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Life and Working Conditions of Waste Management Workers (Safai Karamcharies) in Kota City

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ABSTRACT: In system of solid waste management, waste management workers constitute the backbone of the system and hence they play an important role in maintaining the quality of environment and health of its citizens. Despite this very significant contribution, the waste management workers of the city works under hazardous condition such as ,they don't have adequate safety measures and have limited social security benefits etc, and hence, this study examines the conditions of the working environment, health and the socio-economic conditions of waste management workers in the city. For this study, a mix methods of research design has been used, which includes a survey of more than 50 waste management workers and in-depth interviews with the associated stakeholders in the field of waste management such as municipal officials, health experts etc. The study reveals that majority of the workers lacks personal protective equipment, which leads to respiratory illness, skin infections and other disorders, they lack proper training and also no social security and hence, this study highlights the deficiencies which are included in the practices of waste management of city and associated plight of waste management workers, The paper further recommends measures to strengthen the condition of these waste management workers such as regular health monitoring, ensuring protective devices to them etc to promote sustainable waste management practices. These measures can contribute to the welfare of the waste management workers and will help to improve their living conditions.

I. INTRODUCTION

With the growth of population and its associated factors such as industrial growth, increasing urbanization etc have significantly contributed in the generation of huge amount of municipal solid waste in India. Effective waste management has become a crucial challenge to tackle this increasing urban waste in the Indian cities. Waste management workers play a crucial role in all stages of solid waste management, whether it is collection, transportation, segregation, treatment, or final disposal. They are these waste management workers who collects waste from households, commercial establishments, industries, etc and transport this waste to the respective sites and help in its proper disposal. They clean the roads, the nalas and all the respective public areas of the cities, hence we can say that the whole system of waste management depends on these waste management workers, But despite their indispensable role in the maintenance of waste management of the city, these waste management workers faces several issues in their working conditions, They are exposed to dust, smoke, toxic substances and different types of hazardous waste materials, which lead to various health complications among the workers. Also, insufficient trainings and lack of awareness regarding their occupational safety increased their vulnerability further.

Kota city is situated in Rajasthan State of India, this city has been recently emerged as a major educational and industrial centre in the state and all over India, attracting a large number of students from all over India and migrants for various economic opportunities, which contribute significantly in the generation of huge amount of waste in the city and Maintenance of this waste depends on the waste management workers of the city and hence this research paper helps us to examine the working conditions of the waste management workers of the city and assess their contribution to the maintaining environmental sustainability and public health of the city and their associated impacts on their lives and to provide recommendations for improving their working conditions which will also help in strengthening the urban waste management system of the city.

II. RESEARCH OBJECTIVES

1. To evaluate the working conditions of waste management workers in Kota city.
2. To identify challenges faced by waste management workers of Kota city.
3. To evaluate impacts of improper waste management activities on workers associated with waste management.
4. To suggest measures to improve the living conditions of waste management workers in the city.

III. RESEARCH HYPOTHESIS

1. There exists a positive relationship between increasing availability of personal protective equipment (PPE) and improving health status of waste management workers in the city.
2. There exists a strong relationship between occupational exposure of waste management workers and the prevalence of diseases in them such as respiratory, other disorders and skin diseases.
3. Improvement in the working conditions of waste management workers will have positive effect in reducing health risk in waste management workers.

IV. LITERATURE REVIEW

There are several studies which were conducted across India which have constantly highlighted the vulnerabilities in the occupation of waste management workers. These various studies highlights that waste management workers are frequently exposed to various types of physical, chemical, biological and other hazardous issues associated with waste. Further, Central Pollution Control Board has reported that inadequate waste management practices such as inadequate waste segregation and improper handling of waste increase health risks in waste management workers. There were studies which were conducted in the metropolitan cities such as Bangalore, Jaipur, Mumbai, Delhi, etc. have revealed the high incidences of various types of issues these waste management workers face such as skin infections, respiratory diseases, different types of injuries due to inadequate safety measures.

Kaza et al. (2018): Improper waste management practices on the one hand degrades the quality of environment and on the other hand raise health concerns in the public, particularly in the developing countries.

Wilson, in 2015, also highlighted the importance of having an integrating waste worker welfare in municipal waste management system for achieving sustainability for the waste management workers.

However, in this regard, very limited research has been conducted, specially on the medium-sized cities such as that of Kota. Many studies regarding waste management only concentrate on the waste management practices and waste management aspects such as waste generation and waste disposable practices, but about the socio-economic condition, occupational conditions, and the health conditions of waste management workers still remain largely understudied. Therefore, this research addresses an important gap providing a comprehensive analysis of these conditions of waste management workers specially in regarding of medium-sized cities like Kota.

V. RESEARCH METHODOLOGY

Study Area: Kota is a historic city located on the southeast Rajasthan on the banks of river Chambal. As per census 2011, the population of Kota city was 19,51,001. The city is now recognized as a major educational hub and a major industrial centre as well. And hence, it experienced a rapid urban expansion and population growth in the recent years. With the increase in demand for its growing population, the waste generation of the city has been also increased significantly with time.

Research Design: To gain a comprehensive understanding of a worker experience and their working conditions, both qualitative and quantitative techniques have been used to enhance the study approach and hence this study adopts a mixed method approach.

Sampling Methods: For the study of this paper, sample of about more than 50 waste management workers were taken through purposive sampling method from various parts of the city. Additionally, Interview have been conducted with

associates associated with the waste management of the city, including municipal officials, health professionals, and waste workers.

Data collection Method: Both primary and secondary data has been used for the study of the paper. Primary data included in-depth interviews, field observation, and structured questionnaires, where secondary data includes government reports, research articles, WHO and UNEP reports, municipal records, CPCB and SPCB publications, etc.

Data analysis Techniques: Both quantitative and qualitative analysis technique has been used for the analysis of data. Qualitative responses examined the thematic analysis technique, while quantitative data analysis were done using techniques such as percentage and frequency distribution .

VI. RESULTS AND DISCUSSIONS

6.1 Socio-Economic Profile of Workers: Majority of the waste management workers working regarding different aspects of waste management such as its collection, its transportation and processing belongs to weaker section of society of city, Most of these workers reportedly having low monthly income. These respondents also have limited access to the social and economic benefits.

These waste management workers have low salary and almost no financial security. Also, most of the waste management workers engaged in the city are engaged on contractual basis, which provides them no job security. The workers also face social and psychological issues such as social discrimination and community perception. Also, these waste management workers have no welfare and social security benefits such as health insurance, pension facilities, provident fund, and paid leaves. The working conditions of these waste management workers are also not suitable as they have no proper availability of drinking water, toilet, and rest facilities at the place of their work. These waste management workers also face gender-related issues, especially by the female workers, The female workers often face the issue of workplace safety, Also, the waste management workers of the city have limited access to health care facilities such as health checkups, vaccination, and medical reimbursement facilities.



Figure 1 Major Socio-Economic Issues of Waste Management Workers

Safety Equipment	Workers receiving this equipment in %
Gloves	35
Face Mask	40
Safety Shoes	25
Reflective Jackets	20
PPE kits	26

The study indicates that approximately 75% of workers engaged in various waste management aspects of city lacks necessary protective equipment such as gloves, face masks, safety shoes, jackets, and PPE kit during their routine waste management operations, which indulge these waste management workers into various health-related issues.

6.2 Occupational Health Issues

Health Issues	Percentage %
Respiratory Problems	62
Musculoskeletal Disorders	57
Skin Infection	48
Eye Irritation	39
Frequent Injuries	44

The major reasons behind these health issues in waste management workers are continuous exposure to dust, pathogens, sharp objects, and toxic substances without a proper masks, gloves, and PPE kits and all other necessary equipments, All these issues contribute significantly to these health conditions.

6.3 Training and Awareness Among Waste Management Workers: As per the study, only a small proportion of waste management workers reported receiving formal training regarding the waste handling procedures, its occupational safety aspects, and emergency response mechanism. Also, lack of awareness in these workers such as the right to use personal protective equipment such as a mask, helmet, boots, gloves, and other protective clothing during their working hours of cleaning, safety training, mechanical cleaning of equipment instead of working on it manually, and emergency rescue arrangements during their operations regarding sewer and septic tanks. Also, persons identified as manual scavengers are entitled to rehabilitations, measures which include one-time cash assistance, alternative livelihood opportunities, educational support for their children, and access to the housing and other welfare schemes for them. The Supreme Court of India has also directed that the families of those workers who die by cleaning sewers and septic tanks are entitled for the compensation.also safai karamcharis employed by municipalities or any private agencies or contractors are entitled for minimum wages and timely payment of these wages, social security benefits, and protection against occupational labour laws all this further increases occupational risk in the workers and they often remain excluded from accessing their legal and social entitlements.

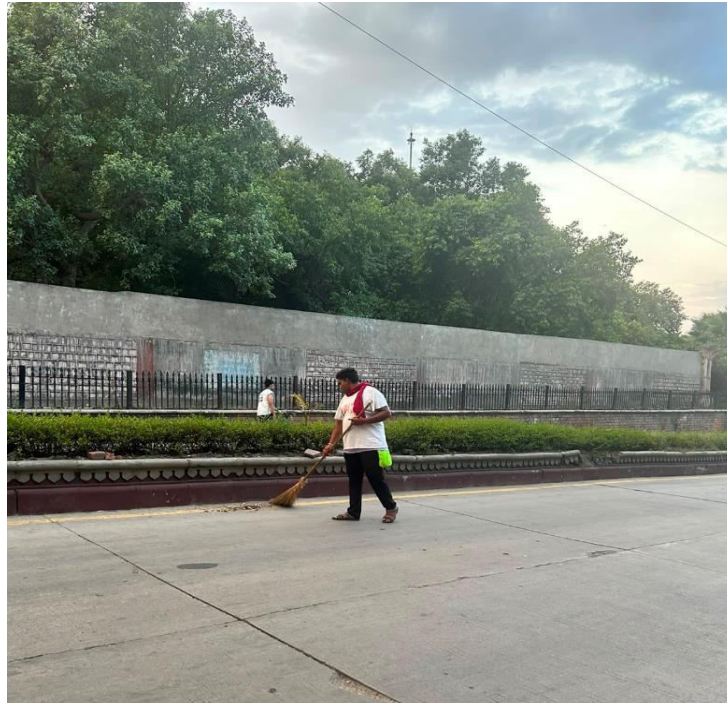


Figure 2 Worker observed without necessary PPE and Safety Devices at Antaghar Circle, Kota.

6.4 Public Health and Environmental Implications: Detailed interview revealed that improper waste disposal practices in open areas, dumping sites, and other improper waste activities such as occasional waste burning and improper segregation practices of waste contribute to various types of pollution such as soil contamination, water pollution, air pollution, and various types of public health risks and hence disease transmissions. These waste management workers play a critical role in mitigating these effects by ensuring regular waste collection, its segregation, transportation and its proper disposal.

VII. DISCUSSIONS

The finding supports hypothesis that inadequate safety measures such as lack of face masks, PPE kits, etc. adversely affect the health of waste management workers and their well-being. Also, lack of PPE kits, limited health monitoring and inadequate formal training expose these workers to multiple occupational hazards regarding waste management structure. Also, these waste management workers have limited social and economic security. The study further demonstrated the interrelationship which exists between worker welfare and environmental sustainability. And hence, improving working conditions can at one hand will help to enhance operational efficiency, worker productivity and in strengthening of municipal waste management system and on the other hand it can help to maintaining of environment sustainability as well.

VIII. RECOMMENDATIONS

1. Occupational safety: Municipal Authorities should provide complete safety measures to all the workers engaged in waste management activities and also there should be mandatory use of these protective measures, such as gloves, masks, and safety shoes, PPE kits etc And also there should be regular safety audits and inspections regarding these safety measures.

2. Health and welfare: There should be periodic health check-ups of these waste management workers and there should be vaccination programs, particularly arranged for these waste management workers with this these waste management workers should be provided with the health insurance coverage to provide them social and economic security. And also

these waste management workers should have a proper access to sanitation and drinking water facilities regarding their place of work.

3. Capacity building.: Regular training to these waste management workers should be provided regarding proper waste management aspects such as segregation of waste, and handling of waste well. There should be awareness programs which should be arranged for these waste management workers on occupational health and safety. Also, there should be skill development initiatives particularly should be arranged for these waste management workers.

4. Waste management improvement: There should be waste management system improvement programs that should be run by municipal authorities that will help waste management workers in reducing their burden, such as segregation of waste at source only, scientific waste treatment and disposable techniques, expansion of composting and recycling facilities, and multiple community awareness campaigns should also be organised.

5. Policy measures: There should be stricter implementation of solid waste management rules of 2016. Municipal authorities should improve the monitoring system of waste management also there should be inclusion of worker welfare indicators in waste management planning system.

Paper6. Generate Awareness in them about their Legal Rights:

Right	Legal Basis
Dignity and safe life	Article 21
Equality and non-discrimination	Articles 14,15 and 17
Freedom from manual scavenging	PEMSR Act 2013
PPE and Safety equipment	PEMSR Act 2013
Alternative livelihood and Rehabilitation	PEMSR Act 2013
Compensation for Sewer Death	Directions of the Supreme Court
Complaint Redressal	National/State Safai Karamchari Commission

IX. CONCLUSION

Hence, it can be said that waste management workers constitute an indispensable part of urban waste management system. The study reveals that waste management workers in Kota city faces considerable occupational-related hazards due to inadequate safety measures such as lack of face masks to PPE kits, gloves, etc. They have limited training opportunities and an insufficient health protection system. A substantial portion of these waste management workers in the city experience health issues such as respiratory diseases, dermatological and musculoskeletal health problems, which is associated with their occupation. And hence, the findings suggest that improving occupational safety, ensuring their healthcare access, and proper formal training programs are essential for safeguarding these workers. Furthermore, it is important to further strengthen waste management system regarding its various aspects such as waste segregation, scientific disposal methods, and public participation, which will significantly enhance the quality of environment on one hand but also will help to reduce the burden of these waste management workers. And hence, Kota city requires a sustainable waste management approach, which requires waste management workers as the key stakeholders in the development of city and its environment sustainability.

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