

A Study to Assess the Knowledge and Practice Regarding Environmental Sanitation among Sanitation Workers of GNSU, Jamuhar, Rohtas Multicloud Based Backup and Disaster Recovery Service

Karan Kumar, Imtiyaz Ahmad, Chandan Kumar, Ms. Shweta Kumari
Narayan Nursing College, Jamuhar, Sasaram, Bihar

Abstract: *Environmental sanitation is a set of actions or a fundamental process of collecting and safely disposing all kinds of waste within the environment with the intention of protecting and promoting the individual health and quality of life of communities. Environmental sanitation generally includes the provision of facilities and services for the safe disposal of waste, the maintenance of hygienic conditions and the prevention of diseases.*

Objectives: To assess the knowledge and practice regarding environmental sanitation among sanitary workers of GNSU, Jamuhar, Sasaram. To find out association with selected demographical variables and knowledge & practice regarding sanitation. And total sample of the research is 30.

Methodology: The research approach was quantitative approach and research design is non-experimental research design- descriptive design. The study was conducted on sanitary worker who are working in GNSU campus Jamuhar, Sasaram. Convenience sampling technique adopted. Number of sample size is 30, those who are working as sanitary worker. Data collection was done by the survey by the researcher. Data was analysed with quantitative and inferential statistics came up with the following findings. Result: The result shows that majority of sample (16.66%) sanitary workers have poor knowledge, (63.33%) sanitary workers were having average knowledge and (20%) sanitary workers were having good knowledge.

Recommendation: The findings of the present study can be used as a guide of future research. Interventional study can be undertaken to give knowledge to the sanitary workers. A study can be conducted in preventing aspect health issue. To make the recommendation to the government to arrange compulsory medical check-up on the yearly basis for sanitary workers.

Conclusion: The present study was aimed at assessing the level of knowledge among sanitary workers. The Relevant data collected statically based in the objectives of the study. There 30 sample (16.66%) workers were having poor knowledge, (63.33%) workers were having average knowledge and (20%) workers were having good knowledge. By assessing knowledge level of workers, we are going to know that majority of the workers having average knowledge regarding environment sanitation. Statically there is no any significant association was found.

Keywords: Sanitation workers, knowledge and practice of sanitary workers.

I. INTRODUCTION

Environmental sanitation is a set of actions or a fundamental process of collecting and safely disposing all kinds of waste within the environment with the intention of protecting and promoting the individual health and quality of life of communities. Environmental sanitation generally includes the provision of facilities and services for the safe disposal of waste, the maintenance of hygienic conditions and the prevention of diseases (1)

Environment is one of the determinants of health of individual, family and community at large people's health is affected by the quality of place they live and work and air they breathe, the water they drink and the food they consume. It is the environment which predisposes people to various agents it may have and may cause any disease or health problems. The quality of environment is deteriorating very fast especially because of population explosion, industrialization and urbanization, deforestation, automobiles, nuclear technology and green revolution. The term environment has been

derived from a French word “Environia” means ‘to surround’. It refers to both a biotic (physical or non-living) and biotic (living) environment. The word environment means surroundings, in which organisms live. Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage or wastewater. (2)

The working conditions of sanitation laborers have remained practically unaltered for longer than a century. Aside from the social barbarities that these laborers face they are presented with certain medical issues by their occupation. When it comes to street cleaners, they have to overcome many issues revolving around sanitation infrastructure and the arrangement of services related to sanitation. They are the absolute most weak and vulnerable workforce. They are extremely undetectable, unquantified and segregated, and face considerable difficulties which come from this major absence of affirmation. Sanitation laborers are exposed to occupational and environmental hazards possibly resulting in health ailments, injury, and even death. (3)

Sanitation in the sense of maintaining or living with a healthy environment for the wellbeing of own family includes taking healthy food, using fine clothing, living in the clean house, using sanitary latrine, and living with medical care. Earlier, Universal Declaration of Human Rights, Article 25(1) motivated the people to maintain standard of living in the adequate healthy environment, and later, International Economic Social and Cultural Right in the Article 11(1) interpreted this objective. Sanitation remains one of the biggest development challenges of our time and a long-neglected issue associated with taboos and stigma. (4)

Environmental sanitation envisages promotion of health of the community by providing clean environment and breaking the cycle of disease. It depends on various factors that include hygiene status of the people, types of resources available, innovative and appropriate technologies according to the requirement of the community, socioeconomic development of the country, cultural factors related to environmental sanitation, political commitment, capacity building of the concerned sectors, social factors including behavioural pattern of the community, legislative measures adopted, and others. India is still lagging far behind many countries in the field of environmental sanitation. The unsanitary conditions are appalling in India and need a great sanitary awakening similar to what took place in London in the mid-19th century. Improvement in sanitation requires newer strategies and targeted interventions with follow-up evaluation. The need of the hour is to identify the existing system of environmental sanitation with respect to its structure and functioning and to prioritize the control strategies according to the need of the country. These priorities are particularly important because of issue of water constraints, environment-related health problems, rapid population growth, inequitable distribution of water resources, issues related to administrative problems, urbanization and industrialization, migration of population, and rapid economic growth. (5)

The effects of poor water, sanitation, and hygiene affect every aspect of health and development, hinder economic and social development, and constitute a major hurdle to poverty alleviation. Many communicable diseases can be effectively managed by improving WASH practices. Waterborne disease prevalence can be reduced through implementing the 4 three key WASH practices. Safe disposal of faeces and hand washing with soap at critical times can reduce prevalence of waterborne diseases by 30% and 40%, respectively. Likewise, safe treatment and storage of drinking water can reduce the prevalence of waterborne diseases by 30–50%. Globally, 2.3 billion people lack basic sanitation (892 million people practiced open defecation), 844 million people lack basic drinking water, and 2.5 million people lack of improved sanitation. (6)

The working conditions of sanitation workers have remained practically unaltered for longer than a century. Aside from the social barbarities that these laborers face they are presented with certain medical issues by their occupation. Sanitation workers do not use PPE even if it is provided. The reason which motivates them to avoid using it is the misconception that using any kind of PPE while at work means that they are no longer physically strong enough and able to endure the strenuous and challenging work of being a sanitary worker, which causes fear of losing their job. The PPE provided by various institutions may not be adequate, and also, they are not provided frequently, even after the PPE gets torn or damaged and inappropriate to use, which is against the safety protocol. Apart from this, the economic state of workers makes this equipment unaffordable to them. These bunches of existing problems in relation to the use of PPE in turn expose the sanitation health workers to hazardous materials and diseases which are preventable with the use of simple protective equipment to some extent. The employee plays a major role in the occupational hygiene program. They are

excellent sources of data on work processes, methods, and the ones who can identify apparent dangers of sanitation workers' everyday tasks. (7)

Proper sanitation promotes health, improves the quality of the environment and thus, the quality of life in a community. Sanitation refers to the safe collection, transportation, treatment and disposal of human wastes. In developing countries, improvements in practices of disposing of human excreta are crucial to raising levels of public health. An increasing amount of literature suggests that health problems result from the lack of sanitation facilities, especially among the urban poor living in overcrowded informal settlements. Invariably, it is the poor who suffer the most from the absence of safe water and sanitation because they lack not only the means to provide such facilities but also the information on how to 5 minimize the ill-effects of the unsanitary conditions in which they live. As a result, the negative effects of unsanitary living conditions lower the productive potential of the people who can least afford it. (8)

The term sanitation refers to adequate treatment and disposal of human excreta and sewage, and provide clean drinking water. The aim of sanitary system is protecting human health by providing safe and clean environment. It helps to prevent transmission of diseases which are spreading through faecal-oral route. Sanitary workers are protecting the society from diseases such as diarrhoea, ascariasis, cholera, hepatitis, poliomyelitis, schistosomiasis and trachoma with their effective services. Sanitary services are given by the sanitary workers for the betterment of human health. Sanitary workers are doing the work such as sweeping streets, collecting waste from house to house and streets, latrine or pit cleaning, cleaning school toilets, public toilets, toilets of municipalities, government and private offices, operating waste collecting trucks, management of faecal sludge, desludging the septic tank, cleaning sewer, cleaning manholes, cleaning sewage treatment plants and handling waste water and sludge at sewage treatment plants. Sanitary workers are not concentrating on their own health and nutritional status due to lack of awareness. There is a need to enrich the knowledge of workers regarding prevention of health problems, protection from health issues and promotion of their health. The employer has to ensure that workers have undergone training before placement in the job and also, they must be provided with proper guidelines. Workers must get adequate facilities in the working area. Sanitary workers must be provided with personal protective equipment and insisted to use it properly. Regular medical check-up, vaccination and follow up are very important to protect the sanitary workers. (9)

Sanitation work refers to the task of disposing waste in a hygienic manner to avoid diseases. The workers involved in sanitation work were referred as sanitary workers. Traditionally the name assigned to them was scavengers. It has changed into sanitary workers as per the government order issued in the year 1995. Though the people from all community may join this job as per the order issued by the Tamil Nadu Government, majority who join this job were from scheduled caste. 6 Even though the other community people joined the work, they send SC workers to do their job by giving them a meagre amount. The working conditions of the sanitary workers were very pathetic. They have to handle wastes without masks, gloves and boots. They have been given only brooms and tin plates for handling wastes. Due to their practice of unhygienic handling of waste they are vulnerable to many health risks. Thus, the improper management of solid waste has not only been a risk to environment but also to workers engaged in handling the wastes. Both direct and indirect health risks have been posed to sanitary workers by the unhygienic way of handling of wastes without proper safety protectors. (10)

1.1 Objectives of the Study

To assess the knowledge level regarding environmental sanitation with selected sociodemographic variables.

To associate the knowledge level regarding environmental sanitation with selected sociodemographic variables.

1.2 Research Hypothesis

H1: - There will be significant difference between level of knowledge on environmental sanitation and practice of worker regarding environmental sanitation

II. MATERIAL AND METHODS

This study is to assess the knowledge and practice regarding environmental sanitation of sanitary workers of GNSU, Jamuhar

Research Approach: Quantitative Approach

Research Design: Non-Experimental Research Design- Descriptive design

Setting of Study: The study was conducted on GNSU campus Jamuhar , Sasaram

Population:

Target Population: The target population of the study included sanitation workers of GNSU, Jamuhar, Rohtas, Bihar

Accessible Population: The accessible populations are sanitation workers who are present during the time of data collection. sample consist of 30 sanitary workers

Sampling Technique: Convenience sampling technique

III. DESCRIPTION OF THE TOOL

Selection A: Demographical tool under: age, gender, religion, education, marital status, family type, monthly income of the workers, employment

Selection B: Self-structured questionnaire the questionnaires assess the knowledge level of sanitary workers. Select any one of the alternative responses to indicate the extent of accuracy to which each statement describes the knowledge and practice of workers behaviour and experiences about various aspects of life to estimate the level of your knowledge add up the scores on all the statements. For each correct answer there will be 1 mark and for every incorrect answer there will be 0 marks. There are 10 questions for knowledge.

Section C: Checklist questions for practice

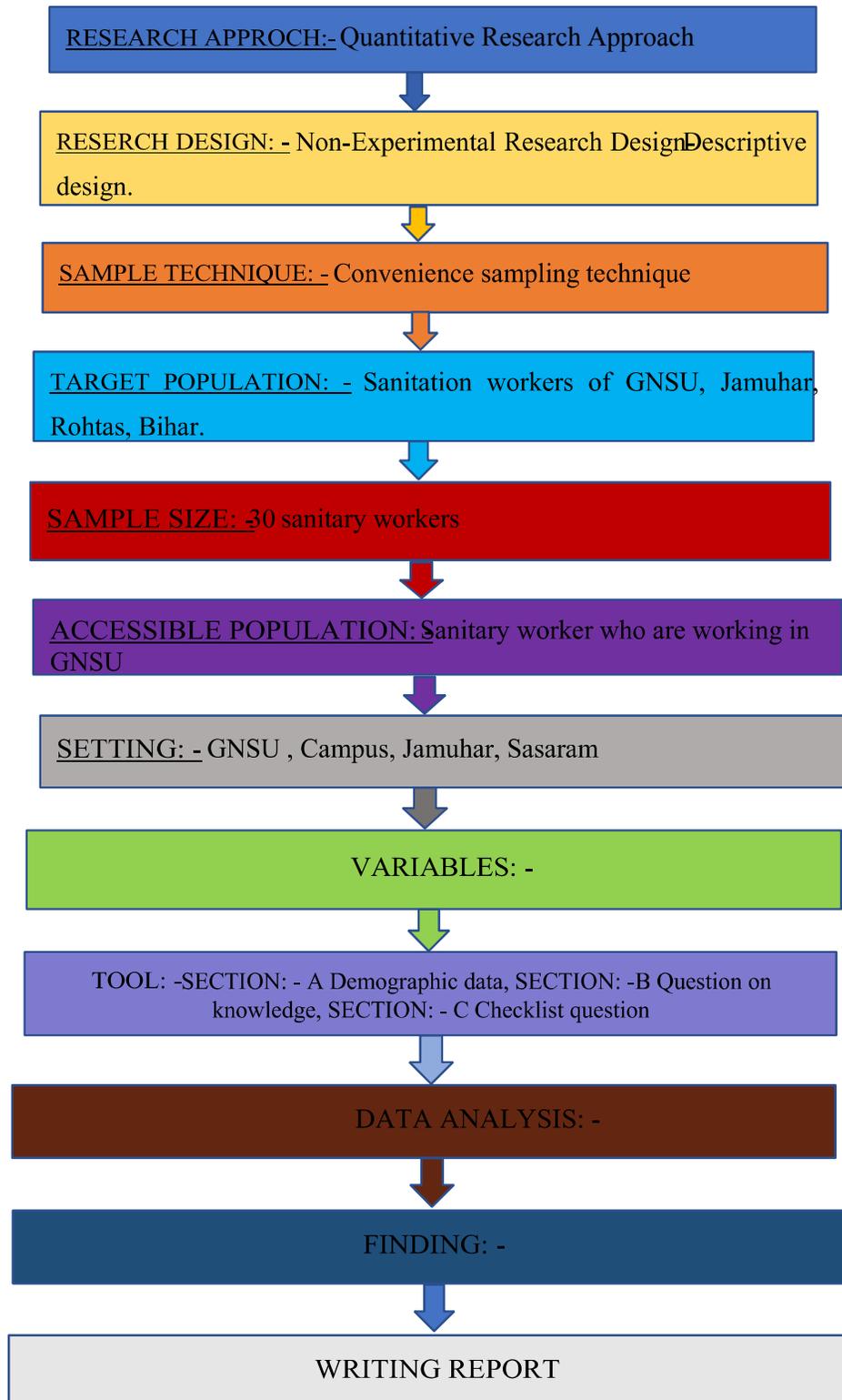
There are 11 questions for practice, & and for checklist practice questions there will 1mark for each correct answer and 0 mark for incorrect answer.

Score for Checklist Practice Question:

- 1-3 – Inadequate
- 4-7 – Moderate knowledge
- 8-11- Adequate knowledge

3.1 Ethical Approval

This study was approved by the Institutional Ethical Committee of Gopal Narayan Singh University, Jamuhar, Rohtas (Bihar) on 14th Feb 2022. Written permissions were taken from the hospital authority. Also participants gave their consents through their signature on the consent form before initiation of the session. All survey data were stored in accordance with national legislation and institutional policies. Confidentiality of patient information was maintained.



Section – A

Demographical variable data

DEMOGRAPHICAL DATA	TOTAL SAMPLE	SAMPLE IN PERCENTAGE
Q1. AGE		
18-30 years	9	30%
31-42 years	20	66.66%
43-55 years	1	3.33%
Above 55 years	0	0%
Q 2. GENDER		
Male	23	76.66%
Female	7	23.33%
Transgender	0	0%
Q 3. RELIGION		
Hindu	30	100%
Muslim	0	0%
Sikh	0	0%
Cristian	0	0%
Other	0	0%
Q 4. EDUCATION		
No formal education	7	23.33%
Primary education	17	56.66%
Intermediate	5	16.66%
Other	1	3.33%
Q 5. MARITAL STATUS		
Married	30	100%
Unmarried	0	0%
Divorced	0	0%
Other	0	0%
Q 6. FMILY TYPE		
Nuclear Family	27	90%
Joint Family	3	10%
Extended Family	0	0%
Q 7. MONTHLY INCOM OF THE WORKER'S		
Below the 10,000	12	40%
10,001 to 15,000	18	60%
15,000 to 20,000	0	0%
Q 8. EMPLOYMENTS		
Full time	30	100%
Part time	0	

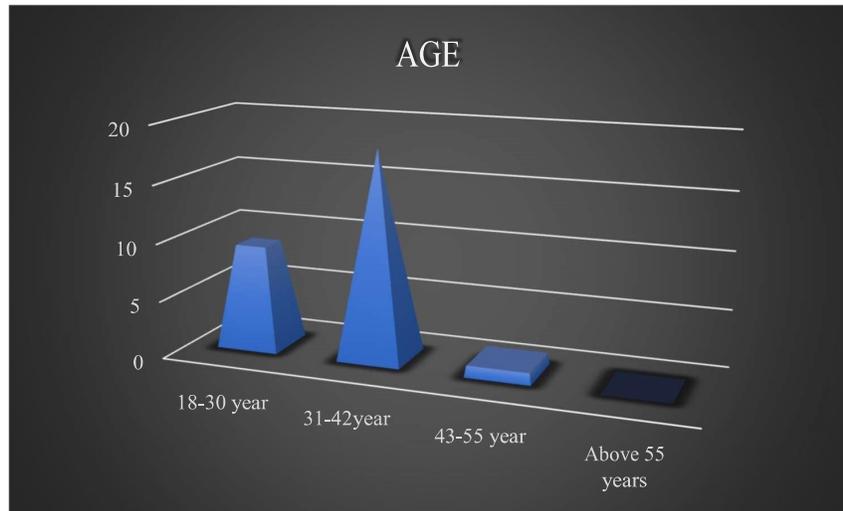


Fig: 4.1: Age distribution of the workers

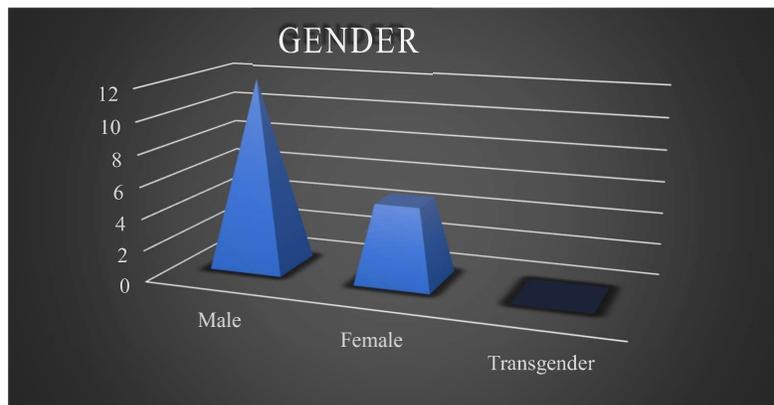


Fig: 4.2 Gender distribution of workers

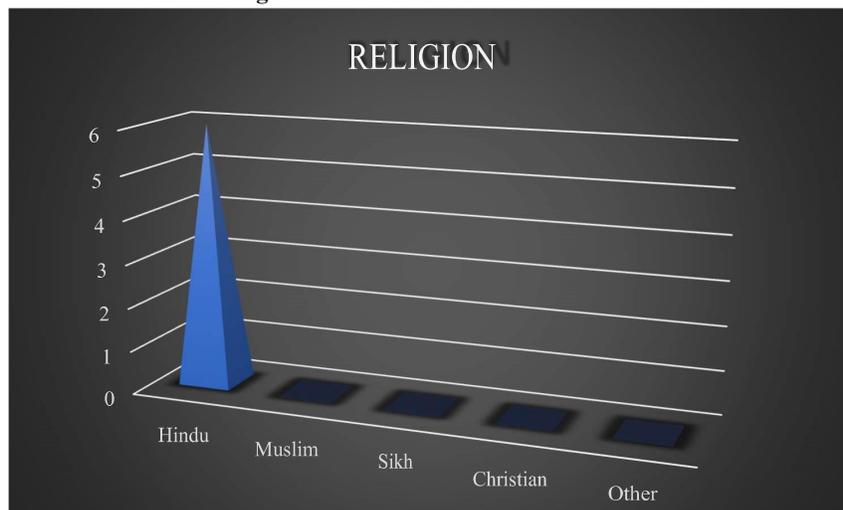


Fig: 4.3 Religion distribution of workers

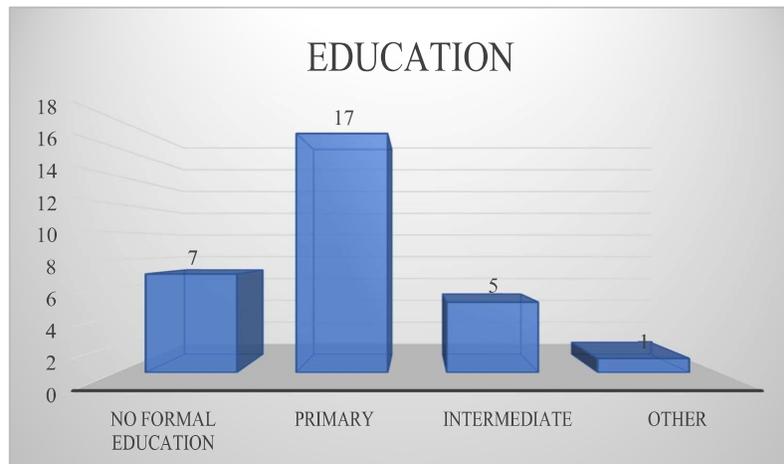


Fig: 4.4 Education of the workers



Fig: 4.5 Marital status of the workers

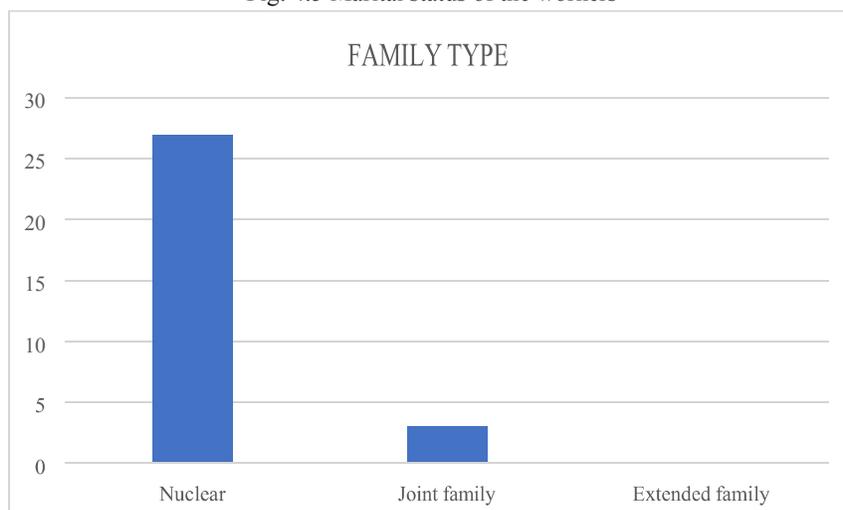


Fig: 4.6 Family types of workers



Fig: 4.7 Monthly income of the workers

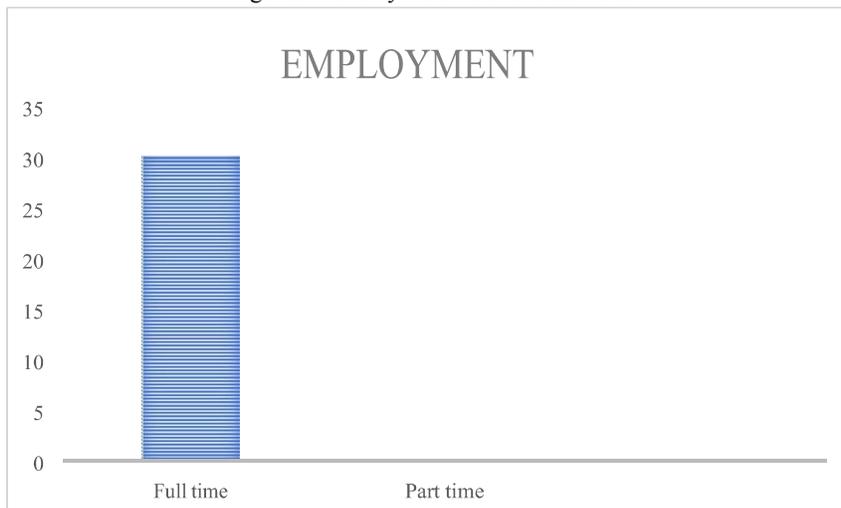


Fig: 4.8 Employment of the workers

SECTION - II

Chi Square Analysis Association between demographic data and knowledge N-30

Table 4.2

Demogra phical data	Poor knowledge		Average knowledge		Good knowledge		X ²	Df & p value	inference
	No	%	No	%	No	%			
Q 1 Age									
18-30year	1	11.11%	7	77.77%	1	11.11%	4.74551	Df – 4 P-0.31441	NS
31-42year	3	15%	12	60%	5	25%			
43-55year	1	100%	0	0	0	0%			
Above 55year	0	0%	0	0%	0	0%			

Q2. Gender									
Male	5	21.73%	12	52.17 %	6	26.08%	5.28604	Df- 3 P-0.152	NS
Female	0	0	7	100%	0	0%			
Transgen der	0	0%	0	0%	0	0%			
Q3. Religion									
Hindu	5	16.66%	19	63.33 %	6	20%	28.1333	Df-3 P-0.000	NS
Muslim	0	0	0	0	0	0			
Sikh	0	0	0	0	0	0			
Christian	0	0	0	0	0	0			
Other	0	0	0	0	0	0			
	0	0	0	0	0	0			
Q4. Education									
No formal education	3	42.85%	1	14.28%	3	42.85%	14.4408	Df-9 P-0.107	NS
Primary	0	0%	14	82.35%	3	17.64%			
Intermediate	2	40%	3	60%	0	0%			
Other	0	0%	1	100%	0	0%			
	0	0%	0	0%	0	0%			
Q5. Marital Status									
Married	5	16.66%	19	63.33%	6	20%	28.133	Df-3 P-0.00 NS	
Unmarried	0	0	0	0	0	0			
Divorced	0	0	0	0	0	0			
Separated	0	0	0	0	0	0			
	0	0	0	0	0	0			
Q6. Family type									
Nuclear	4	14.81%	17	62.96 %	6	22.22%	1.2280	Df-3 P-0.746	NS
Joint family	1	33.33%	2	66.66 %	0	0%			
Extended family	0	0%	0	0%	0	0%			
Q7. monthly income of the worker									
Below 10,000	0	0%	9	75%	3	25%	4.01315	Df-3 P-0.260	NS
10,000-15,000	5	27.77%	10	55.55%	3	16.66%			
15,000-20,000	0	0%	0	0%	0	0%			
	0	0%	0	0%	0	0%			
Q8. Employment									
Full time	5	16.66%	19	63.33%	6	20%	4.01315	Df-3 P-0.260	NS
Part time	0	0%	0	0%	0	0%			
	0	0%	0	0%	0	0%			

*P < 0.05 is significant

- To find out and test the significance association of knowledge with selected demographical variable following research hypothesis is are tested.
- H01: -There is no significant association between behavioral change of the student with demographic variables.
- H1: - There will be significant difference between level of knowledge on environmental and practice of worker regarding environmental sanitation.

SECTION - III

Table 4.3: Calculation of mean and sd among sanitary workers.

Level of knowledge among sanitary workers	knowledge		practice		P value	inference
	Mean	Sd	Mean	Sd		
	5	1.943	7	1.414	0.143	NS

*p< 0.05 is significant

IV. SUMMARY OF DATA ANALYSIS

The section is organized under 3 sections, 3 table and 8 diagrams which are description of sample according to demographic variable by using frequency and percentage, comparison of knowledge of the sanitary workers. There was distribution of subject according to demographic variables by using frequency and percentage analysis of knowledge and association of selected demographic variables with knowledge of sanitary workers using chi - square formula, findings show that by using self-structured questionnaire tool assess the knowledge among sanitary workers.

V. DISCUSSION

This chapter deals with the detail discussion of finding of the study interpreted from statistical analysis. The finding is discussed in relation to objectives formulated, compared and contrasted with dose of other similar study conducted in different setting. The present study is an effort to find out the knowledge and practice of sanitary worker's consequences in order to achieve the objective, A descriptive approach was adopted and nonprobability purposive sampling was use to select the samples. This study was conducted in four days at GNSU Campus, Jamuhar, Sasaram. The data was collected from 30 sample by using self-structured questionnaire.

The findings of the study have been discussed based on objectives.

5.1 First Objectives

To assess the knowledge level regarding environmental sanitation with selected sociodemographic variables.

Majority of sample (16.66%) sanitary workers have poor knowledge, (63.33%) sanitary workers were having average knowledge and (20%) sanitary workers were having good knowledge.

5.2 Second Objective

To associate the knowledge level regarding environmental sanitation with selected sociodemographic variables.

The chi square test did not establish any significant association between respondents of age, gender, religion, education, marital status, family type, monthly income of workers, employment.

The association between knowledge and Selected Demographic Variables was found to be nonsignificant by chi square the obtain 0.746 which is higher than the table value at 0.05.

Major findings of the study are summarized as follows, findings related demographic characteristics in the present study all select variable were not statistically significant with level of knowledge hence, hypothesis H1 is related in this area.

5.3 Major Findings of the Study

Majority of sample (16.66%) sanitary workers have poor knowledge, (63.33%) sanitary workers were having average knowledge and (20%) sanitary workers were having good knowledge.

Major findings of the study are summarized as follows, findings related demographic characteristics in the present study all select variable were not statistically significant with level of knowledge hence, hypothesis H1 is related in this area.

VI. CONCLUSION

The present study was aimed at assessing the level of knowledge among sanitary workers. The Relevant data collected statically based in the objectives of the study. There 30 sample (16.66%) workers were having poor knowledge, (63.33%) workers were having average knowledge and (20%) workers were having good knowledge. By assessing knowledge level of workers, we are going to know that majority of the workers having average knowledge regarding environment sanitation. Statically there is no any significant association was found.

6.1 Limitation

The present study cannot generalize, as it is limited to:

1. Those sanitary workers who are working in GNSU, Jamuhar.
2. Smaller sample size.
3. Lack of higher analysis.
4. Presence of extraneous variables.

6.2 Implication for Nursing Education

- Nursing students should educate the sanitary workers regarding environment sanitation.
- Nursing students plan aware program on environment sanitation that will help the sanitary workers.
- Nursing students also should know about environment sanitation.

6.3 Implication of Nursing Research

- Many more research studies could be done to assist the knowledge level of sanitary workers and for their wellbeing.
- Nurses are encouraged to conduct the interventional study regarding knowledge and practice of sanitary workers.

VII. RECOMMENDATION

- The findings of the present study can be used as a guide of future research Interventional study can be undertaken to give knowledge to the sanitary workers.
- A study can be conducted in preventing aspect health issue.
- To make the recommendation to the government to arrange compulsory medical check-up on the yearly basis for sanitary workers.

REFERENCES

- [1]. <https://www.scirp.org/journal/paperinformation.aspx?paperid=801299>
<https://www.allresearchjournal.com/archives/2016/vol2issue8/PartH/2-7-174-445.pdf>
- [2]. <https://www.dovepress.com/getfile.php?fileID=69994>
- [3]. <https://journals.sagepub.com/doi/pdf/10.1177/0272684X18787150>
- [4]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3299104/>
- [5]. <https://www.hindawi.com/journals/jep/2020/5460168/>
- [6]. <https://www.dovepress.com/prevention-of-occupational-hazards-among-sanitary-workersknowledge-at-peer-reviewed-fulltext-article-RMHP>
- [7]. <https://www.mcgill.ca/mchg/student/sanitation/chapter1>
- [8]. https://www.jemds.com/data_pdf/gomathi-subi-giri-aug-10-RA-.pdf
- [9]. <http://www.envirobiotechjournals.com/EEC/26Issue12020/EEC26-19.pdf>
- [10]. <https://www.scirp.org/journal/paperinformation.aspx?paperid=80129>
- [11]. <https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=80395&printable=1#:~:text=More%20formally%2C%20the%20World%20Health,garbage%20collection%20and%20wastewater%20disposal.>
- [12]. http://www.envirobiotechjournals.com/article_abstract.php?aid=10305&iid=298&jid=3

- [13]. <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/environmentalsanitation>.
- [14]. https://www.jemds.com/data_pdf/gomathi-subgi-giri-aug-10-RA-.pdf
- [15]. https://www.jemds.com/data_pdf/gomathi-subgi-giri-aug-10-RA-.pdf
- [16]. https://www.who.int/water_sanitation_health/publications/health-safety-dignity-ofsanitation-workers.pdf
- [17]. <https://en.wikipedia.org/wiki/Effectiveness#:~:text=Effectiveness%20is%20the%20capability%20of,produces%20a%20deep%2C%20vivid%20impression>.
- [18]. <https://www.merriam-webster.com/dictionary/practice>
- [19]. <https://en.wikipedia.org/wiki/Knowledge>
- [20]. <https://www.lawinsider.com/dictionary/environmentalsanitation#:~:text=Environmental%20sanitation%20means%20the%20art,and%20welfare%20of%20the%20public>.
- [21]. <https://www.merriam-webster.com/dictionary/worker>

DECLARATION OF COMPETING INTEREST

None

FUNDING

This work has not been supported by any funding organization

ACKNOWLEDGEMENT

We are grateful to the Narayan Nursing College , Gopal Narayan Singh University , all the participants and all the participants and all other individuals and organizations that supports the study.

DATA AVAILABILITY

Data is available in the form of hard copies.

SUPPLEMENTARY ITEM

Adobe Acrobat Document

SIGNATURE OF AUTHORS

Karan Kumar

Irfan Ahmad

Chandan Kumar