

## Short Report

### Health issues of sanitation workers in a town in Karnataka: Findings from a lay health-monitoring study

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#### ABSTRACT

**Background.** Official estimates are not available for mortality or morbidity among sanitation workers (including manual scavengers) in India. Little is known about their health issues and health-seeking behaviour in the context of their occupational hazards (work practices and exposures). We attempted to understand the nature of health problems of sanitation workers using a lay epidemiological process.

**Methods.** A community-based organization working in Chitradurga town in Karnataka for the development of sanitation workers recorded the health problems of workers and their treatment-seeking practices every month using a health-monitoring tool. We used a lay epidemiological approach to identify occupational health problems and deficiencies in healthcare access through the narrative of workers' perceptions of their illness. Descriptive analysis was done to map the occupational health status, healthcare-seeking practices and the social support mechanisms in place.

**Results.** Injuries and chest pain were the most commonly reported illnesses. Most workers continued to work without appropriate treatment as they ignored their illness, and did not want to miss their wages or lose their job. Self-medication was common. Intake of alcohol was prevalent to cope with the inhuman task of cleaning filthy sewage, and as a modality to forget their health problems. The pattern of illnesses reported during monthly monitoring was also reported as long-standing illnesses. Health and safety mechanisms at workplace did not exist and were not mandated by regulatory bodies.

**Conclusion.** Health and safety of sanitation workers has been inadequately addressed in public health research. Sanitation work lacks specific protective regulatory guidelines to address health hazards unlike other hazardous occupations.

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The government needs to institute an adequate health-monitoring and healthcare system for sanitation workers.

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#### INTRODUCTION

In Karnataka, persons employed in all forms of collecting waste, cleaning sewage pits and drains, sweeping roads and collecting and disposing of human and animal excreta, and animal corpses are called *pourakarmikas* (includes manual scavengers, sewer workers, sanitation workers).<sup>1,2</sup> The worst form of waste collection, 'manual scavenging', involves collecting, handling and disposing of human excreta from dry latrines, open sewer drains, sewage pits, open public places using brooms, tin plates, baskets or buckets without any personal protection. These dehumanizing forms of waste management are done mostly by Dalit community groups, commonly by the Madigas.<sup>1</sup>

The 'Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act' was enacted in 1993 and enforced in 1997, over 40 years after India's Independence. Several advocacy campaigns have attempted to abolish the practice of manual scavenging<sup>3</sup> and government schemes have been launched to rehabilitate them and improve their living and working conditions.<sup>1,4</sup> A new legislation called the 'Prohibition of Employment as Manual Scavengers and their Rehabilitation Bill, 2012' enacted by Parliament, despite its shortcomings,<sup>5</sup> has encouraged widespread discussion to provide dignity to a community entrenched in exploitation. However, there has been little improvement in the social status of sanitation workers. Media reports and studies reveal the sad plight of sanitation workers with respect to the hazardous nature of their job leading to premature death,<sup>6</sup> the serious nature of their health problems,<sup>7</sup> lack of security in employment, low wages, and their continued social oppression. No official estimates are available for mortality or morbidity in sanitation workers in India. There are a few epidemiological studies on the nature of health risks<sup>8–10</sup> and magnitude of disease burden of sanitation workers<sup>7,10,11</sup> from metropolitan cities of Mumbai and Delhi but none from small towns in India, where the main sewage carrier system is open sewer drains. Little is known about sanitation workers' access to healthcare in the context of their occupational hazards. We used a participatory methodology to document the nature of health problems and the treatment-seeking practices of sanitation workers in Chitradurga, Karnataka.

#### METHODS

##### *Lay epidemiology to understand health risks*

Lay epidemiology has been defined as 'the process by which lay persons gather statistics and other information and also direct and marshal the knowledge and resources of experts in order to understand the epidemiology of disease'.<sup>12</sup> Lay epidemiology includes two elements to identify 'what constitutes an illness or disease'; first, the lay person's belief about an illness and second, how this is influenced by the values or beliefs that people link to health and health risks in life.<sup>13</sup> The need for using lay epidemiology has arisen from the desire to view a public health professional's perception of risk vis-a-vis an individual's or a community's definition of risk and illness.<sup>14</sup> It has been used by communities

and occupational groups exposed to hazardous chemicals and processes to understand their health risks, and both qualitative and quantitative study methods have been used to document, describe and analyse disease conditions among farmers, agricultural workers and workers in hazardous industries or occupations.<sup>14,15</sup> The affected communities have a say in the problem being studied, but more importantly have a say in the way their day-to-day suffering is recorded and communicated. Thus, community-based or -led research enables capturing the views of affected people and the sociopolitical context.<sup>14</sup> In India, a process of knowledge-sharing by communities, advocacy groups (on dimensions of environmental or occupational health hazards and struggle for rights), and by doctors, epidemiologists and public health practitioners (on the systematic ways of studying human health impacts) was initiated in 2001. Called the 'Community Health and Environment Survey Skillshare' (CHESS) process,<sup>16</sup> it helped generate evidence of health impacts due to environmental and occupational hazards by simple lay epidemiological studies conducted by community groups. CHESS has been a collaborative process between epidemiologists and communities, responding to their local interests, integrating lay experiential knowledge in scientific enquiry and thus empowering communities.<sup>17</sup> It is hoped that this effort will support the struggle for justice of the affected communities.

#### *Study setting*

The members of a community-based organization (CBO) were associated with sanitation workers in Chitradurga, in creating awareness on the nature of their job, the need to fight social ostracization and opportunities for social and economic development by accessing benefits of government schemes. The CBO wanted to understand the range of health issues due to sanitation work and explore how the community's capacities to access healthcare services be strengthened. Through the CHESS process, group discussions were conducted as a first step among workers (men and women) living in a large urban neighbourhood in Chitradurga, to understand their perceptions on sanitation work and occupational health. These revealed that occupational health was not their prime concern.<sup>18</sup> Both women and men workers reported injuries, aches and fever for which they most often did not seek medical care or avail leave of absence. While men opined that drinking alcohol was necessary to work in the filth, women highlighted the physical and verbal abuse they faced because of alcoholism. Reflecting on the group discussions, the CBO team felt it was important to systematically document the health issues related to the nature of work and how the workers tackled these health issues.

#### *Participatory research process and methodological considerations*

The first and second authors conducted training on concepts of health, right to health and occupational health, and the process of lay health monitoring, for the CBO team over 2 months. The team was trained to identify and record health issues of workers using a health-monitoring tool, adapted and translated into the local language, Kannada. The aim of monitoring the workers was to understand the nature of health problems related to their work, and their accessing healthcare services. The collective process of discussion with the CBO team facilitated the planning and conduct of the study. The CBO team visited workers residing in three urban neighbourhood areas in Chitradurga town. They contacted the workers at their houses and explained the purpose of the health-monitoring study during the first visit. Some of the workers

were hesitant to answer questions on their health status as they feared this information may be used to remove them from their job by the contractors. This kind of study on health was new to them, and therefore the trust of the workers had to be slowly gained by making multiple visits to their houses. In view of the concern of the workers, written consent was not taken, but the CBO team assured the workers that the information would be confidential and not shared with contractors or government officials. The ongoing engagement by the CBO team with the workers facilitated repeated visits every month to their houses for administering the questions over a 4–6-month period.

During the monthly house visit, each worker was administered a tool that probed: (i) work-related illnesses, (ii) recent (during the past month) and past (asked only in the first visit) illnesses and, (iii) treatment-seeking practices and information related to absenteeism from work due to illness or injury. A total of four visits, at least one visit per month per worker over a period of 6 months were done. The workers explained about past major illness defined as one of the following: a distinct event in the past with consequences, repeated episodes of an illness (such as asthma) present over a long period, a serious illness requiring prolonged treatment, long-term admission or with long-term consequences (could signify long-term debility and lack of earning capacity). Every month, the completed questionnaires were reviewed for any incomplete information and further corrections were made during subsequent home visits. Thirty-eight workers who were available in the neighbourhood during the CBO team visits and willing to participate were interviewed initially and followed up every month. Descriptive analysis was done by the authors on the complete data available for 29 workers.

## RESULTS

### *Health issues and treatment-seeking practices*

A total of 18 men and 11 women workers ( $n=29$ ) were interviewed with an age range of 20–58 years. They were predominantly contract workers ( $n=19/29$ ) and few men were self-employed. Most of them had been working for 5–15 years.

Injuries were the most commonly reported illness by men. Bruises, cuts, lacerations and haematomas occurred while they entered drains and crawled in to clear the waste (human faeces, sludge, decomposed animal parts and solid waste). The men did not take leave and continued to work in over three-quarter of the injury episodes, because of fear of losing their job. Chest pain, next to injuries, was commonly reported by both men and women, and was also described as a long-term illness. Bodyache, backache, leg pain and headache due to the physical manual labour were reported during the monitoring. Most workers reported frequent episodes of fever, cold and cough (Table I). Alcohol consumption and self-medication were the main methods of relief from their symptoms.

The workers did not report skin or systemic infections.

## DISCUSSION

Most workers reported injuries as well as illnesses. Injuries were the commonest followed by chest pain. It is understandable that workers involved in manual labour would be prone to injury. However, most often the workers did not take time off work as they were contract workers and feared losing their wages and jobs.

Chest pain was reported by many workers and could be one of the symptoms of a spectrum of respiratory and cardiovascular problems, and merits further study. Chest pain could also be muscular due to lifting, carrying heavy stone slabs while clearing

TABLE I. Health issues and treatment-seeking practices of sanitation workers

Health issue	Men		Women	
	Nature of illness	Treatment-seeking practices in descending order	Nature of illness	Treatment-seeking practices in descending order
Injuries	<ul style="list-style-type: none"> <li>• Glass pieces bruising the foot and legs</li> <li>• Bruises in hands and fingers by hurting against stone slabs</li> <li>• Bruises/cuts/swellings in legs while removing stone slabs or slabs falling on the feet</li> <li>• Falls from garbage tractor/truck</li> <li>• Bruises on legs while hitting against garbage collecting tractor</li> <li>• Burns on hands while handling acid solutions</li> <li>• Eye irritation, watering due to dust inside eyes</li> <li>• Bruises, cuts on hands and legs while removing sewage debris in drains</li> </ul>	<ul style="list-style-type: none"> <li>• Continued to work</li> <li>• Medicines or dressings from pharmacies after work hours</li> <li>• Rest at workplace supplemented by medicines from pharmacies</li> <li>• Government hospital</li> <li>• Private hospitals</li> </ul>	<ul style="list-style-type: none"> <li>• Bruises due to vehicles hitting against them</li> </ul>	<ul style="list-style-type: none"> <li>• Government hospital</li> <li>• Self-medication</li> </ul>
Recent illnesses	<ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Bodyache/tiredness</li> <li>• Cough and cold</li> <li>• Headache</li> <li>• Leg pain</li> </ul>	<ul style="list-style-type: none"> <li>• Over-the-counter medicines</li> <li>• Drink alcohol before work to prevent onset of illness</li> <li>• Drink alcohol after work for chest pain, tiredness and aches</li> </ul>	<ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Bodyache</li> <li>• Leg pain</li> <li>• Fever</li> </ul>	<ul style="list-style-type: none"> <li>• Medical pharmacy</li> <li>• Private doctor</li> </ul>
Past illnesses	<ul style="list-style-type: none"> <li>• Injuries at work place: fracture, head injury</li> <li>• Repetitive episodes of chest pain, aches</li> <li>• Repetitive episodes of cough and cold, fever</li> </ul>		<ul style="list-style-type: none"> <li>• Repetitive episodes of chest pain, aches</li> <li>• Repetitive episodes of cough and cold, fever</li> </ul>	

the drains and loading baskets of waste or sludge onto trucks and tractors. The foul smell of sewage contains noxious gases such as hydrogen sulphide and methane, which are known to cause hypoxic injury to lungs that can trigger chest tightness, chest pain, breathing difficulties and a variety of central nervous system symptoms that have been attributed to direct effects of hydrogen sulphide on the brain.<sup>19</sup>

Episodes of fever, cold and cough that the workers reported could signify infection from inhalation of infectious aerosols, dust and noxious gases. The risk of contracting infections (skin/systemic) from handling hazardous faecal matter and sewage debris was high, but not reported by the workers. Infections such as leptospirosis are known to be prevalent among sewage workers<sup>20</sup> and have been reported in serological assays among conservancy workers in Chennai and Pune.<sup>8,9</sup> India does not have estimates of leptospirosis as an occupational disease among sanitation workers.

The illness pattern reported during monthly monitoring (injuries, aches and pains, cough and cold) were also reported as past illness (occurrence of repeated episodes in the past) and perceived as major illness, as compared to traditional medical definitions of major illness. Such chronic nature of a range of symptoms and illnesses imply the lack of curative treatment and the ongoing continued exposure to workplace hazards.

Most workers did not seek any immediate treatment for two reasons—they ignored the injury or illness and also because they did not want to miss their wages due to absence from work. There is no system for immediate first-aid and timely appropriate treatment. Though the workers reported seeking treatment at government hospitals, the most common practices were intake of over-the-counter medicines from pharmacies and drinking alcohol. Both these practices need to be curbed and reflect the lack of response of the public health system to the medical needs of these

workers. There was a lack of trust and sense of hopelessness with the public health system; as explained in the earlier group discussions,<sup>20</sup> that they had to still buy medicines, pay for investigations or bribe healthcare providers in government hospitals. All the above factors dissuaded the workers from seeking healthcare for their health problems.

Workers reported that they consumed alcohol before and after work to make them insensitive to the putrefying smell of sewage, decomposing animal corpses and faecal matter. They said that alcohol relieved the drudgery of the work, and also helped them recover from tiredness and other illnesses. Alcohol consumption was a long-standing, and had become a normative, practice, which had become a therapeutic modality for all their work-related health problems. Thus, the study reaffirmed the workers' perspectives that alcohol consumption was common and necessary, shared during earlier group discussions.<sup>18</sup>

#### *Safety at workplace*

It has been reported that sanitation workers in India do not use any protective equipment—boots, gloves, masks or other equipment to clear the drains or collect the solid and liquid waste.<sup>6,7</sup> In Chitradurga, the contract workers said that they were not provided any safety equipment.<sup>18</sup> The health and safety of sanitation workers is not explicitly guaranteed by a legislation such as those for workers in plantations, factories, mines, dock and construction sector. Also, there is no legal mandate for reporting injuries, unlike in the Factories Act. These workers are not covered by the Employees' State Insurance Scheme to safeguard from occupational diseases or injuries. Thus, there are few instances of compensation by the employer or contractor. The new legislation fails to address health risks and is problematic as it does not define workers using protective gear or devices to clean faecal matter as

manual scavengers. This definition and provision of safety equipment may only serve to legitimize manual scavenging and other forms of septic or sewage cleaning. It also fails to address long-term disability and medical rehabilitation of these workers.

### Conclusion

The hazardous nature of sanitation work has been internalized as normative by workers of the Dalit community engaged in manual scavenging and other sanitation work.<sup>21</sup> This has manifested in apathy of the political system by not addressing the larger issue of sanitation, worker safety and emancipation of a downtrodden caste.

The lay epidemiological process uses lay people with training to identify occupational health problems and gaps in access to healthcare of marginalized workers. This study also revealed their perceptions of health risks, moulded by their low social and economic status. Alcohol intake was perceived to help in tackling the hazardous work and reported as a method of treatment for all illnesses. This is perhaps the most important public health concern and any intervention to tackle alcoholism would have to also address the social ramifications of caste-based employment, the perpetration of such a hazardous job and the link between alcoholism and poverty. The social oppression of sanitation workers has been so overwhelming that the importance of their job in maintaining hygiene, preventing spread of communicable diseases and safeguarding health of the society has never been acknowledged.

Efforts to realize the health rights of these marginalized workers should include implementation of safety practices at work, occupational health surveillance and research, and legislation that identifies hazardous work practices and work-related health problems as notifiable and compensable. Provision of medical care to workers and their families by specific financial allocation and linking to healthcare delivery systems such as the Employees' State Insurance Scheme will lead to the long process of social justice which is their right.

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*Conflict of interest:* None declared

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