

Outcomes from A Lay Health-Monitoring Research on Sanitation Employee's Health in a Karnataka Town

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ABSTRACT: In India, official figures for mortality and morbidity among sanitation workers (including manual scavengers) are unavailable. In the context of their job dangers, little is known about their health difficulties and health-seeking behavior (work practices and exposures). Using a lay epidemiological method, we aimed to investigate the nature of sanitation employees' health concerns. This study was conducted to discover occupational health concerns and gaps in healthcare access. The occupational health status, healthcare-seeking habits, and social support systems were all mapped using descriptive analysis. The most often reported diseases were injuries and chest pain. Most people remained to work despite their illnesses because they did not want to lose their jobs or lose their salaries. It was usual for people to self-medicate. Alcohol use was common to deal with the inhumane chore of cleaning unclean sewage and to forget about their health issues. Long-term diseases were also documented as a pattern of illnesses detected during monthly surveillance. Workplace health and safety systems did not exist, and regulatory authorities did not require them. Sanitation employees' health and safety have received little attention in public health studies. Unlike other hazardous jobs, sanitation work lacks particular protective regulatory rules to address health dangers.

Keywords: Community, Health, Public, Risk, Workplace.

1. INTRODUCTION

Pourakarmikas are Karnataka residents who collect rubbish, clean sewage pits and drains, sweep roadways, and collect and dispose of human and animal excreta, as well as animal corpses. 'Manual scavenging,' which entails gathering, handling, and disposing of human excreta from open sewer drains, dry latrines, and sewage pits, open public spaces where brooms, tin plates, baskets, or other items are used buckets without any kind of personal defense, is the most inefficient method of garbage collection. The Dalit community is mostly responsible for garbage collection. One of the most well-known of these groups is the Madigas [1]–[5].

There are a few alternatives and sociological study on medical dangers, the amount of sanitation personnel' sickness burden from Mumbai and Delhi, both metropolises, but there is no representation from smaller cities towns in India with a working sewage transport system sewage drains. In the context of their work-related dangers, sanitation personnel' access to water is a mystery healthcare [6]–[8]. In the city of Chitradurga, Karnataka, we used an approach for recording the state of health via involvement sanitation personnel' concerns and treatment-seeking habits [9]. Figure 1 shows the hierarchy of controls in the system [10].

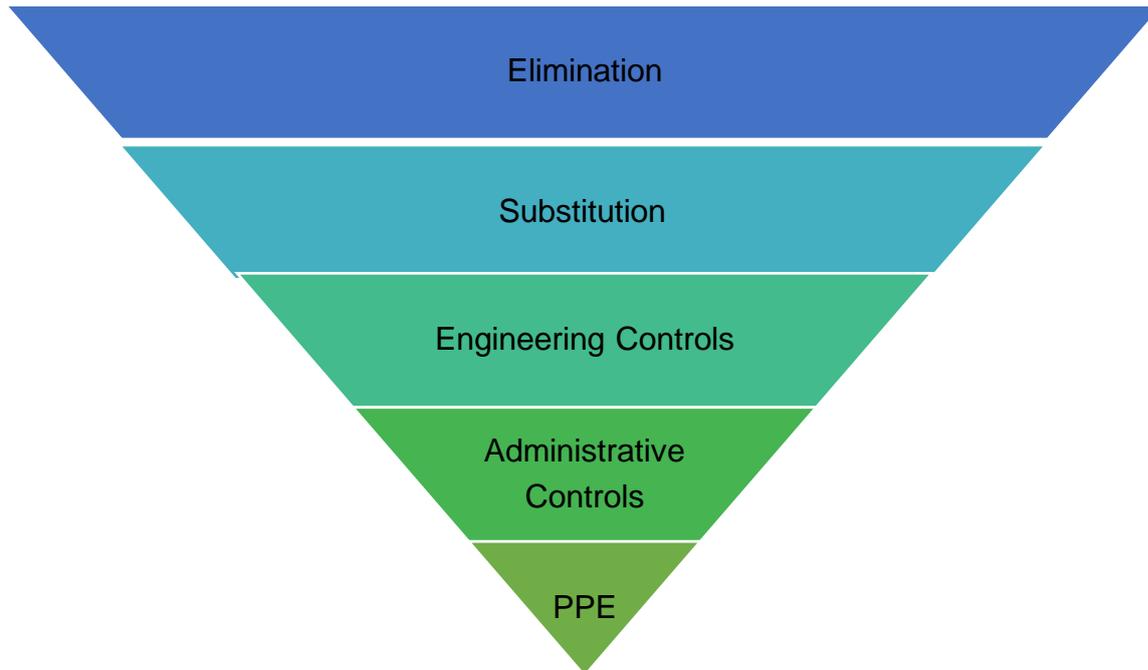


Figure 1: Illustrates the Hierarchy of Controls in the System [11], [12].

2. LITERATURE REVIEW

Prashar et al. in their study embellished the working circumstances of sterile employees have remained unchanged in every area that counts. The authors stated that aside from the societal shock that these workers experience, the integrity of their vocation exposes them to some restorative challenges. These health risks include harmful gases into the atmosphere and hydrogen, cardiometabolic disintegration, musculoskeletal disperses such as rheumatoid arthritis variations and lumbosacral plate herniation, illnesses such as hepatitis, leptospirosis, and campylobacter, skin issues, respiratory system issues, and balanced aspiratory work parameters. The authors suggested that these health issues can be avoided by using structural, remedial, and management measures. The therapy evaluations will aid in early revelation of the impacts of these exposures, while the structural examinations will help in checking against exposures. This may be promoted primarily by establishing an efficient world-related prosperity association for this social gathering of experts. In addition, standard care projects should be integrated to allow for more secure work frames and the use of individually guarded gadgets [13].

Rajnarayan Tiwari in their study illustrates that the cleanliness of our surroundings is carried out by an estimated 1.2 million scavengers throughout the nation. For nearly a century, the working circumstances of these sanitation employees have remained essentially unaltered. Apart from the social injustices they confront, these employees are also exposed to specific health issues as a result of their profession. Exposure to harmful hydrocarbons and sulfur oxides, vascular degeneration, musculoskeletal pain such as osteoarthritis and country is bordered herniation, infections such as hepatitis, leptospirosis, and helicobacter, eczema and psoriasis, cardiovascular software problems, and distorted echocardiography characteristics are just a few of the health risks. The authors used an effective approach to conduct a survey in which the data was obtained in an efficient way. According to Rajnarayan Tiwar's study, the effective data of sewage employees is used for future use since it reveals the workers' problems and how they live their lives. Engineering, economic, and political initiatives may all help to avoid this. While engineering measures will aid in the prevention of exposure, medical countermeasures will aid in the early diagnosis of these exposures' consequences. This may be done in part by establishing an efficient environmental medical system for all of this group of employees. Regular awareness seminars should also be held to educate workers on psychologically safe techniques and the usage of personal protection [14].

Chandra et al. in their study illustrates that chronic inhalation of chemical gases, bio aerosols, and microorganisms, as well as inadvertent oral intake and penetration via skin or mucosal membranes owing to injuries or gaps in personal

protective clothing, make sewage handling dangerous. While considerable study has been done on isolated infections and multisystem symptom profile of sewage workers, nothing has been done on the burden of chronic illnesses such as tuberculosis and no communicable diseases (NCDs). Cross-sectional observational research was undertaken on the chronic comorbidity profile of sewage employees with more than five years of employment experience working in three adjacent districts of the National Capital Territory of Delhi. The research sample consisted of 104 sewage employees with an average age of 50.71 (8.43) years, an average of 7.35 (3.75) years of formal education, and an average of 21.28 (10.54) years of occupational exposure to sewage work. Tuberculosis was found in 21.15 percent of sewage employees, and 92.31 percent had at least one of the chronic respiratory disorders (COPD, Asthma or ACOS). 85.6 percent of those who took part in the study were smokers. Hypertension was the most frequent NCD (67.3%), followed by Dyslipidemia (50%) and Diabetes Mellitus (5%). (43.3 percent). NCDs were clustered, with 53.85% of the individuals having three or more chronic illnesses. Only around 5% of research participants were free of all of the chronic disorders studied. Sewage workers have a poor chronic morbidity profile for tuberculosis and no communicable diseases. Tuberculosis and other NCDs among sewage workers as an occupational category need urgent epidemiological investigation, focused screening, and public health intervention [15].

3. METHODOLOGY

3.1. Design

To comprehend health hazards, lay epidemiology is used. Lay epidemiology is described as "the process through which laypeople collect statistics and other information, as well as to conduct and coordinate research. "Assemble professional knowledge and resources to 'Understand illness epidemiology' is a phrase that means "understand disease epidemiology. "Epidemiology for the layperson incorporates two components to determine "what defines an illness or disability. "Sickness"; first, a layperson's perception of an illness; and second, a medical professional's perception of an illness. How values or ideas that individuals have are influencing this in life, there are threats to one's health. The need of using lay epidemiology is the result of a desire to see a public health professional's work. Risk perception about an individual's or a community's terms "risk" and "disease" are defined here. Community and field of activity susceptible to dangerous substances have employed it approaches to comprehend their health dangers, as well as both research and qualitative To document, both qualitative and quantitative research methodologies, have been applied to characterize and analyse illness outbreaks among farmers and other agricultural workers Those employed in dangerous industry or activities. The people who live in the impacted areas have a voice in how the situation is solved.

Not only will they be examined, but they will also have a role in how their daily pain is documented and shared. As a result, community-based or -led research allows for the capture of impacted people's perspectives. People and their socio-political surroundings In India, a transformation is taking place. Communities and advocacy groups sharing their expertise dangers to one's health at the workplace or in the environment, and physicians, public health professionals, and the general public), as well as by doctors, epidemiologists, and the general public health practitioners. The 'Community' is a term used to describe a group of people who live together. The CHESS (Comprehensive Health Enhancement Support System) process aided in the gathering of data on environmental health effects Considering occupational dangers using basic epidemiological research conducted by lay people done by community-based organizations CHESS has become a team effort response mechanism among microbiologists and community incorporating lay experiential following their local interests scientific inquiry and, as a result, community empowerment It's true It is believed that this endeavour would aid in the fight for human rights communities that have been impacted.

3.2. Instrument And Sample

Members of a community-based organization (CBO) worked with sanitation workers in Chitradurga to raise knowledge about the nature of their profession, the need of fighting social ostracism, and prospects for social and economic growth via government initiatives. The CBO wished to learn more about the variety of health concerns that have arisen as a result of sanitation work and how the community's ability to access healthcare services may be improved. Group talks were held as a first phase in the CHESS process with employees (men and women) living in a big urban neighborhood in Chitradurga to better understand their opinions about sanitation work and occupational health. These demonstrated that their primary concern was not workplace health. 18 Workers, both women, and men reported injuries, pains, and fevers for which they did never seek medical attention or take time off. While males claimed that consuming alcohol was compelled to work in the filth, women spoke up about the abusive treatment they suffered as a result of their

addiction. Following the group talks, the CBO team determined that it was critical to systematically record the health difficulties associated with the nature of jobs, as well as how employees dealt with these issues.

3.3. Data Collection

Over two months and first and secondary taught the CBO team about health principles, the right to health, and occupational health, as well as the practice of lay health monitoring. The crew was taught how to use a health-monitoring program that has been developed and translated into Kannada to detect and record worker health concerns. The goal of monitoring the employees was to learn more about the kind of health issues they were experiencing as a result of their jobs, as well as how they were accessing healthcare services. The study's preparation and execution were aided by a collaborative discussion process with the community-based organization (CBO) team. Workers in three urban neighbourhood areas in Chitradurga town were visited by the CBO team. During the initial visit, they met the employees at their homes and described the goal of the health-monitoring project. Some of the employees were afraid to answer questions about their health because they were concerned that the contractors would use this information to fire them. Because this kind of health research was new to them, the employees' confidence had to be earned over time by making frequent visits to their homes. Because of the employees' concerns, no formal agreement was obtained, but the CBO team told them that perhaps the information would just be kept private and would not be disclosed with companies or government authorities. The CBO team's continued involvement with the employees allowed for monthly visits to their homes to administer the questions over a 4–6-month interval.

Each worker was given a tool during their monthly house visit that probed:

- Employment illnesses,
- Recent (within the last month) and past (only during the first visit) illnesses, and
- Treatment-seeking practices

Details concerning absenteeism from work illness or accident. Over six months, four trips were made, with at least one visit every month per worker. Past major illness was defined by the workforce as one of the foregoing: a distinct event in the past with ramifications, frequent seasons of the show of an illness (such as asthma) over a longer duration, a medical problem that requires careful psychotherapy, protracted acknowledgment or with long-term repercussions (could signify long-term debility and lack of earning potential), long-term enrolment or with long-term consequences (could signify lengthy psychomotor retardation and complete absence of earning capacity). The completed questionnaires were evaluated monthly quarter for any incomplete data, and any necessary modifications have been made at following house visits. Thirty-eight employees were first interviewed and followed up with every quarter since they were accessible in the neighbourhood during CBO team visits and eager to participate. The research is conducted on a detailed analysis of 29 employees.

3.4. Data Analysis

Table 1 displays the health difficulties and treatment-seeking habits of sanitation employees. It essentially shows the varied injuries and prior illnesses of the 29 workers whose data is used here for the study. Both men and women are affected by various types of pain. Some of them are suffering from previous and current damage in the living structure in the sewer, such as chest discomfort, knee pain, and body soreness.

Table 1: Illustrates the Health Effect of The Sanitation Workers in The System.

	Men	Women
Injuries	<ul style="list-style-type: none"> • Glass shards hurting the heel and legs • Started working Bruises caused by automobiles • Government hospital Bruises in the hands and fingers caused by • Pharmaceuticals or cloths slamming into them • Bruises/cuts/swellings in legs from self-medication against stone slabs pharmacists after regular working hours 	<ul style="list-style-type: none"> • Accidents involving trash trucks/tractor-trailers • Private hospitals Bruises on legs from colliding with a trash truck • Burns on hands from handling acid solutions • Eye irritation and watering

	<ul style="list-style-type: none"> • Rest at work supplemented by removing stone slabs or slabs dropping drugs from pharmacies on the feet Government hospital from dust in the eyes Bruises and scrapes on feet and arms from clearing sewage debris from drains 	
Past illnesses	<ul style="list-style-type: none"> • Workplace injuries such as fractures and head injuries • Repetitive bouts of disease such as chest pain and pains 	<ul style="list-style-type: none"> • Chest pain and discomfort regularly Sniffle and uncomfortable, common cold, pyrexia
Recent illnesses	<ul style="list-style-type: none"> • Body ache/tiredness • Drink alcohol before work to avoid Body ache • Private doctor • Cough and could prevent the start of the disease 	<ul style="list-style-type: none"> • Leg pain • Headache • Drink alcohol after work for • Fever • Leg pain chest discomfort, exhaustion, and pains

4. RESULTS AND DISCUSSION

A total of 29 health workers (n=18 men and 11 women) were interviewed, ranging in age from 20 to 58 years. They have mostly contracted employees (n=19/29) with just a few males working for themselves. The majority of them had been employed for 5–15 years. Men most often reported sickness was injuries. They suffered bruises, scratches, lacerations, and hematomas when crawling down drains to clean the debris (human faces, sludge, decayed animal parts, and solid trash). Because they were afraid of losing their jobs, the males did not take time off and remained to work in nearly three-quarters of the injury incidents. In addition to injuries, either men or women often complained of chest discomfort, which was also regarded as a long-term disease. During the monitoring, body aches, backaches, leg discomfort, and headaches were reported as a result of the strenuous manual labor. The majority of employees said they had a lot of fevers, colds, and coughs. The major means of symptom alleviation were alcohol drinking and self-medication. Skin or systemic illnesses were not reported by the personnel.

Injuries and illnesses were reported by the majority of employees. The most frequent cause was an injury, followed by chest trouble. Workers who engage in manual labor are prone to injury, which is logical. However, since they were contract employees, more workers didn't take time off because they worried about losing their income and employment. Many employees reported chest discomfort, which might be one of the signs of a variety of cardiorespiratory disorders and warrants additional investigation. Lifting, lugging huge stone slabs when cleaning drains and putting baskets of rubbish or sludge into trucks and tractors may all cause chest strain. The foul odors of sewage incorporate hazardous fumes like hydrogen and methane, which also are thought to cause hypoxic injury toward the lungs, resulting in breathlessness, chest pain, breathing difficulties, and a variation of brain illnesses linked to helium sulphides direct effects on the brain. The employees reported 19 episodes of fever, cold, and cough, which might indicate illness from inhaling infectious aerosols, dust, or noxious gases. Handling hazardous domestic waste and sewage waste posed a significant risk of infection (skin/systemic), yet the employees did not report it. Leptospirosis is known to be common among sewage workers and has been detected in serological tests among reservoir workers in Chennai and Pune. Flesh-eating bacteria as an occupational illness among sanitation employees are not estimated in India.

When compared to standard medical definitions of serious sickness, the illness pattern recorded during monthly monitoring (injuries, aches, pains, cough, and cold) was likewise reported as historical illness (occurrence of repeated episodes in the past) and considered as severe illness. Because a wide variety of symptoms and diseases are chronic, they reflect a lack of therapeutic intervention and persistent exposure to employment risks. The majority of employees did not seek prompt care for two reasons: they disregarded the injury or sickness, and they can't lose money due to time off work. There is no structure in place to provide quick first-aid and prompt treatment. Even though the employees said they sought treatment in government facilities, the most prevalent behaviours were taking over-the-counter drugs and drinking alcohol.

Both of these practices must be stopped because they demonstrate the public health system's failure to respond to these employees' medical needs. There was a lack of confidence and a feeling of pessimism with the health care system; people still had to purchase drugs, pay for investigations, or influence healthcare personnel in government hospitals, as discussed in prior group discussions. All of the aforementioned circumstances discouraged employees from seeking medical help for their health issues [16]. Workers said they drank alcohol sometimes during work making them less sensitive to the stench of sewage, decaying animal carcasses, and feces. They said that alcohol helped them recuperate from weariness and other diseases, as well as reduce the misery of their jobs. Alcohol use has become a hard and normative behavior, as well as a treatment method for all of their work-related health issues [17].

4.1. Workplace security

According to reports, city workers throughout India do not wear any safety gear, such as boots, gloves, masks, or other equipment, while clearing drains or collecting wastewaters. The contract employees in Chitradurga said that they have been not supplied with any safety equipment. 18 sewage workers (men)' health and safety are not specifically protected by statutes like those for plantation workers, factory workers, mine workers, dock workers, or construction workers. In addition, unlike the Factories Act, there's no legal need to record injuries. The Employees' State Insurance Scheme does not ensure these personnel against occupational sickness or injuries. As a result, there are few examples of the business or subcontractor compensating the employee. The new regulation is problematic because it refuses to identify health hazards and does not classify people who use protective clothing or technology to clean feces as manual scavengers. Manual scavenging and other types of septic or sewerage clean-up may only be legitimized by this definition and supply of safety equipment. It also ignores these employees' long-term impairment and medical rehabilitation

5. CONCLUSION

Workers in the Dalit community engaging in manual scrubbing and many other sanitation duties have absorbed the dangerous nature of their employment as the norm. This has expressed itself in the political system's complacency by failing to address the greater issues of cleanliness, worker safety, and caste liberation. The lay epidemiological procedure employs trained laypeople to identify occupational health issues and gaps in healthcare access for vulnerable employees. Their beliefs of health hazards were also highlighted in this research, which was shaped by their poor social and economic standing. Alcohol use was seen as a means of coping with the dangerous job and as a remedy for all ailments. This is undoubtedly the most pressing public health issue, and any intervention to combat alcoholism would have to address the social consequences of caste-based employment, as well as the perpetuation of such dangerous work and the relationship between alcoholism and poverty. Sanitation workers have faced such severe societal persecution that the value of their labor in preserving cleanliness, preventing the spread of infectious illnesses, and defending society's health has never been recognized. Implementing safety measures at work, occupational health monitoring and investigation, and legislation that defines dangerous working conditions and work-related health issues as particularly severe and compensable should all be part of the effort to achieve the medical interests of these disadvantaged people. The provision of medical care to employees and their families via particular budgetary allocation and linkage to health care delivery like the Employees' State Insurance Scheme would result in a protracted process of social justice, which is their right.

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