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# Morbidity Profile of Sanitary Workers in Kancheepuram District, Tamilnadu: A Cross Sectional Study

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## ABSTRACT

*The aim is to study the morbidity profile and factors influencing them among sanitary workers of Kancheepuram district. This study has given insights into the working conditions of sanitary workers, their health problems and associated risk factors. A new emphasis has been laid on training of sanitary workers before placing them into the job and making provisions for the health care of these people.*

**Key words:** Diseases, Morbidity, Sanitary workers

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## INTRODUCTION

The break of 19th century saw arguably one of the greatest evolutions in public health – "The Great Sanitary Awakening". This was the direct consequence of the realization that filth is the basis for production and proliferation of disease. This steered the society into embracing cleanliness. Sanitation amended people's outlook about health and disease and changed the society's stance about every person's health as a social obligation. With sanitation, achieving societal health became a collective societal aspiration [1]. Besides having a very pronounced public health dimension sanitation is also discernibly related to human rights and dignity [2]. Sanitation technologies confer protection of humans from harmful pathogens and chemicals and acts as an instrument to improve public health [3]. A systematic review suggested that sanitary neighborhood conditions and household conditions are both associated with reduced diarrheal burden [4]. Lack of sanitation is understood to be the cause of 10% of the total morbidity. Pre- placement examination in sanitary workers, ideally, can help in reducing at least little morbidity, if not all. But in the existing circumstances pre-placement examination in sanitary workers is considered almost too bizarre to be a reality [5]. A study done in Tamil Nadu revealed that only 62% of them used at least 1 personal protected equipment [6].At this point it is abundantly clear that the health of sanitary workers is expected to be subnormal and sometimes worse owing to their occupation. Hence, this study was carried out with a view to look into the health issues in this historically neglected group and adds to the slowly multiplying literature dealing with their health issues.

## MATERIALS AND METHODS

### Study design

Community based descriptive cross – sectional study

### Study area

This study was conducted in the Pallavaram and Tambaram municipalities of Kancheepuram district, Tamil Nadu. Based on the current data 334 sanitary workers were employed in Pallavaram municipality and 135 sanitary workers were employed in Tambaram municipality.

### Sample size

There are a total of 324 sanitary workers employed under Pallavaram Municipality and 119 sanitary workers employed under Tambaram municipality. Out of the total 443 sanitary workers, 420 sanitary workers were present and were willing to participate in the study. Hence a total of 420 sanitary workers involved in various types of sanitary work were enrolled in the study after applying the inclusion and exclusion criteria.

### Inclusion criteria

Sanitary workers working in Pallavaram and Tambaram

municipalities working in the same profession for at least a year were included

Sanitary workers who gave consent to participate in the study were included.

**Exclusion criteria**

Those who didn't give consent to participate in the study were excluded.

Sanitary workers with working experience < 1 year were also excluded.

## RESULTS

The mean of age of participants enrolled in this study is 38±7.2 years. Out of the 420 sanitary workers who participated in the current study, about 43.8% belonged to the age group of 41-60 years of age and 39.4% belonged to the age group of 20-40 years of age. Nearly 56.8% were males and the remaining 43.2% were females (Table 1).

The odds of a person being affected with any type of non-communicable disease increases around 4 fold in case of migrant workers (OR= 4.79, P value = 0.000). Non communicable diseases are more common among workers who are reported to be working for ≥ 5 days per week (OR= 3.69, P value= 0.0001). The odds of a person being affected with any type of non - communicable disease increases around 4 fold in case of migrant workers (OR= 4.79, P value = 0.000). Non communicable diseases are more common among workers who are reported to be working for ≥ 5 days per week (OR= 3.69, P value= 0.0001) (Table 2).

**Table 1: Association between non communicable diseases and selected variables in sanitary workers.**

| | Character | Total frequency | Non communicable disease | | | | |
|---|---|---|---|---|---|---|---|
| | | | Yes (207) | No (213) | p value | Odds ratio | 95% CI |
| Migration for work | Yes | 115 | 87 | 28 | 0 | 4.79 | 2.95 -7.77 |
| | No | 305 | 120 | 185 | | | |
| Duration of work | >10years | 206 | 109 | 105 | 0.49 | 1.14 | 0.77 - 1.67 |
| | ≤ 10years | 214 | 98 | 108 | | | |
| No of days of work per week | >5 | 160 | 110 | 50 | 0.0001* | 3.69 | 2.43 - 5.61 |
| | ≤5 | 260 | 97 | 163 | | | |
| Usage of PPE | Yes | 118 | 69 | 59 | 0.215 | 1.3 | 0.86 -1.97 |
| | No | 302 | 138 | 154 | | | |
| Washing hands | Yes | 267 | 126 | 141 | 0.25 | 0.79 | 0.53 - 1.18 |
| | No | 153 | 81 | 72 | | | |
| Eating at workplace | Yes | 114 | 63 | 51 | 0.135 | 1.38 | 0.90 - 2.15 |
| | No | 306 | 144s | 162 | | | |
| Changing clothes after work | Yes | 325 | 164 | 161 | 0.373 | 1.23 | 0.77 - 1.94 |
| | No | 95 | 1.243 | 52 | | | |
| Age | > 40years | 255 | 149 | 106 | 0.0001* | 2.59 | 1.79 - 3.88 |
| | ≤ 40years | 165 | 58 | 107 | | | |
| Sex | Male | 239 | 178 | 61 | 0.0001* | 15.29 | 9.34 - 25.02 |
| | Female | 181 | 29 | 152 | | | |

**Table 2: Association of different diseases with type of work of sanitary workers.**

| Type of Work | Total Frequency | Non-communicable Diseases | | P value | χ2 |
|---|---|---|---|---|---|
| | | Number (N=203) | Prevalence (%) | | |
| Sewage Workers | 160 | 71 | 44.375 | | |
| Solid waste handlers | 99 | 54 | 54.54 | | |
| Sweepers and cleaners | 105 | 49 | 46.66 | 0.24 | 5.23 |
| Toilet cleaners | 31 | 19 | 60.29 | | |
| Garbage truck drivers | 25 | 10 | 40 | | |
| **Type of Work** | **Total Frequency** | **Ocular Problems** | | **P value** | **χ2** |
| | | **Number (N=198)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 97 | 60.62 | | |
| Solid waste handlers | 99 | 40 | 40.4 | | |
| Sweepers and cleaners | 105 | 38 | 36.19 | 0.0005 | 19.82 |
| Toilet cleaners | 31 | 14 | 45.16 | | |
| Garbage truck drivers | 25 | 9 | 36 | | |
| **Type of Work** | **Total Frequency** | **Oral Cavity Problems** | | **P value** | **χ2** |
| | | **Number (N=107)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 32 | 20 | | |
| Solid waste handlers | 99 | 29 | 29.29 | 0.35 | 4.42 |
| Sweepers and cleaners | 105 | 31 | 29.52 | | |

| | | | | | |
|---|---|---|---|---|---|
| Toilet cleaners | 31 | 9 | 29.03 | | |
| Garbage truck drivers | 25 | 6 | 24 | | |
| **Type of Work** | **Total Frequency** | **ENT Problems** | | **P value** | **χ2** |
| | | **Number (N=83)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 31 | 19.37 | | |
| Solid waste handlers | 99 | 19 | 19.19 | | |
| Sweepers and cleaners | 105 | 21 | 20 | 0.971 | 0.97 |
| Toilet cleaners | 31 | 8 | 25.8 | | |
| Garbage truck drivers | 25 | 4 | 16 | | |
| **Type of Work** | **Total Frequency** | **Respiratory Problems** | | **P value** | **χ2** |
| | | **Number (N=120)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 64 | 40 | | |
| Solid waste handlers | 99 | 25 | 25.25 | | |
| Sweepers and cleaners | 105 | 24 | 22.85 | 0.0006 | 19.55 |
| Toilet cleaners | 31 | 4 | 12.9 | | |
| Garbage truck drivers | 25 | 3 | 12 | | |
| **Type of Work** | **Total Frequency** | **Gastrointestinal Problems** | | **P value** | **χ2** |
| | | **Number (N=70)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 21 | 13.12 | | |
| Solid waste handlers | 99 | 14 | 14.14 | | |
| Sweepers and cleaners | 105 | 12 | 11.42 | 0.00001 | 28.03 |
| Toilet cleaners | 31 | 13 | 41.93 | | |
| Garbage truck drivers | 25 | 10 | 40 | | |
| **Type of Work** | **Total Frequency** | **Genitourinary Problems** | | **P value** | **χ2** |
| | | **Number (N=87)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 41 | 25.62 | | |
| Solid waste handlers | 99 | 10 | 10.1 | | |
| Sweepers and cleaners | 105 | 12 | 11.42 | 0 | 32.66 |
| Toilet cleaners | 31 | 15 | 48.38 | | |
| Garbage truck drivers | 25 | 9 | 36 | | |
| **Type of Work** | **Total Frequency** | **Musculoskeletal Problems** | | **P value** | **χ2** |
| | | **Number (N=244)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 98 | 61.25 | | |
| Solid waste handlers | 99 | 52 | 52.52 | | |
| Sweepers and cleaners | 105 | 60 | 57.14 | 0.71 | 2.12 |
| Toilet cleaners | 31 | 19 | 61.29 | | |
| Garbage truck drivers | 25 | 15 | 60 | | |
| **Type of Work** | **Total Frequency** | **Skin Problems** | | **P value** | **χ2** |
| | | **Number (N=97)** | **Prevalence (%)** | | |
| Sewage Workers | 160 | 46 | 28.75 | | |
| Solid waste handlers | 99 | 19 | 19.19 | | |
| Sweepers and cleaners | 105 | 21 | 20 | 0.32 | 4.67 |
| Toilet cleaners | 31 | 6 | 19.35 | | |
| Garbage truck drivers | 25 | 5 | 20 | | |

## DISCUSSION

In our study the mean age was 38±8.2 years. Majority of the sanitary workers 43.8% belonged to 41 -60 years of age and 39.4% belonged to 20 -40 years of age. Male preponderance was seen in our study, nearly 56.8% were males and the remaining 43.2% were females. Although communicable diseases remain one of the biggest impediments to the health development, non-communicable diseases are emerging as a huge contributor to morbidity and mortality in India [7]. About 22.5% of the sanitary workers were hypertensive and among them 73.4% were known hypertensive and the remaining 26.6% were newly diagnosed hypertensive. 20% were known cases of diabetes mellitus 4.28% of them suffered from cardiovascular diseases and 1.4% had cancer.

Most of the study participants had multiple problems, of which the most common morbidity found among 420 sanitary workers were Musculoskeletal problem (58.09%), followed by NCD's (48.33%), ocular problems (47.14%), respiratory problems (28.57), oral problems(25.47%), skin problem (23.09%), gastrointestinal problems (16.66%), and injuries (28.80%).Whereas in a previous study, Greater zone of Chennai corporation, Tamilnadu 82.2% had musculoskeletal problems, 61.6% had respiratory problems, 53.4% had ocular problems 17.8% had NCD's like DM/ HTN/ CVD, 38.4% had skin problems and 11%had Injuries Higher prevalence of musculoskeletal in the later study can be attributed to the use of outdated

and damaged brooms as well as working posture. Similarly increase in the respiratory problems among the later workers in spite of being nonsmokers may be due to the dust raised during sweeping and lack of mask usage among them [8]. About 92.5% of the solid waste collectors reported musculoskeletal problem in a previous study done in Iran [9].

## CONCLUSION

This study assessed the morbidity profile, personal habits, use of personal protective equipment health seeking behavior and other associated factors. As far as other systemic diseases were concerned, 47.1% of them had ocular problems, 25.4% had problems with the oral cavity, 19.7% of them had ENT problems, 28.6% had respiratory problems, 16.7% of them had gastrointestinal problems, 20.7% of them had genitourinary problems, 58.2% of them suffered from musculoskeletal problems, 23.1% of them suffered from skin problems and 28.8% of them had injuries of some kind in the past 3 months. 68.9% of the sanitary workers preferred allopathy medicine and 56.3% relied on government sector for their health care needs. It can be safely concluded that morbidity of various diseases are slightly higher than the general population and the commonest contributing factors are handling sewage, non - usage of personal protective equipment and work related factors like work experience etc.

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