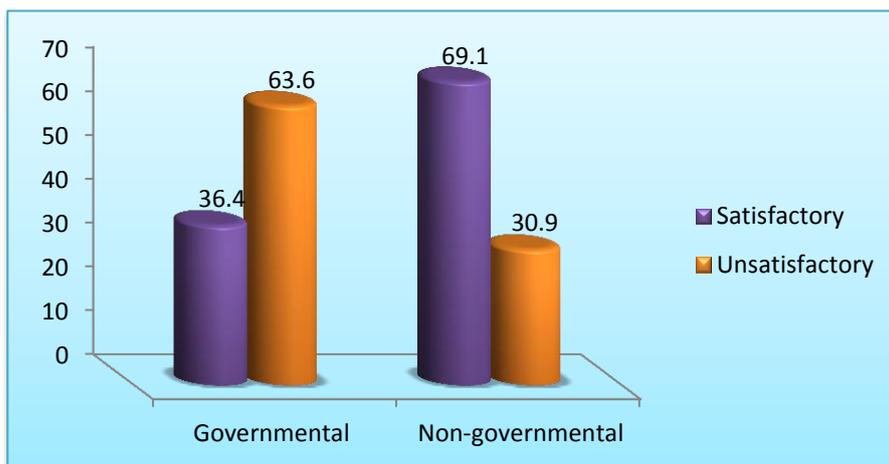


Fig.(3) Percentage distribution of the studied laundry workers regarding total observational practices items at Governmental and Non-Governmental Hospital (n=110).

Table (3) Statistically relation between health problems of the studied laundry workers and total practices related to prevention of occupational health hazards in Governmental and Non-Governmental Hospitals.

Health problem	Governmental (55)						Non-Governmental (55)					
	Un Satisfactory (n=35)		Satisfactory (n=20)		Chi-square		Un Satisfactory (n=17)		Satisfactory (n=38)		Chi-square	
	No.	%	No.	%	X ²	P-value	No.	%	No.	%	X ²	p-value
Not having health problem	2	5.7	2	10.0	0.347	0.556	7	41.2	1	2.6	14.03	.000**
Having health problem	33	94.3	18	90.0			10	58.8	37	97.4		

**Highly statistically significance relation $p < 0.001$

Table (4) Correlation between total knowledge and total practices among the studied laundry workers in Governmental and Non-Governmental Hospitals.

Item	Total Knowledge			
	Governmental		Non-Governmental	
	r.	p-value	r.	p-value
Total Practices	0.499	0.002*	0.733	0.001**

**Highly statistically significance correlation $p < 0.001$ * Statistically significance correlation $p < 0.05$.

5. Discussion:

According to socio-demographic characteristics of studied laundry workers. This study showed that more than one third of the studied laundry workers their age were from 30 < 40 years with mean age was 43.90 ± 7.62 in Governmental Hospitals and 41.84 ± 6.82 in Non-Governmental Hospitals, three fifth of them were female, two fifth of them could read and write, the majority of them lived in rural area, the majority of them were married, the majority of them had enough monthly income (table 1).

Regarding job type. This study illustrated that majority of studied laundry workers worked in folding and more than two third of them worked in washing in Governmental Hospital (table 2). This result disagree with Hisama & Anuaa (2018), who studied "Noise Exposure and Hearing Symptoms among Laundry Workers and Mechanical Cutters in A Teaching Hospital" Malaysia, on sample 37, as reported that more than one third of studied laundry workers (35%) worked folding and quarter of them (25%) worked in washing.

Regarding working hours / day of studied laundry workers. The present study reveals that more than half of studied laundry workers in both Governmental and non-Governmental Hospitals worked more than 8 hours /day (table 2). This study disagree with Vijay Anand et al., (2019), who studied "Prevalence of

Wrist, Neck and Shoulder Pain Symptoms among Ironing Workers in Occupational Laundry Shop" India, on sample 300, as reported that less than one fifth (16.3%) of studied laundry workers worked more than 8 hours. This might be due to policy of work in laundry at Benha hospitals.

Concerning working days/ week, the present study illustrates that nearly all of studied laundry workers in both Governmental and non-Governmental Hospitals worked five or more days/ week. In addition to years of experience, the present study illustrates that more than two fifth of studied laundry workers had 10 years or more experience in laundry in both Governmental and non-Governmental Hospitals (table 2). This result in similar with the study conducted by Vijay Anand et al., (2019), as reported that the majority of studied laundry workers working more than five days / week and approximately two fifth (46%) of them had >10 years previous experience in the work. This might be due to the laundry workers need to work over time for more money.

The current study reveals that the majority of studied laundry workers in both Governmental and Non-Governmental Hospitals had occupational health problems (figure 1). This result was supportive with the study conducted by Michael et al., (2017). who studied "Assessment of Environmental Contamination with Pathogenic Bacteria at A Hospital Laundry

Facility". USA, on sample 110. As reported that more than two third of studied laundry workers reported health problems after starting work in hospital. This might be due to exposure them to many hazards during work.

The present study illustrates that more than half of studied laundry workers in Governmental Hospitals had poor knowledge about occupational health hazards (figure 2). This result is similar to study conducted by **Okhawere, (2020)**, who studied "Occupational Hazards and Safety Measures among Healthcare Workers in A Tertiary Health Institution in Southern Nigeria" on sample 163. As reported that half of sample (50.9%) had poor knowledge of occupational hazards. This might be due to lack of level of health education.

The present study illustrates that more than three fifth of the total practices levels of the studied laundry workers in Governmental Hospitals unsatisfactory regarding occupational health hazards during work, while more than two thirds of the studied laundry workers in Non-Governmental Hospitals satisfactory regarding their total practices (figure 3). This result similar to a study conducted by **Happy et al., (2022)**, as reported that more than three fifth (61.7%) of studied laundry workers in public hospital were dissatisfied whereas maximum respondents more than two thirds (73.68%) of private hospital were satisfied. This might be due to lack of personal protective equipment in Governmental Hospital.

Concerning statistical relation between studied laundry workers health problems and their practices related to safety measures for occupational health hazards (table 3). The present study reveals that there was highly statistically significance relation between the studied laundry workers health problems in Non-Governmental Hospitals and their practices related to safety measures for occupational health hazards. This result supportive by the study conducted by **Michael et al., (2017)**, as reported that there were highly statistically significant relations between laundry workers' health problem and their practices related to safety measures for occupational health hazards.

Regarding statistical correlation between the total score of knowledge and the total score of practices of studied laundry workers (table 4) the present study revealed that there were statistically significance correlation between total practices level of studied laundry workers in Governmental Hospitals and their total knowledge level, this result supportive with the study conducted by **Abd El-Wahed et al., (2020)**, as reported that there were statistically significance correlation between total practices level of studied laundry workers . This might be due to level of knowledge reflected on the level of practices which lead to minimize occurrence of health hazards among laundry workers.

6. Conclusion

The present study revealed that there was highly statistically significance relation between the studied laundry workers health problems and their practices related to safety measures for occupational hazards in Non-Governmental Hospitals. The present study revealed that there were statistically significant relation between the total knowledge level of the studied laundry workers in Governmental Hospitals and their marital status and monthly income, while in Non-Governmental Hospitals there were a statistically significant relation between total knowledge scores and their monthly income and educational level.

There were statistically significance relation between total practices level of the studied laundry workers in Governmental Hospitals and their sex, while there were statistically insignificance relation in Non-Governmental Hospitals. The present study revealed that; there were statistically significant positive correlation between total knowledge and total practices among the studied workers in Governmental Hospitals, while there was highly statistically significant positive correlation between total knowledge and total practices among studied workers in Non-Governmental Hospitals.

7. Recommendations:

Based on the finding of this study, the following points recommended:

- Perform health education program for laundry workers about occupational health hazards and the preventive measures.
- Distribute posters in workplace setting to decrease workplace hazards.
- Further studies need to be applied the same study on the large sample size to prevent occupational health hazards.

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