

SILENT HEROES AT RISK: INVESTIGATING OCCUPATIONAL HEALTH HAZARDS AND SAFETY CONCERNS AMONG SANITARY WORKERS PUNJAB, PAKISTAN

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ABSTRACT

In the context of Pakistan's sanitation sector, this research investigates occupational health risks encountered by sanitation workers in Sargodha district. Employing a quantitative approach, a survey questionnaire was distributed among 150 sanitary workers to identify prevalent hazards and safety concerns. The study unveils multifaceted challenges, including exposure to hazardous waste, infectious diseases, physical injuries, and psychological stress among workers. A lack of adherence to health and hygiene practices contributes to increased disease rates. To alleviate these issues, the study recommends equipping workers with essential safety gear such as gloves, boots, masks, and safety glasses. It advocates for regular training sessions on hazardous waste management and disease prevention. Additionally, proposing the formation of a safety committee to oversee the implementation of safety measures and ensure compliance with guidelines. This research underscores the critical need for prioritizing the safety and well-being of sanitation workers in Sargodha district, urging collaborative efforts from all stakeholders to effectively address identified occupational health hazards and safety challenges.

Keywords: Sanitary workers, Occupational health hazards, Safety concerns, Hazardous waste exposure, Disease prevention

1. Introduction

Sanitary workers play a crucial role in providing essential services to the public, involving tasks such as cleaning and maintaining toilets, septic tanks, thoroughfares, roads, and strands. Their contributions are indispensable in maintaining a clean and healthy environment for the community. (Bischel, Caduff, Schindelholz, Kohn, & Julian, 2019). The worldwide sanitation workforce plays a pivotal role in bridging the gap between sanitation infrastructure and the actual provision of sanitation services. Unfortunately, they often operate in the shadows, going unnoticed, unquantified, and marginalized, with many of the challenges they encounter originating from this fundamental lack of recognition. Sanitary workers in the field of sanitation face significant occupational and environmental health hazards, putting them at risk of illness, injury, and even death (Akter, Hawlader, & Hoque, 2019). "These societal structures are sometimes referred to as health disparities or health inequalities when they result in differences in health outcomes (such as rates of illness and injury, exposure to chronic conditions or risk factors, and inferior treatment outcomes) among specific populations (Al-Khatib, Al-Sari, & Kontogianni, 2020)".

Based on an ILO report, approximately 2 million occupational fatalities occur globally each year (Organization, 2022). The majority of these deaths are attributed to work-related injuries, cardiovascular and cerebrovascular diseases, as well as certain communicable conditions. The monthly rate of both fatal and non-fatal occupational accidents is estimated to be around 270 million (Balaji et al., 2019). The World Health Organization defines "sanitation" as the provision of facilities and services for the safe disposal of human excreta, encompassing activities such as waste collection and disposal to maintain hygienic conditions (Organization, 2022). Urbanization, a prominent trend in many developing countries experiencing rapid economic growth, has led to a significant concentration of populations in metropolitan areas. This concentration has given rise to numerous sanitation challenges, including waste accumulation, congested roads, and clogged drain



channels. These challenges substantially increase the workload and working hours of sanitation workers (Behnam et al., 2020).

Sanitation workers face many health risks, including exposure to toxic chemicals such as methane and hydrogen sulfide, poor heart health, musculoskeletal problems such as osteoarthritis and herniated disc, musculoskeletal problems such as hepatitis and leptospirosis, and skin problems caused by *Helicobacter* bacteria. . Respiratory problems and shortness of breath are also common among these workers (Degavi, Dereso, Shinde, Adola, and Kasimayan, 2021). Exposure to these hazards can lead to various health problems such as accidents, hearing loss, mental illnesses, joint diseases, heart diseases, and even cancer (Elamin, Sanhoury, and Mohamed, 2020).

Sanitation workers are required to carry and handle heavy waste containers and bags, putting them at risk of musculoskeletal disorders (MSDs) such as back pain, shoulder pain and upper muscle pain. A 2019 study by Bischel et al found that the prevalence of MSD among waste collectors in India was higher compared to the general population. Similarly, a study by (Gowda, Gurusiddappa, & Kalikeri, 2023) found that garbage collectors in Lahore, Pakistan, suffered musculoskeletal pain due to repetitive and vigorous movements during garbage collection. Additionally, sanitation workers are exposed to many chemicals, including dyes, detergents, and other toxic chemicals. These problems can cause breathing problems, skin irritation, and other health problems. (Akter et al., 2019) found that garbage collectors in Lahore, Pakistan, were exposed to pollution (PM2.5) and this caused respiratory problems. Cleaning workers are also prone to hepatitis, tetanus, etc. They are at risk of exposure to various diseases such as bacteria, viruses, fungi and parasites that can cause various diseases such as infectious diseases. A study by (Ittefaq, Ejaz, Jamil, Iqbal, & Arif, 2023) found that waste collectors in Iran are at risk of hepatitis A infection due to exposure to waste products.

This study aims to investigate and analyze the lives of sanitation workers, particularly in light of recent fatalities among homemade scavengers in Sargodha, Punjab, Pakistan. “As a developing city, Sargodha District lacks proper strategies and programs for sanitation workers, leading to numerous health issues in their occupation”. “The research seeks to understand the relationship between occupational health hazards and safety issues among sanitation workers, including an examination of their knowledge and instructions received from their supervisors and the cantonment department on the proper use of protective equipment”. Personal accounts of sanitation workers will be utilized to illustrate the challenges they face. Despite the passage of more than a century, the working conditions for sanitation workers have seen minimal improvement. Apart from the social challenges they confront, these workers are exposed to various health risks, including exposure to hazardous substances, cardiovascular problems, musculoskeletal conditions, and infections. The study also aims to gain insights into the knowledge and instructions provided by the cantonment department in Sargodha district regarding the use of defensive outfits by sanitation workers.

1.1 Hypotheses

1. A substantial correlation exists between the knowledge of workers and occupational health hazards.
2. A significant association is observed between the health hygiene of sanitary workers and the social stigma they encounter.

1.2 Objectives

1. To comprehend the socio-demographic challenges experienced by sanitary workers.
2. To assess the knowledge of sanitary workers regarding occupational safety and health hazards associated with sanitation work.
3. To examine the health issues prevalent among sanitary workers.
4. To ascertain the utilization of personal protective equipment by sanitary workers.

2. Research Methodology

This study utilized a quantitative approach employing a survey questionnaire to identify occupational health hazards and safety concerns among sanitary workers. Employing a concurrent triangulation research design, quantitative data was collected and analyzed simultaneously. To ensure representation from various roles such as street sweeping, garbage collection, medical

waste removal from public and private hospitals, and manhole work in Sargodha city, convenient and purposive sampling methods were employed. A sample size of 150 respondents was determined using a sample size calculator, equally distributed with 75 workers from rural and urban areas to maintain balance. Gender bias was mitigated by selecting an equal number of male and female workers, constituting 50% each from both urban and rural settings. Data analysis was performed using SPSS (Statistical Package for Social Sciences) software. Descriptive statistics, like frequency distribution and percentages, summarized the data, while inferential statistics, including cross-tabulation and hypothesis testing (e.g., Chi-Square), examined relationships between variables and assessed sample responses. Demographic characteristics of all respondents are detailed below:

Table 1: Frequency and Percentage Distribution of Demographic Variables

Sr.	Variable	Frequency	Percentage (%)
1.	Age		
	15-20	25	9.2%
	21-25	39	27.2%
	26-30	45	37.5%
	31 and above	41	29.2%
2.	Gender		
	Male	75	50.0%
	Female	75	50.0%
3.	Marital Status		
	Single	29	24.2%
	Married	76	55.0%
	Divorced	25	12.5%
	Widowed	20	8.3%
4.	Living Area		
	Rural	48	23.3%
	Urban	81	67.5%
	Semi-Urban	21	9.2%
5.	Educational Status		
	Illiterate	30	16.7%
	Primary	54	36.7%
	Middle	38	31.7%
	Matric	28	15.0%
6.	Work Experience Before Job		
	No Experience	32	18.3%
	Months	44	34.2%
	1-3 years	34	20.0%
	4 years and above	40	27.5%
7a	Currently Suffering from any chronic disease		
	Yes	46	13.3%
	No	104	86.7%
7b	If Yes, Mention name of Chronic disease		
	Hepatitis B		
	Arthritis	11	1.7%
	Diabetes	15	4.2%
	None	20	7.7%
		104	86.7%

The table encapsulates the demographic characteristics of a surveyed population across various categories. Age-wise distribution indicates that the highest proportion lies within the age bracket of 26-30 years (37.5%), followed closely by those aged 31 and above (29.2%), while the 15-20 and

21-25 age groups account for (9.2%) and (27.2%), respectively. Gender distribution is evenly split between male and female respondents, each comprising 50% of the total. In terms of marital status, a substantial percentage is married (55.0%), followed by singles (24.2%), divorced individuals (12.5%), and those who are widowed (8.3%). Geographically, the majority of respondents reside in urban areas (67.5%), followed by rural (23.3%) and semi-urban areas (9.2%). Educationally, the highest proportion has primary-level education (36.7%), followed by middle-level education (31.7%), with smaller percentages being illiterate (16.7%) or having matriculation-level education (15.0%). Concerning work experience, the most common category is individuals with four or more years of experience (27.5%), followed by those with six months' experience (34.2%), no prior experience (18.3%), and individuals with 1-3 years of experience (20.0%). Additionally, 13.3% of respondents report suffering from chronic diseases, with the majority not having any chronic ailments (86.7%). Among those with chronic diseases, the most prevalent are diabetes (7.7%), followed by arthritis (4.2%) and Hepatitis B (1.7%), while the remaining respondents do not report any chronic illness.

3. Results and Findings

Table 2: Frequency and Percentage Distribution of “knowledge of Sanitary Workers”

Sr #	Statements	To a Great Extent	Somewhat	Not at all
1	Management gives you waste management advice	85 62.5%	57 30.8%	8 6.7%
2	Management gives you waste management training before work	89 65.8%	45 29.1%	16 5.0%
3	You have received instructions from management regarding the safety of waste management	83 60.8%	49 54.2%	18 6.7%
4	You have followed appropriate waste management instructions	83 60.8%	51 34.1%	16 5.0%
5	You have followed the hygiene instructions in municipal committee	91 67.5%	44 28.4%	15 4.2%
6	Follow the safety instructions given by the group consult	85 62.5%	58 31.6%	7 5.8%
7	You are following waste management instructions	97 64.2%	44 28.3%	9 7.5%
8	Proper waste You are equipped with collection equipment	81 50.8%	58 40.0%	11 9.2%
9	You receive appropriate training before collecting waste	91 59.2%	46 30.0%	13 10.8%
10	You enter large amounts of waste from people Health Risk Waste	64 36.7%	77 55.9%	9 7.5%
11	If there is an emergency, you will receive appropriate treatment	85 54.2%	57 39.1%	8 6.7%
12	You supervise new employees' use of sanitary facilities provided by the municipal committee	30 16.7%	89 57.5%	31 25.8%

The table provides insights into the knowledge and practices of sanitary workers across various aspects related to waste management, safety guidelines, and health awareness. It reveals that a significant portion of respondents indicated a positive perception regarding certain aspects of their work environment and training: notably, a majority feel they are given disposal guidelines (62.5%) and training for waste management by their management (65.8%) to a great extent. Similarly, many respondents reported following sanitation advice (67.5%) and instructions for waste disposal (64.2%) given by authorities. However, there are areas that seem to require improvement, as fewer respondents feel adequately equipped with proper instruments for waste collection (50.8%), and a

relatively smaller proportion reported awareness of health risks associated with human waste (36.7%). Additionally, a smaller number indicated supervising new workers regarding health facilities provided by the municipal committee (16.7%), suggesting a potential area for increased attention and training within the workforce. Overall, while there are areas of strength in terms of guidance and compliance, there remain aspects that might benefit from further training and resource allocation to ensure the safety and efficiency of sanitary workers in their roles.

Table 3: Frequency and Percentage Distribution of “Health and Hygiene of Sanitary workers”

Sr #	Statements	To a Great Extent	Somewhat	Not at All
1	You take sleep of 6-8 hours	86 55.0%	55 7.5%	9 7.5%
2	You go for complete medical checkup regularly	53 35.8%	88 56.7%	9 7.5%
3	You keep yourself properly hydrated	39 25.8%	82 68.3%	7 5.8%
4	You use gloves while handling solid waste	41 25.8%	102 68.3%	7 5.8%
5	You use handkerchief while coughing/sneezing	42 26.7%	90 66.7%	18 6.7%
6	Always take a shower with soap after handling waste	84 61.7%	45 29.2%	21 9.2%
7	You avoid eating while handling solid waste	98 65.0%	42 26.6%	10 8.3%
8	Wash your hands with soap/ash after handling waste	89 57.5%	52 35.0%	9 7.5%
9	Wear an apron before entering the sewer	63 35.8%	78 56.7%	9 7.5%
10	Wear protective boots when entering the pipeline	87 55.8%	57 39.2%	6 5.0%
11	You have been vaccinated against infectious diseases (hepatitis, diphtheria, tetanus, etc).	73 60.8%	41 34.2%	6 5.0%
12	You cut your nails regularly	90 58.3%	52 35.0%	8 6.7%
13	You change into civilian clothes before leaving work	33 19.2%	85 62.5%	32 18.3%

The table outlines the health and hygiene practices of sanitary workers, shedding light on their adherence to various safety measures and habits. The data indicates that there are areas where the majority of workers adhere to recommended practices to a significant extent, such as maintaining a proper sleep duration of 6-8 hours (55.0%) and avoiding eating while handling solid waste (65.0%). Additionally, a considerable portion of respondents reported using gloves (68.3%) and washing hands with soap/ash after waste disposal (57.5%). However, there are areas that may require more attention and improvement, as fewer respondents reported regular complete medical check-ups (35.8%) or keeping themselves properly hydrated (25.8%). Similarly, a relatively smaller proportion indicated using protective gear like aprons (35.8%) and rubber boots (55.8%) while entering sewerage gutters, and only a minority change into civilian clothes before leaving work (19.2%). This suggests a need for enhanced hygiene practices, more consistent use of protective equipment, and better awareness regarding health check-ups among sanitary workers to ensure their well-being and mitigate health risks associated with their work environment.




Table 4: Frequency and Percentage Distribution of “Occupational Health Hazards to Sanitary Workers”

Sr #	Statements	Always	Sometim es	Never
1	Hands were cut by sharp objects while working	9 7.5%	69 57.5%	42 35.0%
2	Pain was felt upon direct contact with debris	11 9.2%	78 65.0%	31 25.8%
3	Bones were broken while entering the sewer	11 9.2%	61 50.9%	48(40.0 %
4	Ever experience severe vomiting during waste disposal	12 10.0%	80 66.7%	28 23.3%
5	He felt cold after entering the sewer	12 10.0%	70 58.3%	38 31.7%
6	Ever experience headache after continuous waste disposal	11 9.2%	79 65.8%	30 25.0%
7	Ever experience itching while waste disposal	12 10.0%	63 52.5%	45 37.5%
8	You have back pain during work	13 10.8%	79 65.8%	28 23.3%
9	You have musculoskeletal disorders	13 10.0%	77 64.2%	30 25.0%
10	You face tiredness during work	10 8.3%	76 63.3%	34 28.3%
11	You have gastric issues during waste disposal	12 10.0%	77 64.2%	31 25.8%

The data presented in Table 4 illustrates the frequency and percentage distribution of reported occupational health hazards among sanitary workers. Analysis reveals that a substantial proportion of respondents have encountered various health risks in their work environment. Sharp cuts on hands during work were reported by (7.5%) always, (57.5%) sometimes, and (35.0%) never. Nausea from direct contact with contaminated waste affected (9.2%) always, (65.0%) sometimes, and (25.8%) never. Instances of fractures while entering sewers were reported by (9.2%) always, (50.9%) sometimes, and (40.0%) never. Severe vomiting during waste disposal affected (10.0%) always, (66.7%) sometimes, and (23.3%) never. Cold after entering sewerages was reported by (10.0%) always, (58.3%) sometimes, and (31.7%) never. The findings highlight the prevalence of health hazards in the sanitary work environment, emphasizing the need for attention to mitigate these occupational risks.

Table 5: Frequency and Percentage Distribution of Social Stigma and Discrimination with Sanitary Workers

Sr #	Statements	Always	Sometimes	Never
1	You are recognized by the community for your cleanliness	22 18.3%	66 55.0%	32 26.7%
2	You are respected for your waste management	39 32.5%	64 53.3%	17 14.2%
3	If you are seriously injured you will receive the best treatment	57 47.5%	51 42.5%	12 10.0%
4	You are compensated for extra waste disposal	46 38.3%	61 50.8%	13 10.8%



5	You get monetary benefits on retirements	50 41.7%	49 40.9%	21 17.5%
6	You get housing facilities from municipal committee	50 41.7%	47 39.2%	23 19.2%
7	You are paid according to the amount of work you have done	26 21.7%	56 46.7%	38 31.7%
8	You can take paid sick leaves	42 35.0%	55 45.8%	23 19.2%
9	People will be happy to give you water from their dishes for you	42 35.0%	56 46.7%	22 18.3%
10	You will be criticized for your poor disposal of waste materials	22 18.3%	64 53.3%	34 28.3%
11	Your family respect your profession	31 25.8%	60 50.0%	29 24.2%
12	You are abused in public	36 30.0%	47 39.2%	37 30.8%
13	You are mocked by public	8 6.7%	48 40.0%	64 53.3%
14	You are mocked by fellow workers	10 8.3%	43 35.9%	67 55.8%
15	You face difficulty in finding safe place for your equipment's	12 10.0%	54 45.0%	54 45.0%

Table 5 provides insights into the frequency and percentage distribution of social stigma and discrimination experienced by sanitary workers. The data reveals that a significant portion of respondents faces challenges in terms of public acknowledgment and respect in their profession. Only (18.3%) are always acknowledged by the general public on manual sanitation, while (55.0%) experience it sometimes, and (26.7%) never do. Respect in waste disposal is reported by (32.5%) always, (53.3%) sometimes, and (14.2%) never. Concerns about access to adequate health services, compensation for extra waste disposal, and monetary benefits upon retirement are prevalent, with varying degrees of frequency. Notably, a considerable (47.5%) always feel provided with the best health services in severe injury cases, while (10.0%) never do. Discrimination is evident in work-related aspects such as compensation, sick leaves, and finding safe places for equipment. The findings underscore the need for addressing social stigma, improving working conditions, and promoting respect for sanitary workers in various spheres of society, including their families and fellow workers.

Table 6: Hypothesis 1

<i>H1: There is no significant relationship between worker’s knowledge and occupational Health hazards.</i>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	672.728 ^a	598	.018
Likelihood Ratio	355.524	598	1.000
Linear-by-Linear Association	5.147	1	.023
No of Valid Cases	150		
a. 648 cells (100.0%) has expected count less than 5. The minimum expected count is .01.			

The hypothesis (H1) examining the correlation between worker knowledge and occupational health hazards underwent statistical testing using multiple measures. The Pearson Chi-Square test was conducted, producing a value of 672.728 with 598 degrees of freedom. The resulting asymptotic

significance was .018, indicating a statistically significant relationship. These results indicate a notable association between worker knowledge and occupational health hazards, particularly highlighted in both the Pearson Chi-Square and Linear-by-Linear Association tests. It is important to note the significance of considering the relationship between worker knowledge and occupational health hazards.

Table7: Hypothesis 2

H2: There is no significant relationship between sanitary workers health hygiene and Social stigma they faced.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	632.668 ^a	594	.032
Likelihood Ratio	308.763	594	1.000
Linear-by-Linear Association	8.352	1	.004
No of Valid Cases	150		

**a.644cells (100.0%) has expected countless than5. The minimum expected count is .01.
.01.**

The table displays outcomes for Hypothesis 2 (H2), examining the connection between the health hygiene practices of sanitary workers and the social stigma they encounter. Utilizing the Pearson Chi-Square test, the analysis generated a value of 632.668 with 594 degrees of freedom, yielding an asymptotic significance of .032. These results indicate a statistically significant relationship between sanitary workers' health hygiene and the social stigma they face. Consequently, it can be concluded that the hygiene practices of these workers significantly influence the stigmatization they experience from the general public.

4. DISCUSSION

“This study has two main purposes. First, understanding that cleaning workers have knowledge about safety and health related to cleaning work (Kumar and Shetty, 2021)”. “Secondly, based on the workers' perspective, we hope to provide effective measures to solve the current problems caused by waste and sanitation workers (Jayaseelan, Debnath, Krishnamoorthy, & Kar, 2020)”. “Finally, the study identified many new problems related to the occupational safety of waste and sanitation workers: lack of equipment, lack of capacity to expand broad skills, low wages and poor safety, lack of personal protective equipment, and no education”. A corrective measure based on this would have a positive impact on the health of waste workers (Nosheen et al., 2022).

Not all cleaning workers are equipped with waste management tools. Municipal corporations also lack the necessary logistical and financial support for waste management in Sargodha areas (Onyenechere et al., 2022). Previous studies conducted in Pakistan, Bangladesh, India, China and Switzerland have found similar results; It has shown that there is a lack of effective governance to manage public resources, financing of consumption and the denial of a good workplace and workers' rights have a negative impact on employment in the defense sector and even city companies (Oza et al., 2022). Another study conducted in the city of Sargodha also supports our findings showing that extreme poverty increases the risk of these activities and that injuries or eating disorders associated with these activities can increase poverty (Pamidimukkala and Kermanshachi, 2022).

Poor working conditions can cause stress in workers due to the lack of a permanent employment contract, causing stress and anxiety (Patwary et al., 2021). “A similar study supports this claim and shows that factors that make for a better workplace include good wages, workplace safety and stable employment contracts, but these facilities are mostly rare for sanitation and waste workers in Pakistan (Prasha, 2019)”. Efforts to improve performance and understanding of the health of cleaning workers should be prioritized. Recognizing their important role in waste management and public health is important to promote respect and concern in society (Balaji et al., 2019 ; Behnam et al., 2020 ; Bischel et al., 2019 ; Degavi et al., 2021). Providing them with appropriate facilities such as accessible toilets and washing facilities at the workplace is important to ensure their health



and hygiene, which ultimately leads to the well-being of the society (Ittefaq et al., 2023; Jayaseelan et al., 2020); Kumar and Shetty, 2021).

Waste and sanitation workers are vulnerable to many injuries and illnesses due to dangerous and unprotected work (Organization, 2022). These health risks are higher for pits/latrines and medical waste (Rajan, 2020). Similarly, a recent study showed that vacant land in Pakistan died in the sewage system due to pollution (Zinovyeva, Koptyakova, Balynskaya, & Stepashkov, 2019). The same situation is happening in neighboring countries like India, where men die due to the pollution they inhale (Vaishnav & Mehendale, 2020). Sanitation and waste workers (especially well and septic tank evacuators) directly handle human waste and other hazardous materials that cause injury, pain, and infection, including hygiene products, sharp tools, and other waste products often found in wells and wells. Therefore, their values and needs are urgently needed (Uloma, Nkem Benjamin and Kiss, 2022).

Therefore, safety procedures should be established to protect the health, safety and dignity of cleaning workers. Other studies also show that waste workers are involved in important services such as waste collection and management, cleaning of public spaces and the provision of sanitation services. (Rajan, 2020). A similar study by Water Aid showed that 60% of waste workers lived in areas where an average of 25 people used the toilet (Ramitha, 2023) and only a very small number of workers had working laundry facilities (Salve and Jungari, 2020).

The strength of this study lies in understanding the occupational health, safety and occupational perception of sanitation and waste workers (Organization, 2022; Oza et al., 2022). The findings empower local authorities to take the necessary measures to achieve several Sustainable Development Goals (SDGs) related to health and safety, such as Target 3.9 (Reduce deaths from hazardous substances), Target 8.8 (Improve a safe workplace), and Target 16.6 (Reduce deaths from hazardous substances). can inform. Be effective, accountable and transparent) (Mori Junior, Fien and Horne, 2019). Our research shows that not providing workers with appropriate training, PPE, and other facilities is a major limitation for managers, increasing the risk of contracting waste workers (Philippe et al., 2022).

5. Recommendations

Based on the findings regarding occupational health and safety issues of sanitation workers in Sargodha district, the following recommendations are made for future research:

1. Undertake a longitudinal study to evaluate the enduring health impacts on sanitary workers, providing insights into the cumulative effects over time.
2. Explore regional disparities in the hazards encountered by sanitation workers across diverse districts in Pakistan, offering a more comprehensive understanding of the contextual variations.
3. Identify and delineate specific hazards prevalent in Sargodha District, facilitating the development of targeted risk management strategies tailored to the local context.
4. Investigate the mental health implications and societal stigmatization associated with the sanitation profession, shedding light on the psychological well-being of workers and the social challenges they may face.
5. Scrutinize job tasks to proactively address and prevent musculoskeletal disorders, recommending ergonomic enhancements to minimize physical strain and improve overall workplace safety.

These recommendations are intended to guide future research to address health and safety issues among sanitation workers in the Sargodha region and beyond.

6. Policy Implications


Analysis of occupational hazards and safety for sanitation workers in Sargodha district shows that various policies have been implemented. This study underscores the need for strong policies to address the unique challenges facing cleaning workers. It recommends that governments implement and enforce policies requiring adequate personal protective equipment (PPE), training, and regular medical examinations for these workers. Upfront investment in sanitation is critical to improving the health and safety of sanitation workers and the public.

7. Conclusion

In conclusion, the research conducted in Sargodha district highlights the substantial occupational health hazards and safety challenges faced by sanitation workers. These risks encompass exposure to biological, chemical, and physical agents, along with ergonomic concerns arising from repetitive manual tasks and heavy lifting. The study reveals a correlation between these hazards and various health issues, including respiratory diseases, skin disorders, musculoskeletal problems, and hearing loss. Overall, the findings emphasize the imperative to prioritize the occupational health and safety of sanitation workers not only in Sargodha district but also in similar contexts. Safeguarding the well-being of these workers is not just a moral responsibility but a crucial aspect of public health. Implementing the recommendations from this study and similar research efforts is essential to ensure that sanitation workers can fulfill their vital role in upholding public health and cleanliness, while simultaneously advancing social justice and equity in the workplace.

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