

Review Article

Solid waste workers in India and the COVID-19 pandemic: A Review of Intersecting challenges

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ABSTRACT

Introduction: Municipal garbage/refuse, sludge, industrial and commercial waste, etc. is termed Solid Waste (SW) and those who handle such waste are SW workers. But the COVID-19 pandemic has hit them hard. SW workers play a vital role in waste management to safeguard and promote public health. But they are often unappreciated and the various health risks and vulnerabilities associated with waste handling are overlooked. This study aimed to review the working conditions and morbidities of SW workers highlighting the longstanding challenges before and after the onset of COVID-19 in India.

Methods: Databases such as PubMed and Google Scholar were used for the inclusion of articles. Drawing from the literature on the working conditions and morbidities of SW workers in India alongside grey literature and news reports by electronic media during the pandemic, this paper highlights the longstanding challenges of SW workers.

Results: The health morbidities and structural challenges due to caste, and class that were reported as being faced by SW workers across the studies have worsened at the onset of COVID-19. There is a multiplying effect of their vulnerability due to the disadvantages of caste and class. Due to power dynamics, they were forced to work without proper wages and appropriate healthcare resources. Many incidents across the country reported stigma and discrimination; poor access and utilization of Personal Protective Equipment (PPE) among SW workers resulted in infections and deaths due to the pandemic. Lack of proper data on COVID-19 infected SW workers; lack of proper certification had halted their insurance claims.

Conclusion: This paper noted the multiplying effect of long-standing vulnerabilities that were exposed during the pandemic. Proper maintenance of health records and a sustainable employee grievance redressal mechanism are essential. The need of the hour is to focus on strategies to improve their working conditions along with policies to protect their dignity and empower them.

Keywords: discrimination, health, occupation, morbidities, personal protective equipment, solid waste workers, India.

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Introduction

In the country's capital, Delhi, more than half of the Coronavirus Disease (COVID-19) deaths among the staff of the municipal corporation were the *safai karamcharis* i.e. the Solid Waste (SW) workers.¹ Municipal garbage/refuse, sludge, industrial and commercial waste, etc. is termed as SW and those who handle such waste are SW workers. These workers play a vital role in waste management to safeguard and

promote public health. But they are often unappreciated, underpaid and overlooked. They suffer from various health risks and vulnerabilities due to physical, chemical and psychosocial hazards associated with waste handling.² There is an ever-present risk of infection, infestation, and death for the SW workers. It is no surprise that the pandemic has hit them hard.

The World Health Organization (WHO) declared COVID-19 as a pandemic on March 11th, 2020. During this pandemic, various types of waste including healthcare waste are being generated. Microbiologic wastes and injuries from sharps have more risk of transmission of infectious diseases.³ Household waste management also remains critical during the COVID-19 crisis as healthcare waste could be easily mixed with domestic waste. A COVID-infected person probably generates around 3.4kg of hazardous waste per day.⁴ People in quarantine or isolation have limited awareness about proper waste disposal from households/areas and such infected waste was being disposed of in a common bin along with the domestic waste.⁴ It has been more than a year since the outbreak of COVID, yet still household waste segregation practices in the cities have not changed.^{5,6} The possibility of the spread of infection from these sources, and the work environment during the pandemic might put the SW workers at high risk of contracting COVID infection given the inadequate Personal Protective Equipment (PPE) they have.

The workers handling waste are employed in their jobs either by municipalities or connected with any associations/co-operatives or self-employed. Based on how they are employed and the activities associated with waste handling, the workers fall into various categories. They could be door-to-door solid waste collectors, on-route/truck waste pickers, street sweepers, silt removal/drainage cleaners, and street/dump/landfill waste pickers.⁷ These workers also include those handling general waste from hospitals. Most of the SW workers are engaged in waste handling based on caste, particularly the lowest in the hierarchy of caste system in India or the generational transmission in their family.⁸ The individuals involved in these jobs are considered “dirty” and hence “untouchables” in India.⁹ This is apparent from the most commonly used term “*kachrawalla*” (garbage people) to refer to SW workers instead of “*safaiwalla*” (cleaning staff).¹⁰

In developing countries, because of limited resources, the process of waste handling in urban localities mostly remains manual¹¹ putting the SW workers at risk of injuries as the job of waste handling itself involves physical hazards while lifting waste loads, using trolleys, contact with sharps, etc. Also, there is a risk of biological hazards due to bacteria, viruses, or fungi and injuries or zoonotic diseases due to animal/insect bites. Due to this, SW workers are likely to suffer from various medical conditions including dermatological, respiratory, gastrointestinal problems, and many other morbidities. None of the workers in the study had awareness regarding diseases caused due to handling waste.¹² Due to direct contact with waste, they are at risk of health hazards. There may be cuts and infections from sharps. Hazardous smoke from burning waste if inhaled is an issue affecting their health.¹³ On the other hand, Bio-Medical Waste (BMW) and municipal waste should not be mixed,¹⁴ that needs attention because of the nature of the risk it poses to people who handle it or comes in contact with it putting them at risk of Hepatitis B, C, and other infections. In 2009, India had a Hepatitis outbreak in Modassa, Gujarat due to unsatisfactory BMW management.¹⁵ Without proper protective wear, without appropriate preventive care, SW workers continue to risk their lives working through different kinds of waste ending up in multiple morbidities.

While Indian cities race to stand among *Swachh Bharat Abhiyan* (Clean India Programme) clean city rankings, the predicament of SW workers who strive to achieve this cleanliness is still questionable.

As the population expands in urban settings, they have to cope with the increasing waste generation, particularly the healthcare waste mixed with domestic waste which is very risky, especially during a pandemic. Working conditions during public health emergencies are even more pathetic for SW workers. Health risks and impacts due to the pandemic varies across caste, class and gender and their vulnerability multiplies as these aspects intersect.¹⁶ This affects their quality of life leading to job losses and increased economic burden. All the challenges that the SW worker group has been facing are long-standing for decades.

Therefore, drawing from literature on their working conditions and morbidities alongside grey literature and news reports during the pandemic, this paper aims to highlight the longstanding challenges of SW workers in India. On the whole, the paper showcases their plight before and after the onset of COVID.

Methods

This is a review of literature reporting on occupation-related issues and health morbidities of SW workers in India. Various groups such as sweepers, garbage collectors, workers at dumpsites, sewer workers, etc. were considered SW workers and included in the review. Though not formally engaged, even ragpickers deal with solid waste contributing to waste management, hence were also included. Workers handling electronic waste or working in hospital settings were excluded.

Studies on social challenges, occupational morbidities, practices and healthcare among SW workers engaged under municipalities and those on ragpickers published from 2001 to 2021 were included. Articles were searched in the PubMed database using search terms like waste worker, garbage collector, sewage worker, *safai karamchhari*, sanitation worker, conservancy staff, waste loader, waste handler, sweeper, hazard, morbidities, health problem, risk, workplace, personal protective equipment, protective gear, safety wear. A hand search of articles and cross-references in Google scholar were also screened for inclusion. Titles and abstracts of the identified articles were screened; articles that were eligible to be included were cross-checked for duplicates. Studies with no full-text access or only abstracts available, reports, commentaries, dissertations, and editorials/letters to the editor were excluded. The second tier of grey literature included was the news reports by the electronic media from January 2020 to July 2021, hand searched in Google about SW workers experiencing challenges during the COVID-19 pandemic in India.

Results

The findings are focused on different sections. The first section presents the occupational challenges and health morbidities associated with waste handling through secondary data findings of original research studies among SW workers and ragpickers in India. The second section presents their hardships during COVID-19 in India collected through several e-newspaper reports.

Challenges before the COVID-19 pandemic

Structural differences related to the job of waste handling:

SW workers are usually engaged as permanent or contractual. In a study among sanitary workers in Kerala, 64.6% of them were regular corporation workers¹⁷ while studies in Odisha and Karnataka found predominantly contract workers.^{18,19} Wage difference between regular and contractual workers has also been reported. Some of the contractual workers get no or minimal hike in salaries even after several years into the job. Those employed on a contractual basis continue this job because of the lack of availability of other jobs. Only regular workers reported receiving medical benefits or allowance.²⁰ The working conditions are very vital for any occupation, but the job of

waste handling by nature itself involves unhygienic conditions. A few studies reported a lack of basic amenities like drinking water, adequate seating at the reporting places, washing facilities (soap and water), or toilets near collection points, workplaces, or work stations in dumping yards.^{8,21,22} While some workplaces have the facilities but are not in a condition to utilize them or were grossly inadequate. The workers had no proper lunch break and eat only after their work is complete.⁸

Adding to these workplace issues along with a diverse group of morbidities and problems with PPE, social challenges turn this group into one of the most vulnerable. Many studies noted how SW workers were downtrodden. The SW workers face stigma/discrimination from society due to their occupation, their families were treated as untouchables, have no proper social life and verbal abuses were very common.^{18,23} Discrimination in marriages and school was also reported.¹¹ Social exclusion, threatening by high caste people, or being accused of thefts was reported but the ragpickers were habituated with all the abuse considering it as a part of their work itself.²⁴ Lack of visibility in society makes them fall prey to these structural differences. Such a scenario worsens at times of onset of any health emergency.

A pool of Health Morbidities among SW workers:

SW workers experience a diverse group of health morbidities most of which are specific to their occupation or have more risk of acquiring particular morbidity than a general population.²⁵ The most commonly reported occupational health problems are skin problems, cuts, bruises and wounds.^{8,26,27} Among SW workers, Jayakrishnan et al., 2013 and T. Patil & Raje, 2020 reported a high prevalence of injury with sharps (73.2% and 70%).^{21,11} Among ragpickers, a few studies reported a very high prevalence (75%-93%) of injury with sharps.²⁸⁻³⁰ High prevalence of skin infections among SW workers was seen in a study¹² compared to a few other studies.^{20,31} Nayak. et al., 2013 documented various types of dermatological problems reported due to waste handling.³² Attack by animals during work was also reported among municipal SW workers^{21,31} and rag pickers.^{28,33}

A study among the municipal SW workers in Chennai had 3.3 times the odds of having respiratory morbidity than the control group²⁵ and it was 4.24 times among sweepers in Nagpur than a control group of Class IV workers in the office buildings.³⁴ The risk increased significantly with increased duration of service.^{12,34} Studies of lung function tests among SW workers reported a significant reduction in lung capacity as the years of work experience increased. They were also significantly reduced than a control group compared across most of the studies.^{35,36} This reduction was also significant among those who did not use masks and who used masks regularly while sweeping.³⁷

SW workers especially the sewer workers would be exposed to drains that have a niche for leptospira so are at risk of leptospirosis which is both an occupational disease and a zoonosis. In a study on seroprevalence of leptospirosis, sewage workers were second-highest among five high-risk occupational groups assessed.³⁸ SW workers are exposed to many pollutants present in the waste they handle and would even contain toxic heavy metals. Biochemical tests among SW workers engaged formally had altered elemental profiles in the blood such as iron, bromine, and copper-zinc ratio; compared to that of the general population.³⁹ Hematological tests had shown increased white blood cells suggesting inflammation and allergic reactions among SW workers.²⁵ Biochemical tests among ragpickers had shown that their occupation adversely affects immunity,⁴⁰ even causing cytological and genotoxic damage⁴¹ which leads to cancer. Significant airway inflammation was found among women ragpickers making them more vulnerable to chronic diseases compared to a control group of women.⁴² Sputum cytological changes such as metaplasia

and dysplasia of airway epithelial cells were observed in a study which is a sign of greater risk of cancer.⁴³

Apart from health issues that were common to the job of waste handling, certain other chronic morbidities reported were diabetes and cardiovascular problems.^{17,26,44} SW workers were found to have 1.8 fold higher risk for hypertension.²⁵ A study in Ahmedabad reported a comparatively high proportion of hypertension³⁵ among SW workers group involved in street sweeping than a control group of administrative staff (public health supervisor, sanitary inspector, and sub-sanitary inspector). Other morbidities such as tuberculosis²⁵, eye problems^{12,31}, dental problems¹¹, gastrointestinal problems¹¹ and frequent hit and run accidents^{22,29} were also reported. Most of the SW workers were not having nutritious food in a study in Tamil Nadu but the method of assessment isn't clear.⁴⁵ This could be supported by a study finding of street sweepers are significantly underweight compared to the control group at Ahmedabad Municipal Corporation.³⁵ Anemia was also an issue of concern reported commonly among SW workers and rag pickers across studies.^{35,17,46,47}

On the other hand, mental health problems such as mild depression were reported among half of the workers in a few studies.^{28,48} A study in Mumbai reported poor mental health among SW workers compared to a control group of class-IV employees working as back office helpers or fogging/spraying workers.⁴⁹ This was due to various reasons such as fear of loss of job, low wages, daily struggle for survival, lack of hope for a better life and uncertainty about their future.⁵⁰ In a study in Pune, quality of life assessed among SW workers was found to be affected negatively, particularly in their physical, social, and environmental domains³⁶ than the control group. The social domain among sewage workers in Puducherry was found to be very low in a study.⁴⁴

Healthcare access:

In case of any morbidity, mostly the SW workers continue with their work without any appropriate treatment. With a fear of loss of pay, the SW workers don't get their wounds treated adequately, exposing them to further complications. Inadequate knowledge about healthcare and where to access the services is also a critical factor. They usually resort to alcohol consumption and self-medication to get relief from their symptoms¹⁹ or rely on home remedies for minor health problems.¹⁸ Desludging workers would apply mud immediately when injured as a temporary first aid²⁷ but this has a risk of acquiring tetanus. A comparative study in Ahmedabad showed that the administrative group had better health-seeking behavior attributing to controlled hypertension than the SW workers group.³⁵ 68.7% of SW workers who were formally engaged were utilizing government hospitals for health problems¹⁷ as they could not afford treatment in private hospitals. But it was reported that government hospitals lacked proper health facilities (particularly pharmacy and diagnostic tests), and healthcare is often delayed due to overcrowding and poor attention from doctors.^{8,22}

There was no health education given or regular health checkups at the workplace. Though the Municipal Corporation of Greater Mumbai has earlier organized medical check-ups, most of the SW workers have not attended them.⁸ A study among conservancy workers in Chennai has highlighted the need for prophylactic immunizations, especially Hepatitis-B vaccination (HBV) as it found an 8% prevalence of hepatitis B carriers among SW workers.²⁵ Majority of SW workers have not got any vaccination such as HBV or tetanus toxoid³¹ and only 3 had received HBV vaccine in a study.²¹ While 30.6% of them had taken tetanus injections and were working under a municipal corporation

in Maharashtra.¹¹ In contrast, only 35.16% of SW workers under Aurangabad Municipal Corporation were not immunized against hepatitis B and 19.24% did not receive TT in the recent past or were not fully immunized against Tetanus.²⁶

While ragpickers were ignorant of their health. The services being inexpensive, they too prefer government hospitals but only in case of serious illness.^{46,48} Some of them rely on self-treatment if the health facility is distant to them. A few would opt not to procure the prescribed medication as they felt it was unaffordable.⁴⁸ Despite dog bites reported among 23 workers, only 2 of them had completed post-exposure prophylaxis for rabies from a nearby municipal dispensary in a study among women ragpickers in Mumbai. This study also found that women ragpickers were married at a young age, had a low preference for temporary contraceptive methods, and experienced multiple pregnancies.⁴⁶ Antenatal care is important for the health of women and the unborn child, but the majority of ragpickers had no proper antenatal care.^{33,46} Mohapatra, 2012 reported in a study that 40.5% had delivery/abortion by doctors while 59.46% approached *dhais*.⁴⁷ This finding was similar to a study by Uplap and Bhate, 2014 with 43.5% having home delivery and 47.6% with hospital delivery in the last pregnancy.⁴⁶ But in a recent study, home deliveries were high (80%) among women ragpickers.³³ There were studies promoting health in this group which were found to be effective in improving knowledge on anemia prevention and reproductive health,⁴⁶ and knowledge on the occupational hazard and hygiene.⁵¹

The use of PPE among SW workers was never a convention:

Lack of safety measures and lack of awareness regarding health were the prime causes of health morbidities and occupational hazards. Most of the studies among SW workers in India reported inadequate use/supply of PPE at the workplace such as the use of gloves, gumboots/protective footwear, masks, and reflector aprons.

The findings across studies ranged from complete no use to a considerable rate of use of PPE by the municipal SW workers. In one of the municipalities in New Delhi, Patel & Datta, 2018 reported comparatively good rates of using one or the other PPE; 86%, 80.5%, 53.7% and 19.5% were using aprons with reflectors, shoes, masks and gloves respectively while working.⁵² Another recent study in Puducherry reported that 44.8%, 19%, and 10% were using footwear, gloves, and facemask respectively and none were using goggles or suits.⁴⁴ It could be observed from these studies that the use of gloves is comparatively less than other forms of PPE being used. A few studies reported that none of the SW workers engaged under municipalities were using PPE while working.^{19,32,34} The reasons included an irregular supply of PPE and lack of motivation to use. Even though half of them were provided with PPE¹⁷, only 20%³⁷ or less than 20% were using PPE citing the reasons for not using such as non-availability, not being aware of such devices, found it difficult to work with devices on.²⁶

Some municipal corporations don't provide PPE regularly, even if they provide it would be of poor quality or a poor fit for the workers. The size/design of PPE was inflexible for the nature of their work which was even leading to accidental injuries while working with these devices. Due to these difficulties, most of them were not using PPE.^{8,23,27} While 12.3% of the SW workers working under municipalities were using unconventional PPE such as handkerchiefs and dupattas³⁵ and most of them used towels to cover their faces.²⁷ Gautam et al., 2021 conducted a study among SW workers working in sewers that highlighted various constraints in using the currently available PPE which also explored workers' preferences about PPE and its design. This study revealed preference for

PPE in the following order- gloves, mouth mask, gas monitor and gumboots, goggles, helmets, and jackets. These SW workers preferred waterproof, splash-proof, grippy, arm-length gloves that are easy to clean and aid in protecting from sharps. A tight-fitting, waterproof, and easy-to-communicate mask was the first choice, which can protect from harmful gases.²⁷

Similar to municipal SW workers, the use of unconventional PPE was found among ragpickers where 60% of them used plastic bags or a hook as a precautionary measure while searching through the waste.²⁸ In one of the recent studies, 23% of them reported using masks/gloves.⁴¹ Notably, a high proportion (70.3%) of ragpickers working at a dump yard in Chennai reported using one or the other PPE, such as gloves, footwear, headgear, and masks.⁴⁸ Most of the studies reported that none of the ragpickers used PPE.^{29,33} The ragpickers did not care about the risk of injury and even the availability of PPE was also a problem.

Frontline warriors during the COVID-19 pandemic no-where in the front

The chaos has been continuing as the first and second waves of COVID-19 hit the country. Several lockdowns were imposed to date but health and emergency services were continued. SW workers too continued their work during the chaos. It is this group of workers who were most affected during the pandemic. A study by Urban Management Centre and Water Aid India has reported that with added responsibilities such as disinfection to prevent transmission of the virus, some of the SW workers had to work for additional 2-6 hours per day than their usual work hours without any compensation for the extra workload.⁵³ Long shifts of up to 30 hours were reported among some of the hospital waste workers. Public transport services were suspended to combat the spread of the virus. The SW workers had to commute either by walking for long distances or using their mode of transport bearing the additional fuel expenses.⁵³ The SW workers continued to work for their livelihoods with the fear of not only getting contracted the COVID infection but with an added fear of spreading it to their families. Some of them reported losing jobs if they got infected or if any of their family members were infected or passed away due to COVID.⁵⁴

The COVID-19 pandemic was found to be yet another intersectional aspect pushing SW workers to extremely strenuous livelihoods. Though there were instances during the pandemic applauding the SW workers across the country for being the frontline warriors fighting for cleanliness and sanitation of the cities, the ground reality of their lives remained the same. The literature findings in earlier sections showed decreased lung capacity among SW workers along with other comorbidities which are potential risk factors for contracting COVID further worsening their health morbidities. The occupational issues of SW workers do not just constitute health morbidities but pull up wider social and economic problems resulting in horizontal inequities that are exacerbated during the current pandemic. The injustices for SW workers such as getting ostracized have been continued by social division with cultural stigmas of impurity and dirt⁵⁵ associated with low caste people. Discrimination due to their class, caste and stigmatized occupation roles has been rampant during the pandemic⁵⁶ in terms of provision of hygienic food, PPE, wages and quarantine holidays. Their plight is not new to the current COVID-19 situation; they have been striving for better livelihoods and working conditions for ages. Only a few social activists such as Harnam Singh have been fighting against such unfair treatment of SW workers during the pandemic as well as before its onset. The hardships among SW workers during COVID-19 in India are presented in Table 1 through second-tier grey literature i.e. the news reports on SW workers during the pandemic.

Table 1. Incidents reported among SW workers during COVID-19 in India.

Date	Source	Incident
8 th April 2020	The Telegraph online	Death of a sweeper who was forced to spray chemicals in an area in Uttar Pradesh without any PPE like mask or gloves. ⁵⁷
15 th April 2020	Nava Telangana	Waste handlers in Medak, Telangana were working without a mask and bare hands while cleaning drains, sweeping and garbage collection. ⁵⁸
19 th April 2020	India.com	In Uttar Pradesh, a SW worker succumbed to death, who was forced to drink disinfectant for mistakenly spraying it on the foot of a man. ⁵⁹
28 th April 2020	Sabrang India	Sanitation workers of Brihan Mumbai Municipal Corporation were given Hazmat (hazardous materials) suits. They were asked to wash and reuse them. ⁶⁰
7 th May 2020	The Wire	Without PPE, a sanitation worker in Rajasthan has packed a COVID-19 patient's body unaware of the details of the patient. ⁶¹
10 th May 2020	News Meter	During the COVID-19 lockdown, sanitation workers at hospitals in Hyderabad were made to travel packed in buses and also reported harassment by police on their way to pick-up points. ⁶²
3 rd July 2020	The News Minute	The death of six sanitation workers in Chennai due to COVID-19 was not recorded by the corporation which made the family ineligible for compensation. ⁶³
15 th July 2020	Deccan Chronicle	Sanitation workers reported a huge wage difference between contract and permanent workers in Hyderabad. Permanent workers had only 15 days of work while contract workers did their job the entire month. ⁶⁴
3 rd August 2020	The Federal	Garbage collection vehicles were used to distribute food for SW workers while food supply to other officials has good transportation in Chennai Corporation. ⁵⁶
23 rd August 2020	News Meter	Nine sanitation workers in Gajwel, Telangana, who were infected with COVID-19 reported caste discrimination by officials. They traveled to the hospital in a tractor used for carrying municipal waste as the authorities didn't care. ⁶⁵
8 th April 2021	The New Indian Express	SW workers in Greater Hyderabad Municipal Corporation (GHMC) were working for 14 hours/day without PPE even during the second wave of the Covid-19 pandemic. They often come across domestic waste mixed with medical waste. ⁴
29 th April 2021	The Indian Express	SW workers in Bengaluru have been working without PPE even during the second wave of the Covid-19 pandemic. Their plight was the same for one year of the onset of the pandemic. They handle the waste of those in home isolation but were not provided with PPE. ⁶⁶
20 th May 2021	The Wire	Around 1,500 permanent SW workers of the Greater Chennai Corporation tested positive in 2020.

		SW workers reported that they were at least receiving use-and-throw masks and gloves daily in 2020. But the distribution of safety gear has reduced in the second wave of the pandemic. A worker had developed allergies after being bitten by a scorpion while collecting waste. ⁶⁷
23 rd May 2021	Deccan Chronicle	Salaries were deducted for over 200 SW workers in Hyderabad despite the government order to pay full salaries to frontline workers in case of contracting Covid-19. ⁶⁸
1 st July 2021	Citizen Matters	COVID has affected the earnings of informal waste collectors. Healthcare access was difficult and one of their fellow workers lost his wife during labor due to delivery complications. ⁶⁹

Not even half of the SW workers surveyed during the pandemic received safety provisions like masks, gloves, soaps, sanitizers and towels.⁷⁰ A study during the pandemic found a discrepancy in the provision of PPE to permanent and contractual or SW workers engaged by municipalities and by private agencies. 40% of SW workers in a study reported a lack of access to handwashing facilities at the workplace while some of them also reported a lack of changing and washing facilities.⁵³ These were reported even before the pandemic as evident from the literature. Even though the National policy on Safety, Health and Environment at work place recommends safe, just and humane working conditions,⁷¹ improvements in their work environment and practices are far in sight. A major setback in India is that there is no organized segregation of SW at the household level or at the community bin.⁷² 78.5% of SW workers in a study in Kerala reported that they get unsegregated waste from the houses.²¹ This is the same even during the pandemic.⁴ Waste segregation at its generation level has been blind spotted without taking into concern about who is going to handle it. Basic standard of living and health care access is critical during infectious disease outbreaks. Waste management is even more critical in times of the pandemic and there is a compelling need for addressing the multitude of issues plaguing the SW workers.

Access to healthcare services in general situations and even at times of an emergency remains a mirage to SW workers. The Indian government announced health insurance coverage for sanitation workers during the pandemic in 2020⁷³ but in a study by Nigam D.D & Dubey S, 2020, 87.5% of sanitation workers reported no assurance from the government about health insurance, free treatment, or job security during COVID-19.⁷⁰ Though there is provision for such schemes/insurances, the SW workers or their dependents were yet to avail them.^{63,67} The terms and conditions under these insurances, lack of proper data on COVID-19 infected SW workers, and lack of proper certification had halted their claims.⁵⁴ Vaccination for COVID-19 was made available for SW workers from January 2021 in India. Some of the SW workers were hesitant to get their jabs due to fear of falling sick and losing wages as the supervisor usually look for opportunities to deduct their wages.⁷⁴ Even when services are available, the extent to which people gain access depends on: financial, organizational, social or cultural barriers that limit utilization.⁷⁵ There is a need for facilitating a process whereby SW workers can command appropriate health care resources that are long-standing to improve their health along with stronger actions to safeguard their dignity. COVID-19 is an appropriate opportunity to demand that health services are available including an adequate supply of PPEs.

Target-11.6 of the Sustainable Development Goals (SDGs) focuses on improved urban solid waste management and this will positively impact the other SDGs. SW workers thereby prevent the spread of diseases and contribute to SDG3 i.e. Good health and well-being. This in turn directly helps in making cities safe and sustainable (SDG11), also increasing the availability of clean water because of improved sanitation(SDG6), protecting land and water bodies thereby indirectly contributing to SDGs 14 and 15. To achieve these goals, enhancing the livelihoods and workplace conditions of SW workers have to cross hand in hand. Health is not limited to the physical dimension; it even includes mental and social well-being. Good health is important for cultivating sustained urban livelihoods, developing a healthy workforce, creating resilient and diverse cities, facilitating mobility, encouraging social engagement, and protecting vulnerable population groups. So strong urban policies should be framed considering all the existing challenges.⁷⁶ Therefore, it is important to recognize the vulnerabilities of SW workers and associated factors for good policy practice.

Conclusion

The paper highlights the fact that the challenges of SW workers, including the crucial considerations of caste and class, have been long-standing and worsened at the onset of COVID-19 in India. Inadequate use of PPE is not an abrupt scenario; many studies have been reporting the same. Whether it is an availability or affordability or design issue, there are no measures or adequate policies in place for addressing their concerns and nothing has been improved over years. The diverse group of health morbidities, a serious public health concern, could have been brought down to a considerable rate if there has been an appropriate use of PPE. COVID-19 has multiplied these health vulnerabilities. It is equally important to combat the increased rate of morbidities among this group contributing to the global disease burden. Even social stigma, their economic status, access to healthcare and the cost factor involved are the key issues. All the measures to address their problems are partial and temporary which vanish or become less interesting to the authorities as time goes by. Periodic health screening, appropriate use of PPE, maintaining records and employee grievance redressal mechanism is essential. Exploratory research in different settings helps in understanding workplace challenges besides health morbidities. Interventions targeting one particular population group like SW workers will contribute to sustainable health for all given their key role in keeping cities clean and safe. Without SW workers we can neither achieve sustainable goals nor mitigate the risk of COVID-19.

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