AN EXPLORATIVE STUDY ON THE CHALLENGES OF SANITARY WORKERS

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CHAPTER I

INTRODUCTION AND CONCEPTUAL FRAMEWORK

1.1 INTRODUCTION

Since independence, the country has made remarkable progress in various fields; the Green Revolution, White Revolution, Blue Revolution and the Information Technology Revolution which have significantly improved the economic conditions of many sections of the population (Pongratz et al., 2008). One community that has largely remained unaffected by this notable progress is the community of municipal sanitary workers (Safai Karamcharis). Totally cut-off from the mainstream of progress and immersed in ignorance and poverty, they are still subjected to the worst kind of oppression, discrimination and indignity and they are still treated as the lowliest of all (World Health Organization, 2018).

1.2 SANITATION AND SANITARY WORKERS

As per the 74th Constitutional Amendment Act, public health, sanitation, conservancy and solid waste management is one of the core functions of the urban local bodies. Sanitation is defined as safe management of human excreta, including its safe confinement, treatment, disposal and associated hygiene related practices (Government of India, 1992). Sanitation falls under the preventive type of public health. It is also another monopoly function to be undertaken by the municipality. Sanitation includes removal of rubbish, sludge, night soil and dead animal's bodies, drainage and sweeping (Desimone, 2009). An improvement in general sanitation in the inhabited areas of the cities and towns is quite necessary since the atmosphere of living is a matter of controlling the preventable ill health (World Health Organization, 2018).

The sanitary workers are responsible for keeping the environment clean and contribute to the economic development of the country, though they are the most neglected one in the eyes of the civilized society. They are at the lowest rank when it comes to income, education, health, sanitation and other parameters of Human Development Index (Kenney, 2018). At a time when growth is taking place in every sector, there are several communities which are left far behind and are living in the most deplorable inhuman conditions of economic backwardness and social discrimination which especially includes the sanitary workers (Srivastava, 1997).

It is viewed as a much-needed social justice measure to ameliorate an abysmal living and working conditions of sanitation workers who occupy the bottom of the complex class and caste hierarchy in India (Government of India, 2014). There is also a greater need for mechanization, modernization and extension of sanitation infrastructure in order to ensure that the very condition of possibility of the deployment of manual labour in such degrading and inhuman activities is eradicated (Wong, 2017). But the mere banning of these occupations or increased mechanization cannot become solutions to the problem. The problem of the deployment of formerly untouchable caste into menial jobs is, a long standing problem rooted in a history of social and economic discrimination (Shyamlal. 1992).

1.3 SEWERAGE SYSTEM IN INDIA

In Indian cities, the underground sewerage system was introduced by the British in the late 19^{th} century as a public health and sanitation measure (Desimone, 2009). The purpose was to inscribe in space the civilizing mission of colonial modernity. Nationalist planners in independent India pushed technological modernization of urban space

as a vehicle of social modernization, a vision that entailed dismantling caste hierarchies that tied lower caste status to socially marginal and stigmatized occupations (Prashad, 2000). Thus, the underground sewerage system was seen as a form of infrastructural improvement that would liberate the sanitary workers who are traditionally dealing with the manual handling of human excreta, from the indignity and dangers of manual scavenging (Beswada, 2017). From the beginning, the negation of the promise of improvement was lodged right at the heart of the modernization project as city municipalities simply swelled the newly created labour process of sewage cleaning with sanitary workers thereby reproducing the historical relationship between marginalized people and marginalized occupations within the modern sewerage system (Prashad, 2000).

The sewerage system in its very design therefore presupposed the availability of cheap and devalued labour of lower-caste workers. In fact, it can be claimed that even on its own terms, *i.e.* improving public health, the sewerage system has significantly worsened the physical vulnerability and ill- health of lower caste sanitary workers (Ministry of Social Justice and Empowerment, 2020). The precariousness of sewage work is evident in the deaths of thousands of sanitary workers every year from accidents or debilitating ailments such as leptospirosis, viral hepatitis and typhoid (Human Rights Watch, 2014). This is due to sudden or sustained exposure to noxious gases like methane, hydrogen sulphide, carbon dioxide and carbon monoxide while manually unclogging and cleaning sewers in Indian cities (Ramaswamy, 2018). It would be naive to believe that further modernization of sewerage system would relieve sewage workers from the curse of ill-health and death or make a dent into deep-rooted caste hierarchies.

There are Government funded mass programmes targeted at improving access to sanitation, but largely focused on rural areas, like the Total Sanitation Campaign launched in 1999 and the Nirmal Gram Puraskar 2005 (UNICEF & WHO, 2015). On the other hand, the rapidly urbanizing cities suffering from an acute shortage of water and sanitation, cities which have not seen as many targeted programmes in spite of the evident need. In these cities, policies have been non-inclusive and have led to the marginalization of impoverished residents (Anand, 2007).

Like other sectors in post-liberalization India, sewer cleaning, construction and maintenance of sewage treatment plants and sanitation work are being privatized in many cities and towns (International Labour Organization, 2017). Whether contractors offer a minimum wage or implement even the prescribed safety norms is not monitored. An estimated 1.3 million sanitary workers in India eke out a living through the most degrading practice of manual scavenging, an occupation which involves cleaning open toilets and dry latrines and carrying human excreta with bare hands (Roychowdhury and Shrivastava, 1995). These workers are often employed in the maintenance of sewer systems, sweeping of roads and collection of garbage. Apart from being employed to clean toilets in individual households, they are also engaged in cleaning community dry latrines, roadside open toilets, railway stations, government hospitals and other public places (Human Rights Watch, 2014). In spite of a strong provision like the "The Employment of Manual Scavenging and Construction of Dry Latrines (Prohibition) Act, 1993, which prohibits manual scavenging, the practice is widespread in India and the task of eradicating it has not been easy (Roychowdhury and Shrivastava,

1995).

Even recently, the Supreme Court of India (2014) directed the State Governments to implement the law abolishing the manual scavengers and to take steps for their rehabilitation. The court noted that for sewer deaths, entering sewer lines without safety gear should be made a crime even in emergency situations (Ministry of Drinking Water and Sanitation, 2011).

1.4 OCCUPATIONAL HEALTH HAZARDS OF SANITARY WORKERS

The sewer contains many toxic gases and poisonous substances. The sewer gas is a complex mixture of toxic gases that contain methane, carbon dioxide, sulfur dioxide and nitrous oxides (Centre for Science and Environment, 2017). Besides, the sewer also contains chlorine bleaches, household waste, human excreta and industrial wastes. The sewerage workers or manhole workers are at high risk when they are exposed to dangerous gases for a prolonged time (Bigon, 2005). They are not with any safety equipment to protect them from dangerous gases and other toxic wastes.

Several manhole workers have died as soon as they went down into the sewer, and their dead bodies had to be pulled out. Over the last three decades alone, several hundred manhole workers have died dueto gas poisoning (Human Rights Watch, 2014). They often fall prey to occupational hazards like exposure to harmful gases, drowning, muscular-skeletal disorders, serious skin infections, respiratory disorders and cardiovascular ailments (Nethercott and Holness, 1988).

1.5 SANITARY WORKERS IN INDIA

The history of sanitary workers in India is deeply intertwined with the country's social, cultural, and economic fabric (National Human Rights

Commission, 2019). These workers, also known as conservancy workers, play a crucial role in maintaining public hygiene and sanitation. Their journey has been marked by discrimination, exploitation and social marginalization (Health, Safety and Dignity of Sanitation Workers, 2019). The concept of sanitation and cleanliness has been an integral part of Indian civilization for centuries. Ancient texts and scriptures emphasize the importance of cleanliness and hygiene. However, the practice of engaging specific groups of individuals for menial sanitation tasks emerged during the colonial era. During British colonial rule, the sanitation system underwent significant changes, leading to the formalization of sanitary work (Planning Commission, 2012). The introduction of modern urban planning and the need to maintain cleanliness in cities resulted in the employment of a dedicated workforce for sanitation tasks (Bigon, 2005). The workforce was mainly comprised of lower-caste individuals often from marginalized communities.

Sanitary workers were subjected to systemic exploitation and discrimination, both during the colonial era and even after India's independence (Anand, 2020). They faced social stigma, were denied basic human rights, and were excluded from mainstream society. The prevalent caste-based discrimination further compounded their marginalization, as most sanitary workers came from Scheduled Caste i.e., lower-caste communities (National Campaign for Dalit Human Rights, 207). Over the years, sanitary workers have organized and fought for their rights and dignity (Saldanha et al., 2022). They have formed unions, staged protests and raised their voices against the deplorable working conditions and societal prejudices they faced. These struggles have played a significant role in drawing attention to their plight and bringing about gradual changes.

Recognizing the need for addressing the issues faced by sanitary workers, the Indian government has implemented various initiatives and reforms (Dubey & Murphy, 2020). The launch of programs like the Self-Employment Scheme for Rehabilitation of Manual Scavengers and the Swachh Bharat Abhiyan (Clean India Campaign) aims to eradicate manual scavenging, improve sanitation infrastructure and provide alternative livelihood options for affected workers (Beswada Wilson, 2017). The legal framework has played a pivotal role in safeguarding the rights of sanitary workers. Laws; the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 aim to eradicate manual scavenging and provide rehabilitation and support for affected workers (Government of India, 2013). The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 provides legal protection against discrimination and violence. Efforts have been made to improve the working conditions and social status of sanitary workers (Sharma & Singh, 2019). Mechanization of sanitation processes, introduction of protective gear and training programs to enhance kills and productivity have been undertaken. Awareness campaigns and educational initiatives seek to challenge social prejudices and promote dignity and respect for these workers.

The historical journey of sanitary workers in India reflects a struggle for dignity, equality and social justice. From enduring discrimination and exploitation to gradually gaining recognition and support, their journey has been marked by resilience and determination. While progress has been made, there is still a long way to go in completely eradicating manual scavenging, addressing deep-rooted prejudices, and providing equal opportunities for all (Dubey & Murphy, 2020). A comprehensive approach that combines legal reforms, social awareness, and economic empowerment

is crucial to uplift the lives of sanitary workers and create a society that values their contributions to public health and hygiene.

1.6 SOCIAL ENVIRONMENT FOR SANITATION PERSONNEL

The socioeconomic situation of sanitary workers in India is a multifaceted topic that covers a number of related subtopics. The following are some of the major key point:

1.6.1 Caste-based Prejudice

India has a complicated social structure. India's caste system which creates various social groups within society has existed for many years. Caste-based discrimination is still pervasive in Indian society even though it is prohibited by the Indian Constitution (Hans et al., 2021). The sanitation industry is one such area. Many sanitary workers in India are from Scheduled Castes which can lead to marginalization and social exclusion. In India, the sanitation industry is essential for maintaining general hygiene and health. Cleanup of public areas, sewage system upkeep and waste disposal are the responsibilities of sanitary employees. (Salve & Jungari, 2020). Sanitation employees in India frequently have subpar working conditions. Many employees in the sanitation industry are hired on a contract or casual basis which prevents them from receiving job perks like paid time off or health insurance. Many people are in stigmatized condition because of they are involving Sanitation dutiesas they called as “dirty” and undignified (Sharma & Singh, 2019).

Caste-based discrimination is one of the biggest problems sanitary workers in India have to deal with. Many of them are members of lower-caste groups who have historically faced prejudice and marginalization in Indian society. Sanitary workers frequently experience discrimination in their daily lives both at work and outside of work due to their caste (Bauer, 2010). They

might experience unfair treatment at work being allocated the most unpleasant or hazardous tasks, receiving insufficient protective equipment or being paid less than other employees doing the same or similar work. Sanitary workers frequently lack access to necessities like clean drinking water and restrooms which can make their jobs even more difficult (National Campaign for Dalit Human Rights, 207).

Sanitary employees may experience social exclusion and discrimination outside of the workplace. Due to their caste, they could be shunned from social gatherings or public areas or they might experience verbal or physical abuse at the hands of people of higher castes. Due to their caste, sanitary workers could also have restricted access to healthcare or education. (Bauer, 2010). Sanitary workers in India may suffer serious repercussions from caste-based prejudice. Poor working conditions, low pay and restricted access to employment benefits might result from it. Additionally, because they could feel marginalized and stigmatized due of their caste, it might be detrimental to the mental health of sanitation workers (Ziyauddin, 2022). Workers in the sanitation industry may be exposed to dangerous materials or substances without the proper safety equipment, which can have an impact on their physical health.

In India, initiatives have been made to reduce caste-based prejudice in the sanitation industry. The "Safai Karamchari Andolan" was started by the Indian government in 2013 to end the practice of manually cleaning human waste out of dry latrines (Anand, 2020). In 2013, the government also passed the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act which aims to outlaw manual scavenging while simultaneously offering rehabilitation and alternate means of support for

those who participate in it (Government of India, 2013).

1.6.2 Social Exclusion and Stigma

India frequently stigmatizes the sanitation related work. It is mostly perceived as a "dirty" or "undignified" career which can cause social marginalization and a lack of support for sanitary workers (Planning Commission, 2012). This stigma frequently stems from the notion that sanitation labour is unhygienic and unattractive which can harm sanitary workers' reputations in society. Sanitary professionals may experience discrimination in their daily life as a result of stereotype stereotype (Ministry of Social Justice and Empowerment, 2021). Due to their occupation, individuals can be shunned from social gatherings or public areas or they might endure verbal or physical abuse. Due to the stigma associated with their occupation, sanitation employees could have limited access to mainstream culture.

Stigma and social marginalization can have serious negative effects. Sanitation workers may experience a lack of social support and a sense of isolation from their neighbor communities which can be detrimental to their mental health (Ministry of Social Justice and Empowerment, 2021). They might also have financial crisis because they used to earn less than those in other professions andhave less prospects for promotion. In India, the stigma and social marginalization experienced by women in the sanitation industry present special difficulties (Anand, 2020). In the sanitation industry, women are frequently thought to be less competent than males, which might limit their possibilities for promotion. The sexual harassment and abuse that female sanitation workers may experience might make their workplace uncomfortable and lead to their social exclusion (Ministry of Social Justice and Empowerment, 2021).

Sanitary workers in India face numerous difficulties, including social vulnerabilities and stigma. Discrimination, social marginalization and a lack of supportfor workers are all consequences of society's unfavorable image of sanitation work (Anand, 2020). Improvements in working conditions and employment benefits for sanitary workers would have been made possible only by government and non-governmental organization efforts to address these issues. To combat prejudice and social isolation, however, more needs to be done in India's sanitation industry. To solve their problems, we can concentrate on the following areas;

1. Sanitary workers rarely do have access to education and training opportunities which can restrict their potential to obtain better employment prospects and develop their future abilities (Anand, 2020).

2. Limited job security and low pay of sanitary workers in India used totter poor experience in employment settings which can exacerbate social and economic problems (Anand, 2020).

3. Health and safety issues related with toxic waste and other environmental risks are in the sanitation industry in India (Anand, 2020).

4. Lack of access to healthcare of sanitary workers in India promotes a negative impact on their health and their ability to receive treatment (Anand, 2020).

5. Gender-based discrimination in the sanitation industry used to provide additional difficulties to women; harassment and discrimination based on biological identity (Anand, 2020).

6. Unfavorable working conditions of the sanitary workers in India creates more work related issues such as lengthy hours spent in challenging surroundings without access to essential amenities and supplies (Anand, 2020).

7. The condition of absence of social protection against sanitary workers in India promotes lack of access to social protection services and programmes; social security and pension plans (Anand, 2020).

8. Limited representation and voiceless condition of the sanitary workers sometimes have led to poor decision-making processes which can limit their ability to fight for their rights and gain access to better working conditions and social safeguards (Anand, 2020).

9. Improve the social and economic well-being of sanitary workers and to advance greater social justice and equality, it is crucial to recognize and address these concerns (Anand, 2020). Understanding above problems and reducing these issues is essential to improve the social and economic well-being of sanitary workers and promoting greater social justice.

1.6.3 Economic Condition of Sanitary Workers

Sanitary workers in India face numerous economic challenges that significantly impact their livelihoods. These challenges include low wages, lack of social security, limited employment opportunities, unsafe working conditions and quality of life (Ariffin et al., 2021). Addressing these issues is crucial to improving the economic conditions of these workers and ensuring their well-being. One of the key economic

challenges faced by sanitary workers is low wages. Many of these workers earn wages well below the minimum standards set by the government. The meager income they receive is often insufficient to meet their basic needs, leading to a cycle of poverty and financial vulnerability (Ariffin et al., 2021).

In addition to low wages, sanitary workers often lack social security benefits, further exacerbating their economic difficulties. These workers are often excluded from essential benefits such as health insurance, pension plans and access to easy loans (Murphy, 2020). Without proper social security measures, sanitary workers face increased vulnerability during times of illness, old age or financial crises. Implementing social security schemes specifically tailored to the needs of sanitary workers is crucial for providing them with financial stability and protection. Another significant challenge is the limited employment opportunities available to sanitary workers (Protecting People and Economies, 2020).

Sanitation work in India is largely informal and temporary, depriving workers of stable employment. The absence of proper job contracts and benefits denies them job security and hampers their ability to plan for the future. Unsafe working conditions pose a considerable threat to the economic well-being of sanitary workers (Anand, 2020). These workers are exposed to hazardous environments, including harmful chemicals, waste-related diseases and the risk of accidents. Due to the lack of proper protective gear and safety measures, their health and well-being are at risk (Ariffin et al., 2021).

Skill development and career advancement opportunities can significantly improve the economic status of sanitary workers. Providing vocational training programs and supporting their transition into

alternative job sectors can broaden their employment prospects and enhances their earning potential (Bangladesh Gender Equality Diagnostic of Selected Sectors, 2017). By investing in their skill development, sanitary workers can have access to better-paying jobs ensuring a more sustainable livelihood.

1.6.4 The Health Condition of Sanitary Worker

In India, sanitary workers are essential to preserving public health and sanitation. The health risks they are exposed to due to their profession compromise both their physical and emotional wellbeing (Ziyauddin, 2022). Because of the nature of their jobs, they also confront a variety of physical and occupational health risks. These can include being exposed to potentially harmful substances like chemicals and sharp items as well as the possibility of getting hurt while doing heavy lifting or in a car accident (Kumar, 2018). Additionally, sanitation workers may experience extended working hours, low pay and unfavorable working conditions (Jain, 2017) all of which worsen their health.

1.6.5 Occupational Hazards

Sanitary workers are exposed to a variety of workplace risks that have a serious impact on their health. These dangers include coming into contact with harmful chemicals used in homes and industries, which can cause skin irritation, breathing issues, and long-term health impacts (Singh et al., 2024). They run the danger of catching contagious illnesses like cholera, hepatitis, and gastroenteritis due to handling human waste and insufficient waste management procedures. Due to the availability of sharp materials and inappropriate waste handling practices, physical injuries; cuts and strains are frequently experienced (Sharma, 2021). Breathing difficulties might arise from working in places with poor air quality and accidents and falls present additional dangers. Personal

Protective Equipment training and awareness programmes, improved waste management systems, sufficient sanitation facilities, frequent health check-ups and enforcement of safety procedures are all required to minimize these risks (Kumar, 2024). These initiatives are essential for ensuring the safety of sanitary workers on the job and for safeguarding their health and well-being.

1.6.6 Communicable Diseases

Due to their frequent contact with waste products such human waste and medical waste, the sanitary workers are more susceptible to communicable infections. Poor hygiene standards, inadequate waste management methods and inadequate sanitation facilities all increase the risk of infection spread. Therefore, there is a higher chance that sanitary employees will catch a disease. A major problem is the absence of proper sanitary facilities. Sanitary workers are forced to clean open defecation or filthy facilities because public restrooms are frequently unavailable or badly maintained in many regions in our Country. This raises the chance of contamination and exposes them to more disease- causing microorganisms. Ineffective waste management techniques make the issue worse. Waste is frequently disposed of carelessly which promotes the spread of infectious diseases. Poor medical waste segregation and disposal raise the danger of disease spread even more. Sanitary workers are more likely to be exposed to infectious pathogens when handling such trash without the required protective equipment.

Sanitary workers and the general public's poor awareness and adherence to cleanliness practices contribute to the incidence of infectious diseases. Due to the lack of access to clean water and sanitary facilities, hand washing with soap, a straightforward yet effective preventive practice, is frequently disregarded. In order to reduce the problem of

communicable diseases, it is crucial to improve the sanitation system. Both for the benefit of sanitary employees and the community they serve, accessible, well-maintained restrooms with suitable water and sanitation facilities should be offered. This can reduce the possibility of disease transfer to them. Enforcement of good waste management procedures is necessary. Reducing the spread of infectious agents requires waste segregation, correct handling and disposal of human waste, and safe handling and disposal of medical waste.

1.6.7 Musculo Skeletal Disorders

Sanitary workers in India are susceptible to developing musculoskeletal disorders due to the physically demanding nature of their work. These disorders are primarily caused by repetitive movements, heavy lifting and poor ergonomic practices. The prevalence of musculoskeletal disorders among sanitary workers can lead to discomfort, pain and reduced work productivity. The manual handling of heavy objects, waste bins and sacks, puts a strain on the musculoskeletal system, particularly the back, shoulders and joints. Constant lifting and carrying of heavy loads without proper lifting techniques can lead to chronic back pain, herniated discs and muscle strains. Repetitive movements involved in sweeping, mopping and scrubbing can result in overuse injuries for example carpal tunnel syndrome. The lack of ergonomic considerations in the design of sanitation tools and equipment further contributes to the risk of musculoskeletal disorders. Improperly designed equipment such as brooms and mops with non-ergonomic handles can place excessive stress on the joints and muscles, leading to repetitive strain injuries over time. The long working hours and high workload faced by sanitary workers also contribute to the development of musculoskeletal disorders. Fatigue and insufficient rest periods can

further exacerbate the risk of injury and strain on the body.

To address the issue of musculoskeletal disorders among sanitary workers, the implementation proper training programs on lifting techniques and ergonomic practices is essential. They may be educated on how to lift heavy objects safely, maintain proper posture and use equipment correctly to minimize the risk of injury. Periodical health check-ups should be implemented to monitor the musculoskeletal health of sanitary workers. Early detection of musculoskeletal issues can lead to timely intervention such as physiotherapy and rehabilitation, which can prevent the progression of disorders and alleviate pain.

1.6.8 Mental Health Issues

Mental health issues among sanitary workers are a pressing concern that requires attention and support. The nature of their work is coupled with social stigma and challenging working conditions that may have a significant impact on their psychological well-being. Sanitary workers often face stigma and discrimination due to the nature of their job, leading to feelings of shame and low self-esteem. The pressurizing work schedules, physical exertion, and exposure to unpleasant environments contribute to work- related stress, which can lead to burnout, anxiety disorders and even post-traumatic stress disorder. Witnessing distressing scenes and encountering hazardous situations can result in emotional trauma and distress (Schulte, 2006). Sanitary workers often lack access to adequate psychosocial support systems, and they may hesitate to seek help due to societal attitudes and limited support services. Financial challenges and inadequate wages add an additional layer of stress and anxiety among sanitary worker.

To deal with these mental health issues, raising awareness and

reducing stigma is crucial. Providing counseling services help lines, and support groups specifically personalized to the needs of sanitary workers can offer a safe space for discussing concerns and receiving emotional support. Training programs on stress management, coping mechanisms, and resilience can empower workers to handle work-related stressand traumatic incidents better. Ensuring fair wages, financial stability and fostering a supportive work environment are also important factors in promoting mental well-being. By prioritizing the mental health of sanitary workers and implementing these measures we can support their overall well-being.

1.6.9 Lack of Health Care Access

Sanitary workers are exposed to various occupational hazards, including exposure to toxic chemicals, sewage-related infections, physical injuries, respiratory problems and accidents. Prompt access to healthcare services is crucial for the early detection and management of these health issues. Many sanitary workers face barriers when seeking health care. Financial constraints play a significant role in limiting health care access. Sanitary workers who often earn low wages may struggle to afford medical expenses including doctor consultations, diagnostic tests and medications. The cost of health care can be prohibitive, especially for those without access to social security benefits or health insurance. The demanding nature of their work often leaves sanitary workers with limited time to seek health care. Many work long and irregular hours, making it challenging to schedule and attend medical appointments. This lack of flexibility can result in delayed or inadequate healthcare leading to the worsening of health conditions.

The absence of targeted healthcare services specifically designed for

the unique needs of sanitary workers further exacerbates the problem. These workers require access to healthcare providers who are knowledgeable about the occupational hazards. They face and can provide appropriate diagnosis, treatment and preventive care. Unfortunately the lack of specialized healthcare services tailored to their needs can impede their ability to receive proper medical attention.

To address the issue of healthcare access for sanitary workers ensuring affordable and accessible healthcare services is crucial. This can be achieved through the provision of comprehensive health insurance coverage or subsidized healthcare schemes specifically designed for sanitary workers. Mobile healthcare units or clinics can be deployed to reach remote or underserved areas, ensuring that sanitary workers have access to basic healthcare services. Flexible working hours and provision of paid sick leave can enable sanitary workers to seek timely medical attention without compromising their livelihood.

Creating awareness among sanitary workers about their entitlement to healthcare benefits and available services is vital. Information campaigns, targeted at this specific workforce can educate them about their rights and the avenues through which they can access healthcare services. The health conditions of sanitary workers in India require immediate attention and comprehensive solutions. Occupational hazards, communicable diseases, musculoskeletal disorders, mental health issues and limited healthcare access pose significant challenges to their well-being. By implementing strategies; improving sanitation infrastructure, promoting health education, ensuring regular health check-ups, enhancing healthcare accessibility, offering psychosocial support and implementing policy reforms, it is possible to improve the health conditions of sanitary

workers. Prioritizing their health and well-being will not only benefit the workers themselves but also contribute to the overall public health and sanitation standards.

1.6.10 Working Condition of Sanitary Workers

One of the primary challenges faced by sanitary workers is occupational hazards. They are exposed to a range of health risks, including handling hazardous waste materials, working in unsanitary environments, and exposure to toxic chemicals. These hazards can lead to various health problems. Another critical aspect of the working conditions is the physically demanding nature of their work. Sanitary workers often engage in manual labor, involving heavy lifting, pushing, and carrying of waste materials. The repetitive motions and constant exertion can lead to musculoskeletal disorders.

The long working hours and irregular schedules add to the hardships faced by sanitary workers. They often work in early mornings or late nights to ensure cleanliness in public spaces. These irregular shifts can disrupt their sleep patterns and lead to fatigue, which not only affects their physical health but also their mental well-being. The demanding workload combined with limited rest breaks can further contribute to stress, burnout and decreased productivity. Sanitary workers also encounter social and cultural challenges in their working conditions. They often face stigma and discrimination due to the nature of their job, which involves handling waste materials. The lack of social security benefits and job security adds to the vulnerability of sanitary workers. Many of them work as daily wage laborers or are employed on a contractual basis which leaves them without access to benefits such as health insurance, pension and paid leave and other monetary benefits.

1.7 THE ROLE OF LOCAL GOVERNMENT

Municipal Government in India is, to a great extent, a colonial legacy. Generally, it remained structurally unchanged until 1992 when the Lok Sabha passed the 74th Amendment to the Constitution which sought to make urban governments more participatory and accountable by reserving seats for women, scheduled castes and tribes and other backward classes. The consequence has been political neglect which has led to the institutional marginalization of municipal government and its financial and political dependence on state governments. This marginalization has been compounded by state governments as they have intruded into the functions expressly delegated to municipal authorities: public health and sanitation water supply and drainage, roads and public works and primary education by establishing single purpose institutions and urban development authorities (Datta, 2003).

The intervention by state governments in the municipal domain has also precipitated the dismissal of elected local government members, usually on the grounds of mismanagement and the subsequent suspension of elections. With municipal authorities being run by state government appointed administrators, the outcome has been a lack of accountability, corrupt and inefficient bureaucracies, internal struggles and public apathy toward the institutions of local government. The result has been a political and administrative paralysis when dealing with environmental problems and little interest in the equitable distribution of urban services (Chaplin, 1999).

1.8 MEASURES TAKEN BY THE GOVERNMENT OF INDIA

1.8.1 National Commission for Safai Karamcharis

(a) The National Commission for Safai Karamcharis (NCSK) was constituted on 12th August 1994 for a period of 3 years under the

provision of the NCSK Act, 1993 to promote and safeguard the interests and rights of Safai Karamcharis. The NCSK seeks to study, evaluate, and monitor the implementation of various schemes for Safai Karamcharis as an autonomous organization and also to provide redressal of their grievances. The Commission shall perform all or any of the following functions, namely:

(b) (a) recommend to the Central Government specific programmes of action towards elimination of inequalities in status, facilities and opportunities for Safai Karamcharis under a time-bound action plan study and evaluate the implementation of the programmes and schemes relating to the social and economic rehabilitation of Safai Karamcharis and make recommendations to the Central Government and State Governments for better co-ordination and implementation of such programmes and schemes;

(c) investigate specific grievances and take suo moto notice of matters relating to non-implementation of:

(i) programmes or schemes in respect of any group of Safai Karamcharis;

(ii) decisions, guidelines or instructions, aimed at mitigating the hardship of Safai Karamcharis;

(iii) measures for the social and economic upliftment of Safai Karamcharis;

(iv) the provisions of any law in its application to Safai Karamcharis and take up such matters with the concerned authorities or with the Central or State Governments;

(d) make periodical reports to the Central and State Governments on any matter concerning Safai Karamcharis, taking into account any difficulties or disabilities being encountered by Safai Karamcharis; and

any other matter which may be referred to it by the Central Government (Sharma, 1995).

1.8.2 National Safai Karamcharis Finance and Development Corporation

The National Safai Karamcharis Finance and Development Corporation was incorporated on 24th January, 1997 as a company not for profit under Section 25 of the Companies Act, 1956. It is an Apex Corporation under the Ministry of Social Justice and Empowerment, Government of India. The target groups of the Corporation are sanitary workers and their dependents.

No income limit is fixed for availing financial assistance from the corporation. The Corporation accords priority to economic development and rehabilitation of scavengers, women and Persons with Disabilities from among the target group. It functions through channel finance system in which concessional loans are routed to the beneficiaries through the State Channelizing Agencies appointed by the respective State Governments/Union Territories.

Authorized share capital of the Corporation was enhanced from Rs. 200 crores to Rs. 300 crores in February, 2009. The paid up capital of the Corporation at the end of March, 2011 was Rs. 299.99 crores. The Government in January, 2012 has enhanced the authorized share capital of the corporation from Rs. 300 crores to Rs. 600 crore, in January, 2012. During 2011-12, Rs. 45.00 crores have been released as equity to the Corporation (Government of India, 2012). The Corporation implements schemes to promote self employment in alternative occupations through concessional finance, and skill development. Since its inception, the Corporation has disbursed Rs. 724.24 crores covering 2.31 lakh beneficiaries, out of which an amount of Rs. 95.15 crores covering 0.19 lakh beneficiaries was covered in

2011-12 (Government of India, 2012).

1.8.3 National Scheme of Liberation and Rehabilitation of Scavengers and their Dependents

The main objective of the National Scheme of Liberation and Rehabilitation of Scavengers and their dependents is to liberate them from their existing hereditary, obnoxious and inhuman occupation of manually removing night soil and filth and to provide for and engage them in alternative and dignified occupations.

The main components of the scheme are the identification of scavengers and their dependents and their aptitude for alternative trade through a survey. Training in identified trades for scavengers and their dependents at the nearest local training institutions/centres of various departments of State Governments, Central Government and other semi-Government and non-Government organizations. Rehabilitation of scavengers in various trades and occupations by providing subsidy, margin money loan and bank loan (Thakur, 2007).

1.8.4 Centrally Sponsored Scheme of Pre-Matric Scholarship for Children of those engaged in unclean Occupation.

The Government is also concerned about the spread of education amongst the children of those engaged in unclean occupation, as it is only through education, proper assimilation of this section of society with the main stream of society would be possible.In order to meet the increasing and challenging needs of this special group, a centrally sponsored scheme known as "Pre-Matric Scholarship for the children of those engaged in unclean occupation" was launched by the Government of India to assist the children of scavengers, sweepers having traditional links with scavenging, flayers and tanners, irrespective of religion to pursue school education (Government of

India, 2012).

1.8.5 Integrated Low Cost Sanitation Scheme

The Government of India, Ministry of Urban Employment and Poverty Alleviation along with HUDCO have joined hands in taking up a very major programme for integrated low cost sanitation for conversion of dry latrine system into water borne low cost sanitation system and at the same time liberating the manual scavengers. HUDCO has also been extending assistance to basic sanitation schemes.

1.8.6 Role of HUDCO in Sanitation

The Housing and Urban Development Corporation Limited (HUDCO), established in 1970 as a Government of India public sector undertaking, has been instrumental in financing and promoting housing and urban infrastructure projects across the country. While housing remains a major focus area, HUDCO's contribution to sanitation is equally significant, as sanitation forms an integral part of urban development and public health. Recognizing that access to proper sanitation is a prerequisite for improving the quality of life, HUDCO has extended financial, technical, and managerial support to states, urban local bodies, and various implementing agencies. Its role in sanitation covers funding of infrastructure, support to national schemes, promotion of low-cost technologies, research and capacity building, and integration of sanitation within larger housing and city development projects.

1.8.7 Financial Support for Sanitation Projects

One of HUDCO's most important contributions has been the financing of sanitation-related infrastructure. It provides long-term loans and project-based assistance to state governments, municipalities and other organizations for building toilets, drainage systems, sewage treatment plants and solid waste management facilities. These interventions help

local bodies strengthen their sanitation infrastructure, which often suffers from lack of funds. By offering concessional terms and special schemes for weaker sections, HUDCO ensures that sanitation is not neglected in the broader framework of urban development. Over the decades, the corporation has become a crucial partner for municipalities in bridging financial gaps and accelerating sanitation projects in towns and cities.

1.8.8 Support for Government Programmes

HUDCO has aligned itself with national flagship programmes on sanitation. It has played a major role in supporting the Integrated Low-Cost Sanitation (ILCS) Scheme, which aimed to replace unhygienic dry latrines with sanitary ones and thereby eliminate manual scavenging. By financing the construction and conversion of thousands of such toilets, HUDCO contributed directly to improving dignity and health in marginalized communities. In more recent years, HUDCO has been actively associated with the Swachh Bharat Mission, extending financial and advisory assistance for household, school, and community toilets. Through its support to Namami Gange and other urban renewal schemes, HUDCO has funded projects related to sewage treatment and river cleaning. This alignment with government programmes ensures that HUDCO's efforts are not isolated, but integrated within national sanitation goals.

1.8.9 Promotion of Low-Cost and Appropriate Technologies

Sanitation cannot be sustainable unless technologies are appropriate, affordable, and community-friendly. HUDCO, through its Human Settlement Management Institute (HSMI), has encouraged the adoption of low-cost sanitation technologies such as pour-flush toilets, bio-digesters, eco-friendly sewage treatment systems, and decentralized

wastewater treatment plants. The corporation has funded pilot projects to test and demonstrate innovative methods of waste management, particularly for urban poor settlements and slums. By promoting these models, HUDCO has provided cost-effective alternatives to municipalities that often struggle with high infrastructure costs. These technologies also help in reducing environmental pollution and recycling waste into usable forms like compost and energy.

1.8.10 Capacity Building and Training

Apart from financing, HUDCO has recognized that sustainable sanitation requires trained human resources and informed communities. Through workshops, seminars and training programmes conducted by HSMI, HUDCO has strengthened the capacity of engineers, town planners and municipal officials in sanitation planning and management. Topics such as solid waste management, wastewater reuse and eco-sanitation are emphasized to build technical knowledge as well as awareness of best practices. This role is vital because many urban local bodies lack professional expertise in sanitation, leading to poor maintenance and under-utilization of infrastructure. HUDCO's contribution in capacity building thus helps in the effective implementation of sanitation projects on the ground.

1.8.11 Community-Oriented Sanitation Interventions

HUDCO's sanitation initiatives are not limited to large infrastructure projects; they also extend to community-oriented schemes. The corporation has supported housing boards, cooperative societies and non-governmental organizations in providing sanitation facilities for slums and low-income neighbourhoods. It ensures that sanitation is included in housing finance schemes for economically weaker sections and low-income groups. For many urban poor families, access to toilets

and safe waste disposal is made possible through HUDCO's financial assistance. In this way, HUDCO's interventions contribute to reducing open defecation, improving health outcomes and enhancing the dignity of marginalized communities.

1.8.12 Integration with Urban Development

A unique feature of HUDCO's role is the integration of sanitation with broader urban development projects. Whenever HUDCO finances housing colonies, industrial townships, or city infrastructure, sanitation is treated as an essential component. This ensures that new settlements are equipped with proper drainage, sewerage, and waste management systems, preventing the creation of slums or unhygienic environments. By mainstreaming sanitation into housing and infrastructure finance, HUDCO helps in building sustainable urban habitats rather than focusing only on physical shelter. This integrated approach distinguishes HUDCO's contribution from purely housing-focused institutions.

1.8.13 Research, Documentation and Policy Inputs

HUDCO has also contributed to sanitation through research and policy guidance. It documents successful case studies, prepares manuals and provides advisory inputs to states and municipalities on sanitation planning. The Human Settlement Management Institute acts as a knowledge hub, generating awareness about innovative practices, low-cost designs and sustainable models. By creating such knowledge resources, HUDCO strengthens the evidence base for policy formulation and helps local governments adopt effective solutions.

1.8.14 Valmiki Malin Basti Awas Yojna

Valmiki Ambedkar Malin Awas Yojna was launched by Government of India during 2001 with the aim to provide shelter and upgrade the

existing shelter for people living below poverty line in urban slums which helps in making cities slum free. The scheme is shared on 50:50 bases with states. Preference is given to women headed households. The government releases subsidy on a 1:1 basis with loan (Pathak, 2006).

The National Advisory Council of the Government of India observed that manual scavenging persists despite being outlawed and thus urged the Central Government to ensure that the practice of manual scavenging is fully abolished in coordination with all the Central Government Departments including the Railways and concerned States/local Governments. It also urged for conducting a new survey with wide public involvement, of remaining dry latrines and manual scavengers. In pursuance of this, consensus which emerged in the consultation meeting the Ministry of Social Justice and Empowerment constituted a Task Force to recommend detailed modalities for undertaking a fresh survey of manual scavengers who are yet to be rehabilitated and their dependents. The task force submitted its report in May, 2011. A Scheme for survey of manual scavengers and their dependents under the Self Employment Scheme for Rehabilitation of Manual Scavengers has been approved by the Government in December, 2011 at an estimated cost of Rs. 35 crores (Government of India, 2012). The process for undertaking the survey including appointment of a National Level Technical Agency has been initiated. Advisory issued to States to take criminal action under the Scheduled Castes and Scheduled Tribes (PoA) Act, 1989 against those employing a person for manual scavenging.

The National Advisory Council also urged to amend the law to ensure sharper definition of manual scavenging, and accountability of

public officials who employ or fail to prevent, manual scavenging. In pursuance of this, the Ministry of Social Justice and Empowerment has prepared a draft Bill titled" The Insanitary Latrines and Manual Scavenging and Rehabilitation of Manual Scavengers Bill, 2012" and is consulting States on its provisions (Government of India, 2012).

1.9 CURRENT STATUS OF SANITATION IN TAMIL NADU

Tamil Nadu is one of the most urbanized states in India, as 48.5 percent of the population lives in urban areas, according to the 2011 Census data. Given the incredible need for sanitation, the state has failed to act upon existing opportunities to make a change. For instance, the Ministry of Urban Development, in an effort to promote better urban sanitation, allotted Rs. 130 crores to states. The fund is to support cities in preparing City Sanitation Plans in which they would assess needs and make commitments to providing access to sanitation for all. While many cities have already begun drafting their City Sanitation Plans, Tamil Nadu, especially Chennai has not taken steps towards this goal. The state needs to ensure that the most basic needs of residents especially those from poorer sections of society do not go unheard (Sethuraman, 2012).

It has been a practice in urban sanitation to invest in Under Ground Sewerage System including the Sewerage Treatment Plants in the cities. It is the policy of the State Government in Tamil Nadu to provide Under Ground Sewerage System to all the towns in phases. Out of the 10 City Municipal Corporations in Tamil Nadu, 6 Corporations, i.e. Chennai, Madurai, Coimbatore, Tiruchirappalli, Tirunelveli and Tiruppur have sewerage system. In Thoothukudi, Vellore, Salem and Erode the work is under progress. Out of the 125 Municipalities, only around 15 per cent have sewerage connections, and in over 9 per cent

the work is under progress (Government of Tamil Nadu, (2012). The coverage of population by the sewerage system is generally confined to the core areas of the cities where the system has been completed. While the sewerage systems are considered ideal for the dense urban settlements, over a period of time, a large number of on-site arrangements have emerged as the popular solution for the bulk of urban households. Almost half of the urban households have built their own on-site systems including septic tanks, soak pits or even connected directly with the open drainage system.

In Tamil Nadu, under Low Cost Sanitation Scheme, 4,91,229 individual toilets and 345 community toilets have been constructed and 4,450 scavengers were liberated as on March 2012 from manual scavenging and rehabilitated by providing alternative jobs or providing self-employment with the financial assistance from the Government of Tamil Nadu (Government of Tamil Nadu, (2012). In June 2003, the Government issued a notification that no person shall engage in or employ for or permit tobe engaged in or employed for any other person for manually carrying human excreta or construct or maintain a dry latrine in areas comprising the whole of Tamil Nadu with effect from 1st October of 2003 (Government of Tamil Nadu, (2012).

1.10 STATEMENT OF THE PROBLEM

Sanitary workers are at the very bottom of the socio-economic ladder of the society, whose condition is much worse than even that of the Scheduled Caste and Scheduled Tribe in general. The nature of work theystill carry out is not only inhuman and derogatory but also quite condemnable. Many court rulings have been passed and many official measures and Acts have been implemented in order to notonlypromote the living conditions of the sanitary workers, but also to totally abolish

the inhuman practices being carried out by them. Such practices are taking place in many states, railways and in other places. This underscores the utter neglect and official apathy about the conditions of the sanitary workers, since their working environment is quite risky and highly unhealthy and their living environment is also much worse.

Modernization of the towns and city sewer systems has only changed the nature of work being done by the sanitary workers who are now forced to undertake the work of getting into the sewer pipes at the cost of their lives. Even their children are looked down upon by the society. The Centre for Human Rights and Social Justice noted that the children of manual scavengers are particularly vulnerable to discrimination in their schools where they are forced to perform cleaning and scavenging work and where discrimination undermines all aspects of their education and often causes them to drop out of school altogether (Mohanty, 2014). After the introduction of economic reforms in the country, the process of contract system has also caught up with the sanitary workers, since most of them are employed on contract basis, losing even the benefits of permanent workers. In this background, it becomes quite necessary to examine the living and working environment of the sanitary workers with the help of primary data which is attempted in this study.

1.11 SIGNIFICANCE OF THE STUDY

Sanitation workers form the backbone of any society's public health system, ensuring that waste is managed, streets are cleaned, and environments remain liveable and hygienic. Despite the indispensable role they play in maintaining both environmental cleanliness and community health, their contributions often remain invisible and underappreciated. In most cases, these workers continue to operate

under extremely harsh and unsafe conditions, facing occupational hazards, inadequate recognition and widespread social stigma. Their work which is fundamental to the functioning of cities, towns and villages is taken for granted, leaving them marginalized in both economic and social terms. This study titled *"An Explorative Study on the Challenges of Sanitary Workers"* seeks to bring attention to the lived realities of this workforce and provide a platform for their voices to be heard.

Sanitation is often viewed as a technical or infrastructural issue linked with toilets, drains and waste management systems but the human element behind this system, namely the sanitary workers, is rarely given adequate importance. The study recognizes that the conditions under which these workers operate directly influence not only their health and dignity but also the overall quality and effectiveness of public sanitation services. By focusing on their struggles, the research highlights how systemic neglect of this group has wider implications for society. If sanitary workers remain unsupported, the sanitation system itself becomes unsustainable as it relies heavily on the manual labour of individuals who are often poorly compensated and insufficiently protected.

Tamil Nadu presents a particularly relevant context for such an investigation. The state has historically implemented several welfare schemes, strong municipal governance systems and an extensive sanitation framework that covers both urban and rural areas. Yet despite these advancements, the challenges faced by sanitary workers in Tamil Nadu remain profound. Workers employed by municipal corporations, panchayats or contracted private agencies often find themselves engaged in tasks such as cleaning drains, collecting

garbage, managing sewage and handling biomedical waste. These are jobs that expose them to toxic substances, pathogens and physically demanding conditions. While the state's policy framework is relatively robust, the implementation on the ground often leaves gaps that result in inadequate safety measures, poor healthcare coverage and inconsistent wages. By exploring this paradox of strong governance structures coexisting with worker vulnerability, the study sheds light on the need for deeper systemic reform.

The study identifies a series of interlinked challenges that define the daily experiences of sanitary workers. Occupational hazards are perhaps the most visible issue: workers are frequently exposed to hazardous chemicals, untreated waste and sharp objects without proper protective equipment such as gloves, boots or masks. This lack of safety precautions leads to injuries, infections and long-term health conditions, including respiratory problems and skin diseases. Economic vulnerabilities compound these risks. Many sanitary workers, particularly those engaged on a contract basis, receive irregular wages that are insufficient to support their families. Their earnings are often delayed and in many cases, they lack access to social security benefits such as pensions, health insurance, or paid leave. These economic insecurities perpetuate cycles of poverty and prevent workers from improving their living standards. In addition to occupational and economic challenges, sanitary workers face deep-rooted social stigma. Historically, sanitation work has been associated with caste-based occupations in India and this legacy continues to marginalize workers socially and culturally. Many of them experience discrimination in their communities, isolation in schools for their children and exclusion from mainstream society. This entrenched stigma undermines their dignity

and prevents them from enjoying the respect that their critical contribution deserves.

The importance of this research lies in its potential to highlight these systemic injustices and provide actionable insights for policymakers, municipal authorities and social reformers. By carefully documenting the conditions of work, the health risks, the economic vulnerabilities and the social marginalization faced by sanitary workers, the study offers evidence that can shape reforms and interventions. It also emphasizes the necessity of ensuring that safety measures such as protective gear, medical check-ups, and training are made mandatory and are implemented effectively. It underscores the urgency of providing fair wages, healthcare benefits and social security provisions to uplift this workforce from cycles of poverty and insecurity.

This research also resonates with broader policy frameworks and international commitments. At the national level, improving the conditions of sanitary workers supports government initiatives like *Swachh Bharat Abhiyan* which emphasizes not only clean cities but also the dignity of labour. At the international level, the study aligns with the United Nations Sustainable Development Goals. Specifically, it contributes to Goal 8 (Decent Work and Economic Growth), Goal 10 (Reduced Inequalities) and Goal 11 (Sustainable Cities and Communities). By situating the struggles of sanitary workers within this global development framework, the research highlights that addressing their challenges is not merely a matter of welfare but a necessary step toward achieving sustainable and inclusive development.

This study aspires to foster a society where the dignity of all forms of labour is recognized and respected. By bringing the experiences of sanitary workers to the forefront, it challenges policymakers, civic

bodies and civil society organizations to acknowledge the human cost of neglect and exploitation in the sanitation sector. It calls for a comprehensive approach that combines legal reforms, policy enforcement, community sensitization and economic empowerment to uplift sanitary workers. Addressing their challenges is not only a matter of improving working conditions but also of ensuring social justice and equity.

"An Explorative Study on the Challenges of Sanitary Workers" provides a critical lens to examine the intersection of labour, dignity and public health. Sanitary workers in Tamil Nadu, despite operating in a state with relatively strong sanitation policies, continue to face hazardous working conditions, economic insecurities and social marginalization. Their struggles are symbolic of the broader neglect of this workforce across India. By systematically analyzing these challenges, the study emphasizes the urgent need for policy interventions, worker protections and social reforms that can transform the lives of sanitary workers. In doing so, it contributes to the vision of an equitable and inclusive society where every individual's labour is valued and respected.

1.12 CONCLUSION

The study "An Explorative Study on the Challenges of Sanitary Workers" concludes that despite their indispensable role in sustaining public health and environmental hygiene, sanitary workers continue to face multiple forms of vulnerability rooted in unsafe working conditions, economic insecurity and entrenched social stigma. Their daily struggles with occupational hazards, irregular and insufficient wages, lack of social security and caste-based discrimination not only endanger their health and dignity but also threaten the sustainability of

the sanitation system itself. In the context of Tamil Nadu where robust policy frameworks and welfare schemes exist, the persistence of these challenges highlights gaps in implementation and enforcement, emphasizing the urgent need for systemic reform. Addressing these issues requires more than piecemeal welfare measures; it demands a comprehensive strategy that ensures protective equipment, fair wages, healthcare coverage, legal safeguards and social recognition of their contributions. By situating the plight of sanitary workers within both national initiatives like Swachh Bharat Abhiyan and global frameworks; the Sustainable Development Goals, the study underscores that improving their conditions is integral to achieving social justice, equity and sustainable development. Valuing the dignity of their labour is essential to build an inclusive and humane society.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

The review of related studies is a crucial component of research investigation. It enables the researcher to acquire up-to-date knowledge about the developments in their specific field and identify gaps for further exploration. Best (1992) defines the review of related studies as "A summary of previous references and the writings of recognized experts, providing evidence that the researcher is familiar with what is already known and what remains unknown or untested.". Lokesh Koul (1990) emphasizes that "A careful review of research journals, books, dissertations, theses, and other sources of information related to the problem under investigation is one of the most important steps in planning any research study."

According to Best (1997) "A summary of previous research and the writings of recognized experts provide researchers with familiarity regarding what is already known and what remains unknown. Since effective research must build on past knowledge, this step helps eliminate duplication of existing work and offers useful hypotheses and valuable suggestions for meaningful investigation."

2.2 PURPOSE OF THE REVIEW

The purpose of reviewing related studies includes the following:

- To acquire background knowledge of the research topic.
- To identify key concepts related to the topic, explore potential relationships among them, and formulate researchable hypotheses.
- To recognize data sources utilized by other researchers relevant to the study on salt pan workers in the Thoothukudi District.

2.3. REVIEW OF RELATED LITERATURE

2.3.1 INDIAN STUDIES

Kadam et al. (2023) conduct a study on Poor health conditions of sanitation workers in Mumbai. The objective of the study was to examine the poor health conditions of sanitation workers in Mumbai, focusing on how caste, occupation and social environment intersect to impact health outcomes. The study applied an eco-social approach to health analysis. The sample included sanitation workers employed by the Mumbai Municipal Corporation, most of whom belonged to Scheduled Castes. Using eco-social analytical methods, the researchers evaluated pathways through which social structures affect worker well-being. The findings revealed that sanitation workers faced a heightened illness burden shaped by social hierarchies, with caste and occupation serving as critical determinants of health.

Dwidevi & Anju (2023) Social protection of sanitary workers in Odisha**.** This study sought to identify obstacles to social protection for sanitation workers in Odisha and propose strategies to overcome them. Employing a snowball sampling technique, the study surveyed 48 sanitation workers from Dhenkanal, Odisha. Data were gathered using interviews and analyzed to understand gaps in protection policies. Findings showed that most workers were contract-based, earned low wages, lacked health benefits, and faced unsafe working conditions. The analysis underscored that preventive, promotional, and transformational approaches are necessary to reduce health hazards.

Gopala Krishna & Gopika (2023) Status of sanitary workers in Nallagoundampatty village. This case study investigated the challenges faced by women sanitary workers in Nallagoundampatty village. The sample consisted of female sanitary workers under contract who previously worked

as daily wage laborers. Data collection involved detailed case studies, and findings highlighted poor living and working conditions, low wages averaging Rs. 3,500 per month, and significant health issues such as frequent vomiting of blood caused by chemical exposure. The study concluded that these workers were the primary earners of their families, burdened by debt, and frequently exposed to unsafe cleaning practices.

Gupta, Sharma & Kumar (2023) Health and occupational hazards of manual scavengers in India: A cross-sectional study. This study assessed the occupational health hazards faced by manual scavengers in North India. A purposive sample of 350 manual scavengers from Uttar Pradesh and Bihar was examined through structured interviews and health check-ups. Data were analyzed using SPSS Version 26 to calculate descriptive statistics. Findings revealed that the workers suffered from respiratory disorders such as chronic obstructive pulmonary disease, skin infections, and over lacked safety equipment. The study emphasized the urgent need for government interventions, mechanization, and provision of health insurance.

Jen Barr (2022) Health risks and well-being of sanitation workers. This study highlighted how workplace conditions and exposure to hazardous waste materials affect the health and well-being of sanitation workers. The objective was to explore the risks and vulnerabilities faced by sanitation workers in low- and middle-income nations. The methodology involved a qualitative review of academic research, NGO reports, and news coverage. The study sample primarily referred to women working in informal sanitation networks. Analysis focused on synthesizing existing knowledge gaps, showing that sanitation workers are highly vulnerable to gastrointestinal, respiratory, musculoskeletal, and social/mental health problems. The findings revealed that addiction to alcohol as a coping

mechanism worsened health outcomes, while lack of recognition and invisibility in society exacerbated their challenges.

Lekha Amirtha (2022) Morbidity profile of sanitary workers in Kancheepuram District. This cross-sectional study aimed to document the morbidity profile of 420 sanitary workers in Kancheepuram District. The methodology used a survey approach to capture data on chronic and acute health issues. The sample included both male and female sanitation workers employed in the district. Data analysis was descriptive, focusing on prevalence percentages of diseases. The findings revealed high levels of hypertension diabetes mellitus, cardiovascular problems, musculoskeletal disorders, eye issues, skin diseases, gastrointestinal conditions, and work-related injuries. The study concluded that poor equipment and repetitive work postures contributed to long-term morbidity.

Renugadevi & Tarunika (2022) Lifestyle of sanitation workers in Coimbatore Corporation. The objective of this study was to examine the everyday lifestyle, income, work environment, and sanitation practices of workers in Coimbatore Corporation. The methodology applied was the time-use observation method, in which researchers observed workers at home, at work, and in union spaces. The sample consisted of 2,520 permanent and 2,300 contract sanitary workers across 100 wards of Coimbatore Corporation. Findings were analyzed thematically, identifying poor working conditions and low wages as central issues. The study concluded that sanitation workers faced excessively long working hours, poor nutrition, exposure to toxic waste, and a devalued social status, resulting in an unsatisfactory and unhealthy lifestyle.

Ajith & Rajendran (2022) Occupational health hazards of sanitary workers in Greater Chennai City Corporation. This analytical survey studied

occupational health hazards caused by exposure to toxic gases among 90 sanitation workers in Chennai. The methodology involved a structured survey of both contract and permanent workers. The sample included workers from diverse communities, with Scheduled Caste workers predominating. Analysis focused on the relationship between toxic gas exposure and health outcomes. The findings revealed severe health risks: exposure to gases such as methane, hydrogen sulfide, and ammonia caused respiratory malfunction, loss of consciousness, and even death. Additional hazards included burns, electric shocks, fractures, varicose veins, diarrhea, and stress. The study emphasized the urgent need for protective gear to prevent occupational fatalities.

Patel & Joshi (2021) Impact of Swatch Bharat Mission on the lives of sanitation workers in India. This longitudinal study aimed to analyze the impact of the Swatch Bharat Mission (SBM) on the income levels, work conditions, and social status of sanitation workers. The methodology involved tracking 500 sanitation workers across Maharashtra, Gujarat, and Delhi over a five-year period (2016–2021). The sample included both male and female sanitation workers from different states. Data were collected using surveys, interviews, and focus group discussions, with statistical analysis performed using STATA 15. Findings revealed marginal improvements in income and awareness of safety practices, but limited change in working conditions, with 60% of workers still lacking access to protective equipment. The study concluded that while SBM improved infrastructure and awareness, it had limited direct benefits for sanitation workers.

Rao & Devi (2021) Gender disparities in the working conditions of female sanitation workers in Karnataka. The objective of this qualitative study was

to investigate the challenges faced by female sanitation workers in Karnataka, particularly in relation to wage disparities, harassment, and lack of amenities. The methodology included in-depth interviews and focus group discussions. The sample consisted of 250 female sanitation workers selected through snowball sampling from Bangalore, Mysore, and Hubli. Analysis used thematic methods to identify recurring issues. Findings revealed that the women faced wage discrimination and reported harassment at work, and most lacked access to maternity benefits. The study concluded that gender-sensitive labor policies and strict enforcement mechanisms were needed to address inequalities.

Srivastav et al. (2020) Time usage survey of sanitation workers in Bengaluru City. This study aimed to document the living and working circumstances of sanitation workers in Bengaluru through a time usage survey. The methodology included structured interviews and survey questionnaires. The sample consisted of sanitation workers from different parts of the city, with a focus on their occupational routines. Analysis was descriptive, focusing on patterns of work and lifestyle. The findings revealed that the of workers lacked technological skills and they were unskilled laborers with no training opportunities had no leisure time, and 33% consumed alcohol to relieve physical discomfort. Women were excluded from night shifts due to harassment risks.

Swarup, Abhishri & Gupta (2020) Analyzing the working conditions of sanitation workers with reference to urban slum dwellers. The objective of this research was to analyze the working conditions of sanitation workers from urban slums, emphasizing political, economic, and social aspects. The methodology was conceptual and analytical, with a focus on deconstructing the sanitation system. The sample primarily referred to urban poor workers

living in slums who were employed in sanitation. Analysis involved reconstructing the sanitation framework in India. Findings highlighted that caste stigma, poverty, and migration patterns influenced workers' employment choices, and sanitation workers were stigmatized as 'polluted' due to cultural beliefs.

Meena & Priyanka (2020) Socio-economic status of sanitary workers in Tuticorin Municipal Corporation. This study examined the socio-economic conditions of 150 sanitary workers in Tuticorin Municipal Corporation. The methodology used a simple random sampling method with structured interviews. The sample included 75 contract and 75 permanent workers. Analysis compared the socio-economic backgrounds of both groups. The findings revealed that contract workers were generally younger (30–40 years) while permanent employees were older (45–55 years). Illiteracy was prevalent among both groups, with 49% of permanent and 48% of contract workers lacking formal education. A significant correlation was found between age and education level.

Gomathi & Kamala (2020) Threatening health impacts and challenging life of sanitary workers. The objective of this review was to document the occupational health hazards faced by sanitary workers. The methodology was a review of existing literature and field observations. The sample referred to general populations of sanitary workers across various contexts. Analysis synthesized data on specific diseases and risks. The findings highlighted occupational diseases such as leptospirosis, salmonellosis, tetanus, musculoskeletal disorders and gastrointestinal, dermatological, and respiratory issues. The review emphasized the need for policy reforms, unions, and improved protective measures for workers.

Wankhade & Kavitha (2020) Overview of sanitation programmes in Trichy. This study, funded by the Bill & Melinda Gates Foundation, aimed to assess the impact of the Tamil Nadu Urban Sanitation Support Programme on sanitation workers in Trichy. The methodology involved field research, interviews, and observations of workers. The sample included sanitary workers employed in the Trichy Corporation. Analysis focused on the socio-economic and health conditions of workers under the sanitation programme. The findings revealed that workers faced stigma, poor living conditions, lack of safety equipment, domestic violence, and financial burdens. Scheduled Tribe workers also experienced problems obtaining community certificates for recognition. The study concluded that despite reforms, workers continued to face systemic neglect.

Malviya et al. (2019) Awareness of occupational risks among sanitary workers in Madhya Pradesh. The objective of this study was to analyze the knowledge and awareness of occupational hazards among sanitary workers employed in private multi-specialty hospitals across Bhopal, Gwalior, Ujjain, and Jabalpur. The methodology used a convenience sampling approach. The sample consisted of 279 sanitary workers across different hospitals. Data were collected using a structured questionnaire designed by the researcher. Analysis employed descriptive statistics to evaluate awareness levels and demographic traits. Findings indicated that most workers were unaware of risks associated with lifting heavy loads, poor hygiene, stress, inadequate rest, and long working hours. The study highlighted the lack of protective gear and poor work-life balance.

Baskar & Anupriya (2018) Health hazards of Coimbatore Corporation sanitary workers. The objective of this study was to investigate the occupational health challenges faced by sanitary workers in Coimbatore

Municipal Corporation. The methodology involved the use of a self-structured interview schedule and an accidental sampling method. The sample consisted of 51 sanitary workers from Coimbatore. Data were analyzed descriptively. Findings revealed that 78% of workers earned between Rs. 6,000 and Rs. 16,000, but 71% were unable to save money due to low wages. A majority (94%) were the primary breadwinners of their families. Health issues included respiratory problems (57%), muscle cramps (80% of men), and alcohol addiction (53%). The study emphasized the importance of social work interventions to address sanitary workers' problems.

Saravana Balaji et al. (2018) Occupational health status of sewage and sanitary workers in Avaniyapuram, Madurai District. The study aimed to assess the occupational health status of sewage and sanitary workers in Avaniyapuram, Madurai District. The methodology applied was a descriptive study design. The sample included sewage and sanitary workers from the district. Analysis focused on hematological and health indicators. Findings revealed that the total polymorph count ranged from 64–70%, suggesting lung infections. Hemoglobin values ranged from 7 to 10 g/dl, indicating mild to moderate anemia among all samples.

Ahire & Bhalerao (2017) Occupational health hazards of sanitary workers in Kolhapur City. The objective of this descriptive study was to assess occupational health hazards among 50 sanitary workers in Kolhapur City. The methodology involved structured interviews with workers. The sample consisted of 50 male and female sanitary workers. Analysis compared health problems by gender. Findings showed that workers experienced body ache, headache, tiredness, musculoskeletal disorders, skin problems, chest pain, leg pain, cough, respiratory and gastric issues. A lack of use of personal

protective equipment was common, with 30% of women and 22% of men unwilling to use gloves, aprons, or shoes.

Sherlin Sophia & Pavithra (2017) Lifestyle and challenges of sanitary workers in Tiruchirapalli. The aim of this descriptive study was to analyze the lifestyle of 60 sanitary workers in Tiruchirapalli. The methodology applied was structured interviews. The sample included 60 sanitary workers. Analysis was descriptive. Findings revealed that 57% preferred their job, 58% used protective equipment, while 62% faced harassment from higher authorities and 55% faced social discrimination. A large portion (68%) consumed alcohol and 70% reported physical health issues such as gastrointestinal, skin, respiratory, and skeletal problems. The study concluded that both physical and psychological issues affected workers.

Lourdes Poobala Rayen & Juliet Nisee (2017) Working conditions of sanitary workers in Tirunelveli Corporation. The objective of this study was to examine the working conditions of sanitary workers in Tirunelveli Corporation. The methodology employed a simple random sampling method. The sample included 460 sanitary workers. Data were collected using interview schedules. Findings showed that 72% of workers were women, 88% from Scheduled Castes, and 11% from Scheduled Tribes. Most worked seven days a week, including cleaning septic tanks and dead animals. Workers faced stress, discrimination, and mental health problems. The study emphasized the need for medical camps, legal awareness, and NGO support.

Mathangi et al. (2016) Working conditions of female sanitary workers in New Delhi. This study investigated the working conditions of female sanitary workers in New Delhi and the factors influencing their occupational choice. The methodology included surveys conducted at three occupational sites. The sample consisted of female sanitary workers, many of whom

reported being coerced into the occupation due to caste and class conditions. Analysis focused on occupational exposures and lack of protective measures. Findings revealed prolonged contact with waste materials without protective gear, leading to viral and skin diseases. The absence of protective equipment was attributed to irregular supply and damaged tools, leaving workers highly vulnerable.

Rajavel (2015) Health problems faced by women sanitary workers in Thanjavur**.** The objective of this study was to explore the health problems experienced by women sanitary workers in Thanjavur. The methodology used a census method, and socio-demographic data were collected using a semi-structured interview schedule. The sample consisted of women sanitary workers from the Thanjavur Municipal Corporation. Analysis examined the relationship between age and quality of life. Findings revealed that 60% of women faced sex discrimination, 81% were illiterate, and 67% had skin diseases. The study concluded that age significantly influenced quality of life and that gender discrimination exacerbated workers' challenges.

Prabhakumari Chellammal et al. (2015) Morbidity profile of sanitary workers in Thrissur, Kerala. This cross-sectional study examined the morbidity profile of 601 sanitary workers in Thrissur Corporation, Kerala. The methodology included structured interviews conducted over six months. The sample included 601 sanitary workers, 53.6% of whom were men. Analysis focused on the prevalence of acute and chronic illnesses. Findings revealed that the reported at least one acute illness such as respiratory problems gastroenteritis and injuries. Chronic illnesses included anemia diabetes and hypertension. The study highlighted the importance of protective equipment and regular health monitoring

Sukanya Rangamani et al. (2015*)* Health issues and behaviors of sanitary workers in Chitradurga, Karnataka. This study aimed to investigate health issues and occupational behaviors among sanitary workers in Chitradurga town, Karnataka. The methodology applied an epidemiological study design. The sample consisted of sanitary workers from Chitradurga. Analysis focused on identifying occupational health hazards. Findings revealed that injuries and chest pain were common, and workers often consumed alcohol as a coping mechanism or as a workplace practice. The study concluded that workers required guidance on occupational hazards and that government intervention were necessary to regulate harmful practices.

Rajan & Selvamani (2015) Socio-economic status of Dalit women employed in sanitary work in Tirupur. The objective of this study was to examine the socio-economic conditions of Dalit women employed in sanitary work in Tirupur district, Tamil Nadu. The methodology used a simple random sampling method with structured interviews. The sample consisted of 257 women sanitary workers. Analysis focused on education, working conditions, and social challenges. Findings revealed that 74% lacked toilet access, 47% were illiterate, and many were married at young ages (11–17 years). Domestic violence was common due to alcohol consumption by spouses. The study concluded that Dalit women sanitary workers faced severe socio-economic disadvantages and generational cycles of sanitation work.

2.3.2 FOREIGN STUDIES

Tolera et al. (2024) conducted a study titled Global Prevalence of Occupational Injuries among Sanitation Workers: A Systematic Review and Meta-Analysis. The study aimed to assess the global prevalence of occupational injuries among sanitation workers caused by hazardous

working conditions and inadequate occupational safety measures. The meta-analysis included data from 23 studies conducted between 2000 and 2023, covering a total of 8,138 sanitation workers. A systematic review and meta-analysis were performed following PRISMA guidelines, and statistical analyses were conducted using Stata Version 17MP to calculate the pooled prevalence of occupational injuries. The findings revealed that the global pooled prevalence of occupational injuries among sanitation workers was 36.49%. High-income countries reported a prevalence of 39.14%, whereas low-income countries reported 35.22%. The study emphasized the urgent need for policy amendments, national regulations, and international initiatives to enhance occupational.

Milalnzi et al. (**2023)** Their research indicates that a variety of waste is produced by healthcare institutions that, if improperly handled, might endanger patients, staff, the public, and the environment. Healthcare workers have received training in infection prevention and healthcare waste management. The knowledge, attitudes, and behaviour of sanitary workers about the treatment of healthcare waste in the Dodoma area of Tanzania were examined in this study, which provided light on the issue even though sanitation workers participate in such activities as part of healthcare services. The results of the investigation showed that sanitation workers are not properly trained to dispose of garbage.

Ittefaq et al. (2023) The global marginalization of sanitation workers in the media and society is examined in their research. When these vital workers belong to a religious minority, such antagonism is sometimes exacerbated in cultures with a majority of Muslims, such as Pakistan. Using the frameworks of social representation and social identity theories, this study uses a qualitative method of conducting in-depth interviews with thirty Christian

sanitary workers to shed light about the way they are seen to be depicted in Pakistan's mainstream media. The data analysis reveals three key themes: (a) the overrepresentation of unfavorable media, (b) the underrepresentation of mainstream media, and (c) knowledge of the effects of such representation. Sanitation workers believe their opinions are not being heard in Pakistan's mainstream media, according to this research.

Tolera et al. (2023) mentioned that the sanitation workers in Africa, India, and America are those who clean health care wastes, latrines, toilets, pits, offices, sewers, sewage treatment, manholes, sweeping streets, waste collection, faecal management, and handling sludge. Their study, "Global review of occupational health and safety outcomes among sanitation and hygiene workers," stated as much. Even though America's sanitation system has gradually become more mechanized in recent years, the COVID-19 outbreak has left people without access to the essential medical care. However, these groups are exposed to excreted bodily fluids, blood, infectious waste material suspected of containing pathogens (bacteria, viruses, parasites, or fungi); infectious agent cultures and stocks from laboratory work; and waste from infected patients in isolation wards in Africa and India as a result of inadequate occupational health and safety practices. Additionally, the other study discovered that they are dealing with wounds, injuries, hepatitis A, B, and C viruses, among other disorders linked to their line of work. These diseases and injuries have an impact on the workers' ability to execute their jobs, which lowers their efficiency.

Philippe Steren et al. (2022) conducted a study on ‘Challenges facing by Sanitation Workers in African Countries’ that the Sustainable Development Goals (SDG) depend on the necessary public service provided by sanitation workers, although doing so frequently the attention on health and dignity of

the sanitation workers is unexplorable. Although the state governments in developing countries lack of attention to provide assistance to their sanitation workers. This is partly due to the fact that individuals lack knowledge much about the requirements and difficulties faced by sanitation workers. With the use of four analyses that were carried out in Burkina Faso, Nigeria, Tanzania, and Zambia, this study is focused on bridging the information gap by examining the financial stability, legal protection, dignity, and well-being of sanitation workers. A survey, focus groups, key informant interviews, and literature reviews were among the methodologies used. According to the findings, sanitation workers in African nations are exposed to significant health and safety concerns, which are made worse by a dearth of appropriate protective gear and access to medical treatment. Their compensation is inadequate and inconsistent and they lack legal protection from the regulatory framework. Many more experience prejudice and stigma. It was discovered that "manual emptier" and those who worked informally had more difficulties. The study indicates that, in order to assist their sanitation workforce, governments need to create context-specific action plans. These plans should be developed in conjunction with sanitation worker groups and based on the findings of national and sub-national evaluations.

Ismail (2022) investigated Gender Perspectives on Occupational Risks Faced by Female Sanitation Workers in Cairo, Egypt. The study aimed to analyze the specific occupational risks faced by female sanitation workers in Cairo, with a focus on gender-based challenges such as harassment, discrimination, and lack of proper facilities. A total of 120 female sanitation workers were selected through snowball sampling. The study employed a qualitative research design, with semi-structured interviews and focus group discussions used to collect data. Thematic analysis was applied to interpret the qualitative data. The findings revealed that female workers faced

additional challenges, including lack of access to sanitation facilities, exposure to sexual harassment, and wage discrimination. The study recommended the implementation of gender-sensitive safety policies and advocacy for equal pay and safer working conditions for women sanitation workers.

Jen Barr (2022) in her study she pictured out, that the health risks and sanitary worker's wellbeing are influenced by workplace conditions and exposure to hazardous waste materials. There is an extensive knowledge gap about the different dangers and exploitations they face in their line of work. Insufficient study has been done on this topic to adequately address the issue and close the knowledge gap. The low-income middle-income nations continue to use women as a cheap labour force in this network of unorganized, contractual sanitation workers. Since sanitary workers are sometimes unseen by other people, even in places where they are employed, it is imperative to preserve their health and well-being as well as the communities on which they depend. Due to their increased vulnerability to illnesses and injuries, they rank lowest among social groups. Numerous News reports, NGO reports, and academic research all support the notion that there have been tragic events. Since the worldwide health research community is confronting difficulty to ensure that the amount of influence the sanitary workers have in the health care and balancing the healthy environment. This study demonstrated that sanitary workers in South Asian nations had higher rates of gastrointestinal, respiratory, musculoskeletal, and mental/social health infections. The main factor contributing to their gastrointestinal illnesses and demise is their addiction to alcohol or their usage of it to cope with the unclean materials. This pattern of deaths was identified in Paris in 2006, and it continues to harm male sanitation workers in India these days.

Kesavaraja et al. (2022) In their study, they discussed about the fact that operating in closed or subterranean sewage systems poses a major risk of gas leakage. Many sanitary workers who operate in hospitals and commercial buildings will be harmed by it. Despite Malaysia's updated drainage systems, the gas detection system continues to malfunction since it is not technologically advanced enough. The study has shown sewage gas detection in Malaysia using the "Internet of Things" (IOT). This arrangement involves interconnected computing devices, mechanical and digital machinery, materials, and any living beings including domestic animals and people that have the ability to transmit information over a system without requiring human interaction.

Tariq et al. **(2022)** The goal of their study is to evaluate the sanitary workers working conditions and health infections at a few Rawalpindi healthcare facilities. Men and women were included in the study, and the findings showed that 89% of them relied on government-run hospitals for frequent infections with dangerous viral fevers. The infection rate is greater in the 45–54 age group. Because of the dire situation of the economy, 39% of them are unable to obtain elementary school. Due to their status as "Dalits," 42% of them experienced discrimination based on caste. While they consistently complete the same duties in one location whenever there is a need, female sanitary workers experienced plenty of workplace exploitation.

Ortega and Garcia (2021) examined the Impact of Waste Management Policies on the Safety and Welfare of Sanitation Workers in Mexico City. The study aimed to evaluate whether newly implemented waste management policies led to improvements in the occupational safety and welfare of sanitation workers. The research involved 200 sanitation workers from different districts of Mexico City, selected through random sampling. A

longitudinal research design was used, with data collected both before and after policy implementation. Surveys, focus group discussions, and safety audits were conducted to assess the changes. The findings indicated a moderate improvement in safety practices and a reduction in workplace accidents after the implementation of the new policies. However, gaps remained in the provision of protective gear and regular health check-ups. The study recommended stronger enforcement mechanisms and increased worker participation in policy design to ensure long-term improvements.

Justina Mary et al. (2021) conducted a detailed assessment on the improvement of knowledge of proper handling of waste handling through the methodology of Nursing Intervention in Akure South Local Government Area of Ondo State, Nigeria. A sample of 85 waste collectors were taken and given a three headed semi structured questionnaire for collection of data. As a process of data 14 collection researchers were used WHO training manual for collecting post trained data after their training process. The level of education of the waste handlers are only primary level, Knowledge of handing waste was increased as compared to pre trained and post trained workers. There is a very important relationship in waste collectors knowledge and education through nursing intervention in both the situation that is pre trained group and post rained. Concluded that Nursing Intervention is more effective method of improving the knowledge and practice of waste handlers and the agencies should adopt the same.

Girish Degavi et al. (2021) incorporated a cross sectional quantitative study to assess the knowledge, attitude and practice on prevention of occupational health hazards among 191 sanitary workers at Bulehora, Ethiopia. The study results showed that majority of the respondents were female. The sanitary workers were undergone training before engaging into the work. Sanitary

workers know about personal protective equipments. Among the sanitary workers were had adequate knowledge regarding prevention of occupational health problems, good attitude regarding prevention of health hazards and good practice on prevention of health problems.

Girish Degavi (2021) conducted a study among 191 solid waste handlers to assess the knowledge, attitude and practice regarding prevention of occupational health hazards and health risk in Bulehora University which showed that only 8. 9% solid waste handlers followed good practice on prevention of occupational health problems. Whereas in Experimental group even though in pretest, half of them had inadequate knowledge and many of them had followed adequate practice in posttest 2 such as wearing gloves, mask, apron & foot wear, taking well balanced diet, following hygienic habits and adequate rest and sleep.

Bartram and Bartram (2020) conducted a systematic review titled Global Occupational Health Risks and Safety Measures for Sanitation Workers. The study aimed to evaluate global occupational health risks, exposure to hazardous environments, and safety protocols followed by sanitation workers in both developing and developed countries. The systematic review analyzed 50 empirical studies conducted across Asia, Africa, and Latin America, covering data from over 10,000 sanitation workers. Data were extracted from peer-reviewed articles, and findings were synthesized using both qualitative and quantitative methods. The review highlighted that sanitation workers in developing countries faced a higher risk of infections, respiratory illnesses, and musculoskeletal disorders due to inadequate safety measures and lack of training. In contrast, sanitation workers in developed countries had better access to protective equipment and safety training. The study emphasized the need for universal safety protocols and global advocacy for worker rights.

Nyamathi and Marfatia (2018) explored the Psychosocial and Health Challenges Faced by Waste and Sanitation Workers in Nairobi, Kenya. The objective was to analyze the psychosocial and health challenges faced by waste and sanitation workers in informal settlements of Nairobi, Kenya. A total of 250 sanitation workers were selected using purposive sampling. The study used a mixed-method approach, collecting quantitative data through a structured questionnaire and qualitative data via in-depth interviews. Psychological stress and depression levels were assessed using standardized scales. The findings revealed that sanitation workers experienced high levels of psychological stress and depression due to poor working conditions, low pay, and lack of job security. Many workers reported feeling socially marginalized and faced stigma in their communities. The study recommended targeted mental health interventions and the implementation of social support programs to address these challenges.

Dowd and Hunter (2017) conducted a study titled Assessing the Health and Safety Concerns of Wastewater Treatment Plant Workers in the United Kingdom. The objective was to identify occupational hazards, assess knowledge of safety procedures, and evaluate the effectiveness of safety training programs for wastewater treatment plant workers. The study involved 150 workers from wastewater treatment plants across three major cities in the United Kingdom, selected using systematic random sampling. A quantitative research approach was used, with structured questionnaires and safety audits administered to collect data. In-depth interviews with supervisors were conducted to gain insights into safety protocols and challenges. The study found that although safety protocols were in place, compliance levels were inconsistent. Workers exposed to high levels of biological hazards reported skin irritations and respiratory issues. The study

recommended more frequent safety drills, refresher training, and routine health monitoring to mitigate these risks.

2.4 CRITICAL REVIEW OF LITERATURE

This chapter includes an extensive review of 50 studies relevant to sanitation workers, encompassing diverse aspects such as occupational health hazards, socio-economic status, gender disparities, psychosocial challenges, and policy interventions. By examining the objectives and findings of these studies, a comprehensive understanding of the conditions faced by sanitation workers in India and abroad has been developed. The 25 Indian studies consistently highlight issues such as caste- and gender-based discrimination, poor wages, absence of social protection, and widespread health problems including respiratory disorders, musculoskeletal strain, and skin infections, while intervention-focused works evaluate the limited impact of initiatives such as the Swatch Bharat Mission and biomedical waste management training programmers.

The 25 foreign studies provide a broader lens, addressing occupational injuries, mental health burdens, gendered vulnerabilities, stigma, lack of safety measures, and policy gaps across Africa, Pakistan, Bangladesh, Mexico, Sudan, Egypt, Kenya, the UK, and global reviews. Together, these works demonstrate that while sanitation workers remain integral to public health systems, they continue to face systemic neglect, inadequate protective equipment, and social marginalization.

The critical insights drawn from these studies underscore the urgent need to strengthen occupational safety measures, embed gender-sensitive and caste-sensitive policies, and ensure dignified livelihoods. Future research should particularly focus on evaluating government policies, technological innovations, and social welfare interventions, thereby providing sustainable

solutions that improve the health, safety, and recognition of sanitation workers globally.

2.5 CONCLUSION

The review of related literature provides a comprehensive understanding of the multidimensional challenges faced by sanitation workers both in India and abroad. The studies reviewed consistently reveal that sanitation work, while essential for maintaining public health and hygiene, continues to be associated with severe occupational, social and economic vulnerabilities. In the Indian context, issues such as caste-based discrimination, inadequate wages, lack of social protection and occupational health hazards are recurrent themes. International studies highlight those sanitation workers across low- and middle-income nations suffer from poor working conditions, exposure to hazardous waste and limited access to healthcare and safety equipment. The evidence emphasizes the need for comprehensive policy reforms, stronger enforcement of labor and safety laws, provision of adequate protective equipment and awareness programs that address stigma and discrimination. Future research must focus on developing inclusive frameworks that promote the dignity, safety and well-being of sanitation workers through sustainable, technology-driven and socially responsive interventions.

CHAPTER III

METHODOLOGY

3.1 INTRODUCTION

Designing a research study does not adhere to a single fixed blueprint rather it varies depending on several factors: (a) the nature of the research question (b) the overall purpose of the study (c) the guiding paradigm or approach and (d) the underlying philosophy, ontology and epistemology. This principle often referred to as "fitness for purpose" highlights that the primary aim of the research significantly influences both the design and methodology (Maykut & Morehouse, 2002).

In this chapter, key considerations are outlined to help transform a broad area of interest into something practical, researchable and feasible. To make research operational, it's important to carefully plan each stage of the process. With this foundation, the researcher is well-prepared to begin the study. The researcher considers a range of options, selecting only those compatible with the research aims (Bulletin of the Atomic Scientists, 1970). This leads to a tailored framework or blueprint that's practical for the specific research situation and actionable plan is established. The research process hinges on what the researcher aims to discover with design choices reflecting the research questions and overall purpose discussed earlier.

3. 2 RESEARCH METHODOLOGY

Research methodology refers to the overall systematic process involved in conducting a research study. It can be understood as the science of exploring how research is carried out. This process directs the researcher in undertaking tasks related to describing, explaining and predicting outcomes

during the study (Bhattacherjee, 2012). Methodology offers a structured approach to addressing research problems.

3.2.1 Method Adopted for the Present Study

A survey refers to the process of collecting data from a relatively large number of respondents at a particular point in time. This method includes interpretation, measurement, classification, evaluation, comparison and generalization, all intended to develop a comprehensive understanding of significant educational issues and to identify possible solutions (Geographic Information Systems and Science, 2011).

In this study, the investigators chose the survey method for educational research. Survey research examines both large and small populations by selecting and analyzing samples from the population to identify the incidence, distribution and interrelations of sociological and psychological variables (Adult Education Dissertation Abstracts, 1968). As a branch of social scientific research, survey research differs from status research by aiming for an accurate assessment of the characteristics of an entire population (Labor, 1964).

By using a random sample, researchers can often obtain information similar to that of a full census but at a lower cost, with greater efficiency and sometimes with greater accuracy. Survey research focuses on people and their vital information, beliefs, opinions, attitudes, motivations and behaviors. The present study aimed at determining the levels of Educational Status, Economic Status, Social Support, Physical Health and Mental Health has employed the survey method.

3.2.2 Reasons for Selecting Survey Method

The Survey Method holds significance for several reasons as follows;

- It offers a thorough understanding of underlying issues within the study area.
- It draws attention to needs that might otherwise go unnoticed.
- It supplies a wealth of information regarding the nature of educational phenomena.
- It enables the collection of data from a relatively large number of cases at a specific time.
- It focuses on generalized statistics for the entire population while also addressing individual characteristics.

3. 3 STEPS IN SURVEY METHOD

According to William Wireman (1985) the detailed steps in a survey method are as follows;

1. Planning
2. Development and application of sampling plan
3. Construction of questionnaire
4. Data collection
5. Translation of data
6. Data analysis
7. Conclusion and Reporting

3.3.1 Planning

A clear plan of action is essential to maintain the scientific rigor and objectivity of the study. This includes defining the problem, establishing operational definitions of variables and thoroughly reviewing and developing the survey design (Desimone, 2009).

3.3.2 Development and Application of Sampling Plan

Defining and formulating the geographical area, selecting the sample and establishing a detailed sampling procedure are crucial steps. These elements outline the scope and methodology of the study, ensuring that data collection is systematic and representative of the population within the specified area (Adult Education Dissertation Abstracts, 1968).

3.3.3 Construction of Research Tool

Interview schedules, questionnaires and similar instruments are common tools for investigation, tailored to each study's needs. If ready-made tools are unavailable, researchers should carefully design appropriate alternatives (Adult Education Dissertation Abstracts, 1968). This tool must also undergo pilot testing with a small sample to ensure effectiveness before broader application in the study.

3.3.4 Data Collection

Data collection was carried out from the targeted group of individuals or sources using the chosen research tool. The active involvement of respondents is essential to ensure the comprehensiveness and authenticity of the data, thereby providing a more accurate and complete representation of the study’s focus (Bautista & Wong, 2017).

3.3.5 Translation of Data

The processing of survey data begins with essential steps such as tabulation, where necessary and the development of category systems. These steps vary according to the scope of the survey and the nature of the data collected, ensuring that the material is systematically organized and technically

prepared for in-depth analysis (Larsen & Fondahl, 2015).

3.3.6 Data Analysis

Data analysis involves methods aimed at breaking down phenomena into their constituent parts to gain deeper insights into specific aspects. Statistical analysis primarily focuses on counting the number of units within various classes and subclasses (Adult Education Dissertation Abstracts, 1968). When quantitative data is collected, class totals are obtained, allowing for the calculation of arithmetic means for each category. These summary tables provide a foundation for further more detailed analysis of the data (Adult Education Dissertation Abstracts, 1968).

3.3.7 Conclusion and Reporting

After data is collected and analyzed, researchers are required to draw inferences and prepare a report. Interpretation helps uncover the relationships and processes reflected in the findings. The research report is a vital component as without it the study remains incomplete. Considering the relevance of the present study's topic, the investigator selected the survey method for data collection (Larsen & Fondahl, 2015).

3. 4 STATEMENT OF THE PROBLEM

Sanitary workers constitute an indispensable segment of society, as they are at the forefront of maintaining public health, cleanliness and hygiene. Their contributions ensure that waste is managed effectively, environments remain liveable and the spread of infectious diseases is minimized. Despite this critical role, sanitary workers often operate in difficult, unsafe and highly challenging conditions. The nature of their work requires them to handle hazardous waste, clean public spaces and work in environments where they

are regularly exposed to harmful substances. Their services though essential, remain undervalued and underappreciated.

One of the major challenges faced by sanitary workers is constant exposure to health risks. Their daily tasks often bring them into direct contact with biological waste, toxic chemicals and contaminated materials. This exposes them to infections, respiratory illnesses, skin diseases and other long-term health complications. The lack of adequate safety measures further intensifies these risks. In many instances, sanitary workers carry out their duties without the necessary personal protective equipment like gloves, masks, boots or uniforms. Even when such equipment is provided, it is often of poor quality, insufficient in quantity or not replaced regularly. Sanitary workers are left vulnerable to avoidable injuries and diseases that significantly reduce their quality of life.

Beyond the physical hazards, sanitary workers also grapple with financial insecurity. Despite the strenuous and hazardous nature of their labour, they are frequently underpaid with wages that do not reflect the importance of their work. In some contexts, they are employed on a contractual basis with little or no job security, limited access to healthcare and minimal opportunities for career advancement. These economic hardships often translate into poor living standards, further aggravating their vulnerability. The burden of low wages, coupled with the high cost of healthcare resulting from occupational illnesses, pushes many sanitary workers and their families into cycles of poverty.

The psychological toll of the profession also deserves attention. Sanitary workers often face significant social stigma and discrimination. Their work is looked down upon by society and they are frequently marginalized, excluded or treated as inferior. This deep-seated prejudice,

rooted in historical and cultural attitudes, erodes their dignity and sense of self-worth (Turner & Blackie, 2018) The constant experience of being undervalued, coupled with hazardous working conditions, contributes to mental health challenges such as stress, anxiety and depression. The stigma attached to their occupation extends to their families, perpetuating cycles of exclusion and reinforcing structural inequalities.

Although occupational health and safety standards have improved across various sectors, the plight of sanitary workers often remains overlooked. While industries; construction, healthcare or manufacturing have witnessed significant reforms in safety training, provision of protective equipment and awareness programs, sanitary work continues to lag behind. Limited access to proper training on safety procedures, combined with the lack of formal recognition of their professional contributions, keeps them on the margins of labour reforms (Chatterjee & Chatterjee, 2022)

The absence of policies that specifically address their needs further exacerbates their vulnerabilities. The invisibility of sanitary workers' struggles in research and policy discourse perpetuates neglect. The limited number of studies examining their lived experiences means that the multifaceted nature of their challenges is rarely captured in its entirety (Kandath, 2023). Without robust data and firsthand narratives, policymakers, employers and civil society lack the information needed to implement effective interventions. This gap in research restricts the possibility of identifying root causes and hinders the development of sustainable solutions aimed at improving their working and living conditions.

There is a pressing need to engage in an in-depth exploration of the challenges faced by sanitary workers. Such research should focus not only on their working environment and health risks but also on the socio-economic

and cultural factors that shape their lived experiences. Understanding their perspectives can help identify structural inequalities, discriminatory practices and policy gaps that perpetuate their hardships.

The present study seeks to contribute to this discourse by investigating the challenges encountered by sanitary workers with special attention to their working conditions, health hazards, economic vulnerabilities and social marginalization. The findings aim to provide valuable insights for policymakers, employers, labour unions and advocacy groups. By highlighting the voices and experiences of sanitary workers, this study aspires to guide the development of targeted interventions that prioritize their safety, dignity and well-being.

Recognizing and addressing the struggles of sanitary workers is not only a matter of social justice but also essential for strengthening public health systems and maintaining community hygiene. Improving their working conditions, ensuring fair wages, providing adequate training and protective measures and combating social stigma are necessary steps toward creating an equitable society. Empowering sanitary workers through policy reforms and public awareness can pave the way for their inclusion and dignity ensuring that their critical contributions to society are acknowledged and valued.

3.5 TITLE OF THE STUDY

The study is entitled as *"An Explorative Study on the Challenges of Sanitary Workers".*

3.6 OPERATIONAL DEFINITIONS OF IMPORTANT KEY TERMS

An Explorative Study

An explorative study refers to a research approach used when a topic or problem is not well understood. It aims to explore new ideas, generate insights and identify underlying patterns. Such studies provide direction, refine research questions and lay the foundation for more detailed investigations (McKenney & Reeves, 2018).

Challenges

Challenges refer to difficult situations, obstacles or problems that require effort, skill or determination to overcome. They may arise in personal, social, or professional contexts and often test one's abilities, resilience and problem-solving capacity while striving toward goals.

Sanitary Workers

Sanitary workers are individuals responsible for maintaining cleanliness and hygiene in communities. They manage waste collection, disposal and cleaning of public spaces often working under hazardous conditions. Their efforts are vital for safeguarding public health and preventing disease outbreaks.

3.7 OBJECTIVES OF THE STUDY

Section – I

Percentage Analysis

1. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health

and mental health of sanitary workers with reference to type of family.

2. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to marital status.
3. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to educational qualification.
4. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to nature of residence.
5. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to type of house.
6. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to monthly income of family.
7. To find out the level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to number of children in the family.

Section – II

Differential Analysis

8. To find out significant difference, if any, between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of family.
9. To find out significant difference, if any, between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of family.
10. To find out significant difference, if any, between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to nature of residence.

Section – III

Analysis of Variance

11. To find out significant difference, if any, among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to educational qualification.
12. To find out significant difference, if any, among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of house.
13. To find out significant difference, if any, among sanitary workers under the dimensions: educational awareness, economic status, social

participation, social inclusion, social support, physical health and mental health with reference to number of children in the family.

Section – IV

Associational Analysis

14. To find out significant association, if any, among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to income of the family.

3.8 HYPOTHESES

Section – I

Percentage Analysis

1. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to type of family is moderate.
2. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to marital status is moderate.
3. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to educational qualification is moderate.
4. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and

mental health of sanitary workers with reference to nature of residence is moderate.

5. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to type of house is moderate.
6. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to monthly income of family is moderate.
7. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to number of children in the family is moderate.

Section – II

Differential Analysis

8. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of family.
9. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to marital status.
10. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social

participation, social inclusion, social support, physical health and mental health with reference to nature of residence.

Section – III

Analysis of Variance

11. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to educational qualification.
12. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of house.
13. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to number of children in the family.

Section IV

Associational Analysis

14. There is no significant association among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to monthly income of the family.

3.9 POPULATION FOR THE STUDY

The population for the present study is the sanitary workers residing at Tirunelveli and Thoothukudi districts.

3.10 SAMPLE FOR THE STUDY

The study was conducted in Tirunelveli and Thoothukudi districts. Among the sanitary workers in Tirunelveli and Thoothukudi districts, 110 were selected randomly for the present investigation.

3.11. DISTRIBUTION OF THE SAMPLE

Table 3.1

Area-wise distribution of the sample

S.No.	Name of the Areas	Number of Respondents
1	Rajendranagar	7
2	Perumalpuram	5
3	Samathanapuram	6
4	Palai Market	5
5	Highground	4
6	NGO Colony	6
7	Kamarajarnagar	5
8	Thiyakarajanagar	6
9	KTC Nagar	6
10	Jothipuram	7

11	Shanmugapuram	4
12	CGE Colony	5
13	Inigonagar	7
14	Boltenpuram	6
15	Siluvaipatti	4
16	Alagapuri	7
17	Komaspuram	5
18	Toovipuram	6
19	Therespuram	5
20	Caldwell Colony	4
Total		**110**

Table 3.2

Distribution of the sample with respect to type of family

Category	Number
Joint	12
Nuclear	98
Total	110

Figure 3.1

Distribution of the sample with respect to type of family

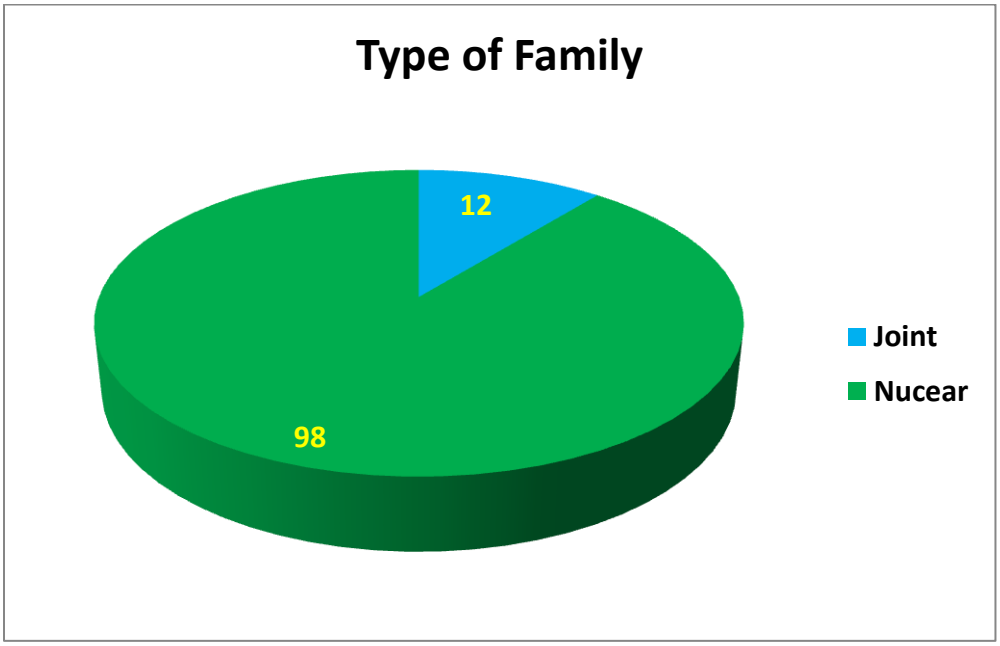


Table 3.4

Distribution of the sample with respect to marital status

Category	Number
Married	96
Unmarried	14
Total	110

Figure 3.2

Distribution of the sample with respect to marital status

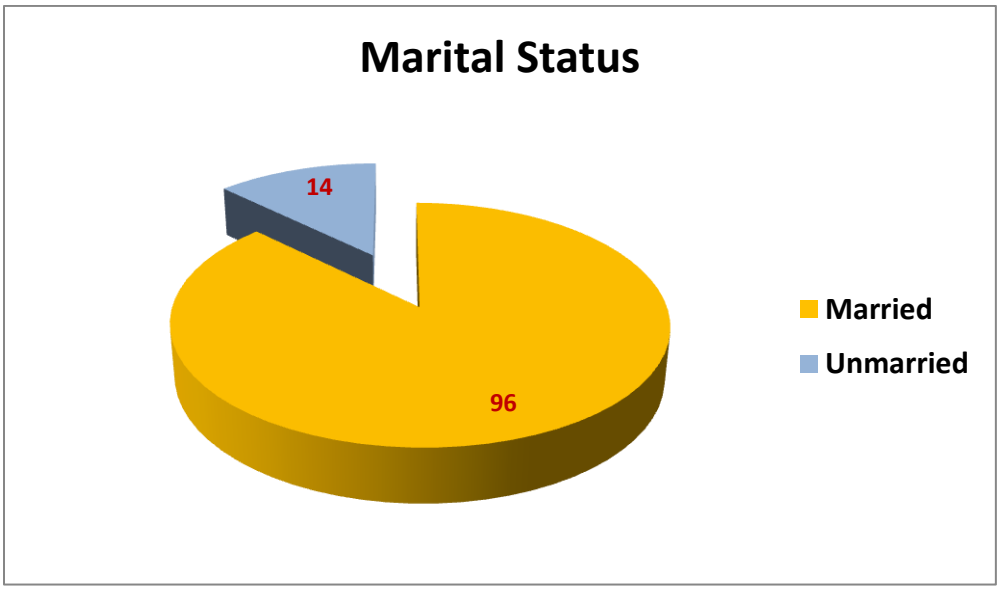


Table 3.5

Distribution of the sample with respect to educational qualification

Category	Number
Illiterate	48
Elementary Level	52
Secondary Level	7
Higher Secondary Level	3
Total	110

Figure 3.3

Distribution of the sample with respect to educational qualification

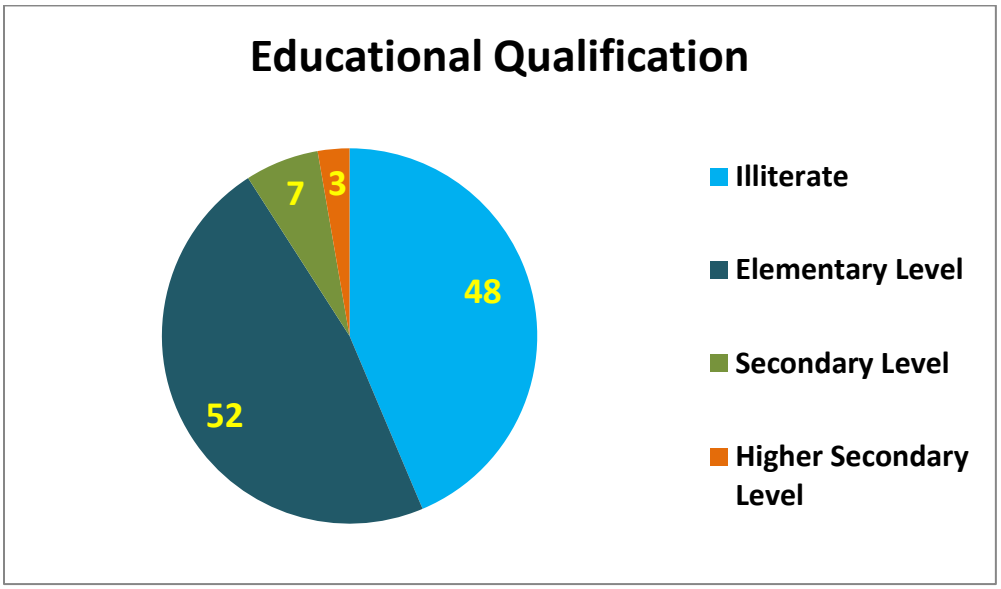


Table 3.6

Distribution of the sample with respect to nature of residence

Category	Number
Owned House	21
Rented House	99
Total	110

Figure 3.4

Distribution of the sample with respect to nature of residence

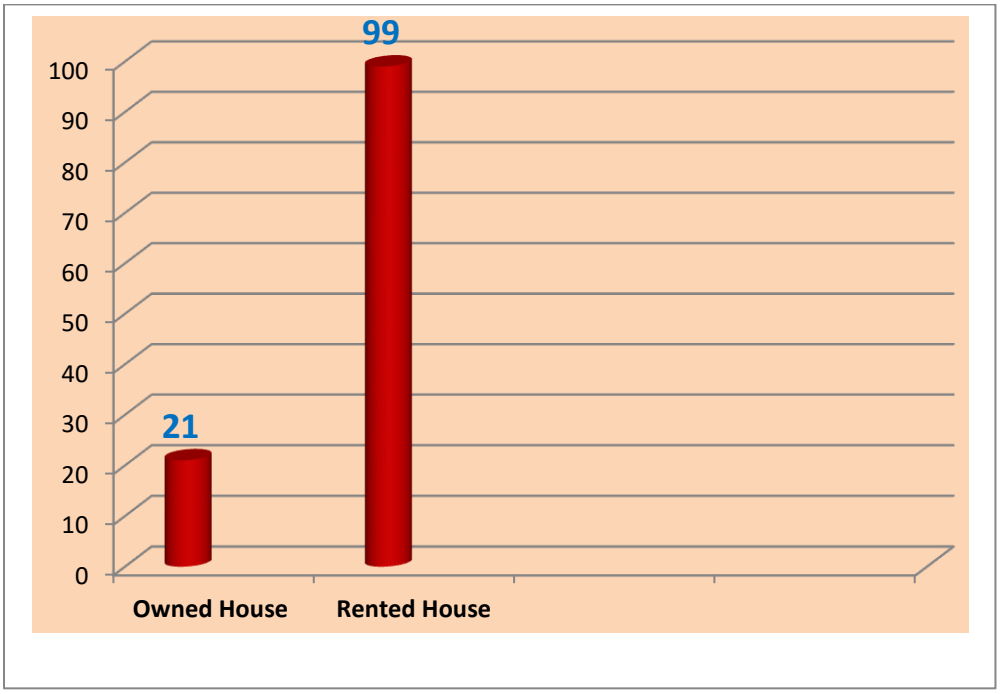


Table 3.7

Distribution of the sample with respect to type of house

Category	Number
Tent	21
Thatched	71
Concrete	18
Total	110

Figure 3.6

Distribution of the sample with respect to type of house

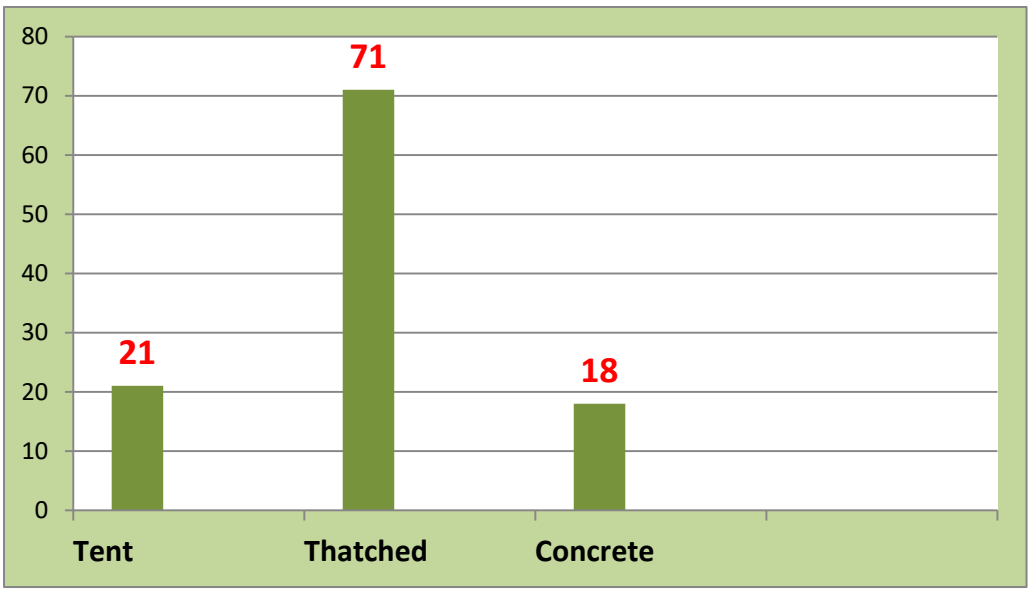


Table 3.8

Distribution of the sample with respect to monthly income of family

Category	Number
Rs.5000 & below	5
Rs.5001-10,000	25
Rs.10,001- 20,000	72
Rs.20,001 & above	8
Total	110

Figure 3.7

Distribution of the sample with respect to monthly income of family

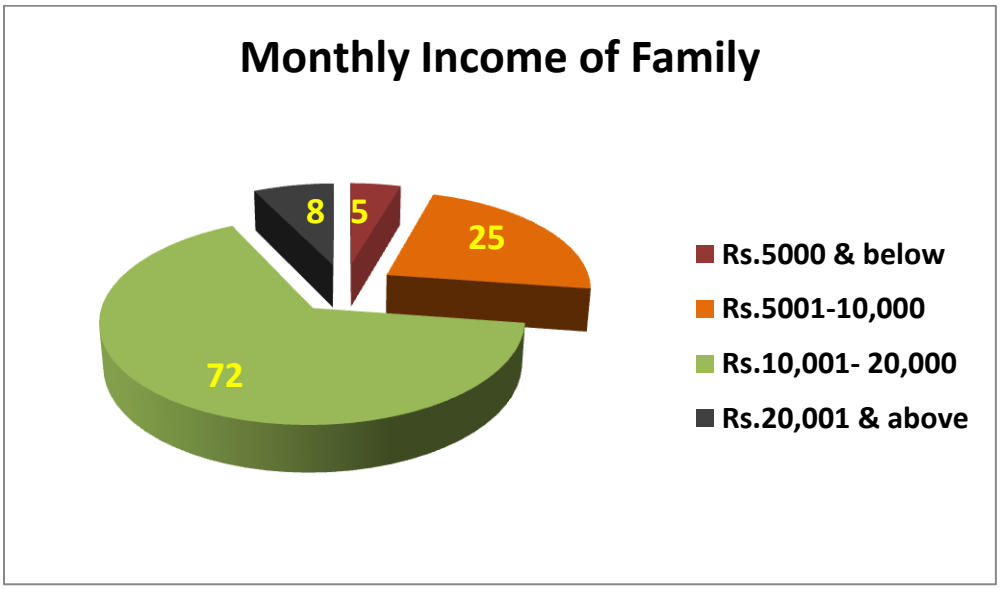


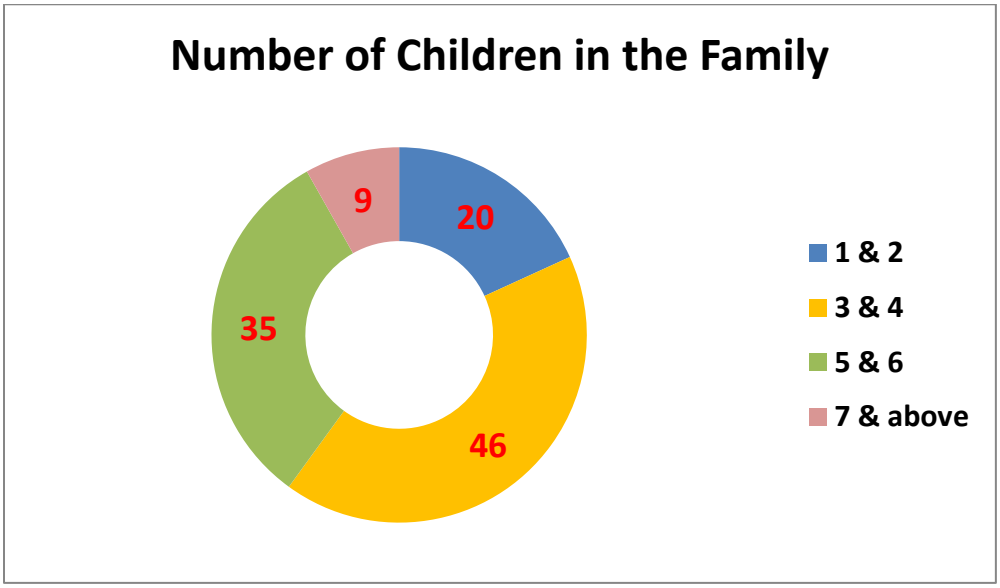
Table 3.9

Distribution of the sample with respect to number of children in the Family

Category	Number
1 & 2	20
3 & 4	46
5 & 6	35
7 & above	9
Total	110

Figure 3.8

Distribution of the sample with respect to number of children in the Family



3.12 TOOL FOR THE PRESENT STUDY

In this present study, the investigators have used self-made tool to measure educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers in Thoothukudi and Tirunelveli districts. It was developed by the investigators. The self-made tool is; Questionnaire for An Explorative Study on the Challenges of Sanitary Workers.

3.13 TOOL CONSTRUCTION

Questionnaire for an Explorative Study on the Challenges of Sanitary Workers.

3.13.1 Development of the Tool

In the present study after a thorough survey on the available tool, the investigators have to go for a suitable tool that will measure educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers in Thoothukudi and Tirunelveli districts. The major steps followed in the construction of this tool are described under different heads.

3.14 STEPS IN CONSTRUCTION OF TOOL

i) Planning of the tool
ii) Item writing
iii) item editing
iv) Arrangement of items
v) Preliminary try out
vi) Draft check list
vii) Pilot study
viii) Final try out
ix) Scoring
x) Establishing Reliability and Validity
xi) Final form of tool

3.14.1 Planning of the Test

The tool is to measure the educational status, economic status, social support, physical health and mental health of sanitary workers in Thoothukudi and Tirunelveli districts. It was developed by the investigators. The self-made tool is; Questionnaire for An Explorative Study on the Challenges of Sanitary Workers. Due considerations were given to the variables tested and to the different aspects involved.

3.14.2 Item Writing

An important step in constructing any research tool is the development of suitable items. After a thorough and careful review of the available literature, the investigators gathered materials and prepared the items. The Questionnaire includes the critical features of the required data and the evaluator must select one.

3.14.3 Item Editing

Each item in the tool was designed based on the respondent's psychology. Item editing involves checking and thoroughly scrutinizing the items. The items were reviewed by experts for necessary modifications and any ambiguous items were rewritten in a clear and meaningful manner (Bhattacherjee, 2012).

3.14.4 Arrangement of Items

The investigators read all the statements carefully. All the items were then arranged based on the nature of statements. The tool for the present study was constructed by the investigators under the following dimensions;

1. Educational Awareness
2. Economic Status

3. Social Participation
4. Social Inclusion
5. Social Support
6. Physical Health
7. Mental Health

3.14.5 Preliminary Try Out

A preliminary tryout was made to fix out the weakness and workability of the items. The difficulties in responding the items were noted. This step helped the investigators to modify the certain variables which were vague and questionable (Fraenkel & Wallen, 2005). For this purpose, the check list was used to measure educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers in Thoothukudi and Tirunelveli districts.

3.14.6 Draft

The first draft was prepared by printing the items along with options for respondents to mark their answers. The layout was designed to ensure clarity and ease of understanding for the respondents. The draft was then reviewed to identify any errors in formatting, wording or organization (Iarossi, 2006). Feedback from experts and peers was incorporated to enhance the overall quality and reliability of the tool. This iterative process aimed to create scientifically sound instrument for data collection.

3.14.7 Pilot Study

The pilot study was conducted with 30 respondents selected from various areas in the Thoothukudi and Tirunelveli district using a simple random sampling technique. The primary objective of the pilot study was to assess the clarity, feasibility and reliability of the tool (Holmboe & Durning, 2023).

Based on the responses and feedback from the participants, necessary revisions were made to refine the items and improve the tool's effectiveness.

3.14.8 Final Try Out

Totally 110 sanitary workers in Thoothukudi and Tirunelveli districts were selected as the sample.

3.15 ESTABLISHING RELIABILITY AND VALIDITY

3.15.1 Content Validity

To ensure content validity, the tool was submitted to a panel of experts in the field of education for their evaluation of the items' relevance and appropriateness. The experts' feedback was used to establish the content validity of the tool.

3.15.2 Item Validity

The pilot study aimed to establish the item validity of the research tool. It was administered to 30 sanitary workers who were randomly selected. Items in the check list assessing the educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers were chosen using item-total correlation. The investigators worked to refine the tool by identifying the most appropriate items for inclusion in the final version. Item analysis was conducted to determine the correlation of each item and selection was based on the corresponding correlation values. The item was selected from 0.356 “r” value. Among the 35 items, all the items were selected for the present study.

Table 4.14

Correlation value for the items in the questionnaire for sanitary workers

Items	'r' value	Remarks
1	0.4209	S
2	0.3901	S
3	0.3968	S
4	0.5221	S
5	0.4861	S
6	0.5624	S
7	0.5368	S
8	0.4358	S
9	0.4951	S
10	0.3698	S
11	0.5368	S
12	0.8621	S
13	0.6213	S
14	0.4167	S
15	0.5368	S
16	0.6625	S
17	0.4350	S
18	0.5264	S
19	0.5123	S
20	0.7258	S
21	0.5730	S
22	0.5001	S
23	0.3924	S
24	0.5233	S

25	0.7751	S
26	0.5320	S
27	0.4005	S
28	0.6513	S
29	0.5900	S
30	0.4984	S
31	0.5327	S
32	0.8240	S
33	0.5089	S
34	0.4737	S
35	0.7099	S

NS - Not Selected **S** - Selected

3.15.3 Reliability

For establishing the reliability of the tool, test-retest method was followed. For this draft tool was administrated with 30 sanitary workers randomly selected and observed. After 15 days the questionnaire was given to the same set of the sanitary workers. Then the product moment co-efficient of correlation was found. It is 0.69. Thus, the tool is taken as reliable.

3.16 SCORING

Agreement Points	**Yes**	**No**
Questions	1	0

(The maximum score is 35 and the minimum score is 0)

3.17 ADMINISTRATION OF THE TOOL

The investigators personally visited the sanitary workers residing in 20 different areas of Thoothukudi and Tirunelveli districts, meeting them both at their workplaces and in their homes. They took time to build rapport with the respondents and thoroughly explained the purpose and details of the checklist. After clarifying doubts, the investigators carefully recorded the information provided by the workers. To ensure the accuracy and completeness of the data, they revisited certain respondents when necessary. Finally, all the data collected from the respondents was compiled and organized systematically for further analysis.

3.18 BACKGROUND VARIABLES

The investigator has taken 7 background variables for the present study. They are as follows;

1. Type of Family : Joint / Nuclear
2. Educational Qualification : Illiterate / Elementary Level / Secondary Level / Higher Secondary Level
3. Marital Status : Married / Unmarried
4. Type of House : Tent / Thatched / Concrete
5. Nature of Residence : Owned House / Rented House
6. Monthly Income of Family : Rs.5000&below / Rs.5001-10,000 / Rs.10,001 - 20,000 / Rs.20,001&above
7. Number of Children in the Family :1 &2 / 3 &4 / 5&6 / 7& above

3.19 STATISTICAL TECHNIQUES USED

The data collected from the respondents by administered the tool was processed with the help of the following statistics;

- Percentage Analysis
- Differential Analysis ('t' test)
- Analysis of Variance (F-test)

3.20 DELIMITATIONS

- The present investigation had been confined to sanitary workers those who are residing in Tirunelveli and Thoothukudi districts only.
- The data were collected from Rajendranagar, Perumalpuram, Samathanapuram, Palai Market, Highground, NGO Colony, Kamarajarnagar, Thiyakarajanagar, KTC Nagar, Jothipuram, Shanmugapuram, CGE Colony, Inigonagar, Boltenpuram, Siluvaipatti, Alagapuri, Komaspuram, Toovipuram, Therespuram and Caldwell Colony.

3.21 CONCLUSION

This chapter explains the methodology adopted for the study, detailing the approaches used for data collection and the framework applied for data analysis. The investigators outlined the procedures followed to ensure the reliability and validity of the research process. The collected data was carefully organized and analyzed through appropriate statistical techniques with the results presented in tabular form for clarity and better understanding. These findings were subsequently examined and interpreted critically and their implications are discussed in depth in the next chapter.

CHAPTER IV
ANALYSIS OF DATA

4.1 1INTRODUCTION

Data analysis is an important part of research and one of the most difficult tasks. It is a step that many researchers find hard to complete on their own. The reason is that analysis requires complex thinking and technical skills. It is not just done at the end of a study but is needed throughout the process. Analysis starts when the researcher chooses the research problem. It continues when they decide on the correct methods to use. It is also crucial when understanding results and forming conclusions. Data analysis means looking at data in an organized and logical way. The data must be arranged and grouped before it can be studied. Researchers then examine the features of the subject they are studying. These patterns help explain how the variables are related. Without this careful process the data remains raw and unhelpful. It will not provide useful answers or clear understanding. Good analysis turns data into knowledge that can add value to research.

The process of data analysis requires a combination of critical thinking and technical proficiency. It involves careful evaluation of data to ensure accuracy and reliability in research outcomes. Researchers must examine the relationships between variables with precision. This enables the identification of patterns, trends and correlations that help explain the phenomenon under investigation. Analysis should not be viewed as a single step in the research sequence. Rather, it is a continuous element that runs throughout the study. It begins during the formulation of the research problem. It continues during data collection and remains essential during the interpretation of findings. Effective analysis ensures robustness, validity and overall quality of research work.

These insights contribute to addressing key research questions. They also help advance understanding within the relevant field of study. Thus, analysis is indispensable for generating reliable knowledge and meaningful academic contributions. This chapter examines the level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers in Thoothukudi and Tirunelveli districts. The aim is to understand how these factors relate to the challenges they face. Data analysis here means carefully studying the collected and organized information. It is done to find out the real facts and meanings hidden within the data. The process involves breaking complex issues into simpler parts. These parts are then examined individually to understand their details. Through this approach, patterns and connections between different factors can be identified. This helps to explain the challenges more clearly.

The main goal of this study is to assess the Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health, and Mental Health of Sanitary Workers in Tirunelveli and Thoothukudi districts considering their background characteristics. To collect the necessary information, a suitable research tool was used. The study included a sample of 110 sanitary workers from Tirunelveli and Thoothukudi districts. The collected data were processed using various quantitative methods. Key statistical techniques such as percentage analysis, t-test, F-test and $\chi 2$-test were applied. These methods helped compare groups and measure differences accurately. The SPSS software package was used to perform all statistical analyses. The findings provide a detailed picture of the workers' conditions. They also help in understanding how different factors affect their lives.

Section I

It deals with the level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers in Tirunelveli and Thoothukudi district with respect to Type of Family, Marital Status, Education, Nature of Residence, Type of House, Monthly Income of the Family and Number of Children in the Family.

Section II

Among sanitary workers, significant differences may exist in Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health based on Family Type, Marital Status and Residence Type.

Section III

Under the following dimensions, it examines significant differences among sanitary workers in Tirunelveli and Thoothukudi districts, Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health in relation to Education, Type of House, Monthly Income of the Family and Number of Children in the Family.

Section IV

It deals with the significant association among the sanitary workers under the dimensions: Educational awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to income of the family.

4.2 DATA ANALYSIS

4.2.1 PERCENTAGE ANALYSIS

Null Hypothesis 1

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Type of Family is moderate.

Table 4.1

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Type of Family.

Background variable	Dimensions	Categories	No	Low		Moderate		High	
				No	%	No	%	No	%
Type of Family	Educational Awareness	Joint	12	5	41.7	7	58.3	0	0.0
		Nuclear	98	11	11.2	87	88.8	0	0.0
	Economic Status	Joint	12	1	8.3	10	83.3	1	8.3
		Nuclear	98	2	2.0	76	77.6	20	20.4
	Social Participation	Joint	12	0	0.0	11	91.7	1	8.3
		Nuclear	98	1	1.0	95	96.9	2	2.0
	Social Inclusion	Joint	12	7	58.3	4	33.3	1	8.3
		Nuclear	98	62	63.3	29	29.6	7	7.1
	Social Support	Joint	12	6	50.0	6	50.0	0	0.0
		Nuclear	98	66	67.3	25	25.5	7	7.1
	Physical	Joint	12	3	25.0	9	75.0	0	0.0

	Health	Nuclear	98	29	29.6	63	64.3	6	6.1
	Mental	Joint	12	2	16.7	7	58.3	3	25.0
	Health	Nuclear	98	16	16.3	67	68.4	15	15.3

It is inferred from the above table that irrespective of the Type of Family, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 2

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Marital Status is moderate.

Table 4.2

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Marital Status

Back ground variable	Dimensions	Categories	No	Low		Moderate		High	
				No	%	No	%	No	%
Marital status	Educational Awareness	Married	96	13	13.5	83	86.5	0	0.0
		Unmarried	14	3	21.4	11	78.6	0	0.0
	Economic Status	Married	96	3	3.1	77	80.2	16	16.7
		Unmarried	14	0	0.0	9	64.3	5	35.7
	Social Participation	Married	96	1	1.0	92	95.8	3	3.1
		Unmarried	14	0	0.0	14	100	0	0.0
	Social Inclusion	Married	96	61	63.5	28	29.2	7	7.3
		Unmarried	14	8	57.1	5	35.7	1	7.1
	Social Support	Married	96	64	66.7	26	27.1	6	6.3
		Unmarried	14	8	57.1	5	35.7	1	7.1
	Physical Health	Married	96	30	31.3	60	62.5	6	6.3
		Unmarried	14	2	14.3	12	85.7	0	0.0

	Mental	Married	96	17	17.7	63	65.6	16	16.7
	Health	Unmarried	14	1	7.1	11	78.6	2	14.3

It is inferred from the above table that irrespective of Marital Status, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 3

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Educational Qualification is moderate.

Table 4.3

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Educational Qualification

Background variable	Dimensions	Categories	No	Low		Moderate		High	
				No	%	No	%	No	%
Educational Qualification	Educational Awareness	Illiterate	48	7	14.6	41	85.4	0	0.0
		Ele. Level	52	9	17.3	43	82.7	0	0.0
		Sec. Level	7	0	0.0	7	100	0	0.0
		Hr.Sec.Level	3	0	0.0	3	100	0	0.0
	Economic Status	Illiterate	48	0	0.0	38	79.2	10	20.8
		Ele. Level	52	3	5.8	42	80.8	7	13.5
		Sec.Level	7	0	0.0	3	42.9	4	57.1
		Hr.Sec.Level	3	0	0.0	3	100	0	0.0
	Social Participation	Illiterate	48	1	2.1	44	91.7	3	6.3
		Ele.Level	52	0	0.0	52	100	0	0.0
		Sec.Level	7	0	0.0	7	100	0	0.0
		Hr.Sec.Level	3	0	0.0	3	100	0	0.0
	Social Inclusion	Illiterate	48	30	62.5	17	35.4	1	2.1
		Ele. Level	52	33	63.5	14	26.9	5	9.6

	Sec.Level	7	5	71.4	1	14.3	1	14.3
	Hr. Sec. Level	3	1	33.3	1	33.3	1	33.3
	Illiterate	48	35	72.9	11	22.9	2	4.2
Social	Ele. Level	52	31	59.6	17	32.7	4	7.7
Support	Sec.Level	7	3	42.9	3	42.9	1	14.3
	Hr. Sec. Level	3	3	100	0	0.0	0	0.0
	Illiterate	48	13	27.1	32	66.7	3	6.3
Physical	Ele. Level	52	13	25.0	38	73.1	1	1.9
Health	Sec.Level	7	3	42.9	2	28.6	2	28.6
	Hr. Sec. Level	3	3	100	0	0.0	0	0.0
	Illiterate	48	10	20.8	35	72.9	3	6.3
Mental	Ele. Level	52	5	9.6	35	67.3	12	23.1
Health	Sec.Level	7	2	28.6	2	28.6	3	42.9
	Hr. Sec. Level	3	1	33.3	2	66.7	0	0.0

It is inferred from the above table that irrespective of Educational Qualification, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 4

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Nature of Residence is moderate.

Table 4.4

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Nature of Residence

Back ground variable	Dimensions	Categories	No	Low		Moderate		High	
				No	%	No	%	No	%
Nature of residence	Educational Awareness	Owned House	21	1	4.8	20	95.2	0	0.0

	Rented House	99	15	16.9	74	83.1	0	0.0
Economic Status	Owned House	21	0	0.0	18	85.7	3	14.3
	Rented House	99	3	3.4	68	76.4	18	20.2
Social Participation	Owned House	21	1	4.8	19	90.5	1	4.8
	Rented House	99	0	0.0	87	97.8	2	2.2
Social Inclusion	Owned House	21	14	66.7	7	33.3	0	0.0
	Rented House	99	55	61.8	26	29.2	8	9.0
Social Support	Owned House	21	17	81.0	4	19.0	0	0.0
	Rented House	99	55	61.8	27	30.3	7	7.9
Physical Health	Owned House	21	7	33.3	13	61.9	1	4.8
	Rented House	99	25	28.1	59	66.3	5	5.6
Mental Health	Owned House	21	4	19.0	15	71.4	2	9.5
	Rented House	99	14	15.7	59	66.3	16	18.0

It is inferred from the above table that irrespective of Nature of Residence, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 5

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Type of House is moderate.

Table 4.5

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Type of House

Back ground variable	Dimensions	Categories		Low		Moderate		High	
			No	No	%	No	%	No	%
Type of House	Educational Awareness	Tent	21	5	23.8	16	76.2	0	0.0
		Thatched	71	10	14.1	61	85.9	0	0.0
		Concrete	18	1	5.6	17	94.4	0	0.0
	Economic Status	Tent	21	0	0.0	15	71.4	6	28.6
		Thatched	71	3	4.2	57	80.3	11	15.5
		Concrete	18	0	0.0	14	77.8	4	22.2
	Social Participation	Tent	21	0	0.0	20	95.2	1	4.8
		Thatched	71	1	1.4	68	95.8	2	2.8
		Concrete	18	0	0.0	18	100	0	0.0
	Social Inclusion	Tent	21	8	38.1	10	47.6	3	14.3
		Thatched	71	47	66.2	21	29.6	3	4.2
		Concrete	18	14	77.8	2	11.1	2	11.1
	Social Support	Tent	21	15	71.4	3	14.3	3	14.3
		Thatched	71	43	60.6	24	33.8	4	5.6
		Concrete	18	14	77.8	4	22.2	0	0.0
	Physical Health	Tent	21	8	38.1	12	57.1	1	4.8
		Thatched	71	20	28.2	48	67.6	3	4.2
		Concrete	18	4	22.2	12	66.7	2	11.1
	Mental Health	Tent	21	5	23.8	13	61.9	3	14.3
		Thatched	71	12	16.9	45	63.4	14	19.7
		Concrete	18	1	5.6	16	88.9	1	5.6

It is inferred from the above table that irrespective of Type of House, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 6

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Family Monthly Income is moderate**.**

Table 4.6

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Family Monthly Income

Background variable	Dimensions	Categories		Low		Moderate		High	
			No	No	%	No	%	No	%
Monthly Income	Educational Awareness	Rs.5000&below	5	3	60.0	2	40.0	0	0.0
		Rs.5001-10,000	25	4	16.0	21	84.0	0	0.0
		Rs.10,001- 20,000	72	9	12.5	63	87.5	0	0.0
		Rs.20,001&above	8	0	0.0	8	100	0	0.0
	Economic Status	Rs.5000&below	5	0	0.0	4	80.0	1	20.0
		Rs.5001-10,000	25	0	0.0	18	72.0	7	28.0
		Rs.10,001- 20,000	72	3	4.2	61	84.7	8	11.1
		Rs.20,001&above	8	0	0.0	3	37.5	5	62.5
	Social Participation	Rs.5000&below	5	0	0.0	5	100	0	0.0
		Rs.5001-10,000	25	1	4.0	24	96.0	0	0.0
		Rs.10,001- 20,000	72	0	0.0	69	95.8	3	4.2
		Rs.20,001&above	8	0	0.0	8	100	0	0.0
	Social Inclusion	Rs.5000&below	5	3	60.0	2	40.0	0	0.0
		Rs.5001-10,000	25	17	68.0	7	28.0	1	4.0
		Rs.10,001- 20,000	72	43	59.7	22	30.6	7	9.7
		Rs.20,001&above	8	6	75.0	2	25.0	0	0.0

	Social Support	Rs.5000&below	5	5	100	0	0.0	0	0.0
		Rs.5001-10,000	25	20	80.0	5	20.0	0	0.0
		Rs.10,001- 20,000	72	42	58.3	23	31.9	7	9.7
		Rs.20,001&above	8	5	62.5	3	37.5	0	0.0
	Physical Health	Rs.5000&below	5	0	0.0	4	80.0	1	20.0
		Rs.5001-10,000	25	12	48.0	13	52.0	0	0.0
		Rs.10,001- 20,000	72	16	22.2	52	72.2	4	5.6
		Rs.20,001&above	8	4	50.0	3	37.5	1	12.5
	Mental Health	Rs.5000&below	5	1	20.0	3	60.0	1	20.0
		Rs.5001-10,000	25	2	8.0	16	64.0	7	28.0
		Rs.10,001- 20,000	72	13	18.1	51	70.8	8	11.1
		Rs.20,001&above	8	2	25.0	4	50.0	2	25.0

It is inferred from the above table that irrespective of Family Monthly Income, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

Null Hypothesis 7

The level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental health of sanitary workers with reference to Number of Children is moderate.

Table 4.7

Level of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Number of Children.

Back ground variable	Dimensions	Categories	No	Low		Moderate		High	
				No	%	No	%	No	%
	Educational Awareness	1 &2	20	2	10.0	18	90.0	0	0.0
		3 &4	46	7	15.2	39	84.8	0	0.0

Number of Children		5&6	35	6	17.1	29	82.9	0	0.0
		7& above	9	1	11.1	8	88.9	0	0.0
	Economic Status	1 &2	20	0	0.0	14	70.0	6	30.0
		3 &4	46	1	2.2	39	84.8	6	13.0
		5&6	35	2	5.7	26	74.3	7	20.0
		7& above	9	0	0.0	7	77.8	2	22.2
	Social Participation	1 &2	20	0	0.0	19	95.0	1	5.0
		3 &4	46	0	0.0	46	100	0	0.0
		5&6	35	1	2.9	32	91.4	2	5.7
		7& above	9	0	0.0	9	100	0	0.0
	Social Inclusion	1 &2	20	13	65.0	5	25.0	2	10.0
		3 &4	46	26	56.5	16	34.8	4	8.7
		5&6	35	22	62.9	11	31.4	2	5.7
		7& above	9	8	88.9	1	11.1	0	0.0
	Social Support	1 &2	20	14	70.0	5	25.0	1	5.0
		3 &4	46	28	60.9	13	28.3	5	10.9
		5&6	35	24	68.6	10	28.6	1	2.9
		7& above	9	6	66.7	3	33.3	0	0.0
	Physical Health	1 &2	20	6	30.0	13	65.0	1	5.0
		3 &4	46	11	23.9	33	71.7	2	4.3
		5&6	35	13	37.1	19	54.3	3	8.6
		7& above	9	2	22.2	7	77.8	0	0.0
	Mental Health	1 &2	20	3	15.0	15	75.0	2	10.0
		3 &4	46	8	17.4	29	63.0	9	19.6
		5&6	35	5	14.3	26	74.3	4	11.4
		7& above	9	2	22.2	4	44.4	3	33.3

It is inferred from the above table that irrespective of Number of Children, the level of Educational Awareness, Economic Status, Social Participation, Physical Health and Mental Health are moderate and Social Inclusion and Social Support are low in nature.

4.2.2 DIFFERENTIAL ANALYSIS

Null Hypothesis 8

There is no significant difference between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Type of Family.

Table 4.8

Difference between Sanitary Workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Type of Family

Dimension	Category	N	Mean	S.D.	Calculated t-value	Remarks at 5% level
Educational Awareness	Joint	12	3.83	0.835	2.547	S
	Nuclear	98	4.38	0.681		
Economic Status	Joint	12	1.67	0.778	1.018	NS
	Nuclear	98	1.90	0.739		
Social Participation	Joint	12	3.25	1.055	1.063	NS
	Nuclear	98	2.99	0.767		
Social Inclusion	Joint	12	2.25	0.965	0.295	NS
	Nuclear	98	2.16	0.960		
Social Support	Joint	12	2.42	0.669	1.009	NS
	Nuclear	98	2.20	0.837		
Physical Health	Joint	12	3.00	0.953	0.034	NS
	Nuclear	98	2.99	1.144		
Mental Health	Joint	12	1.92	1.165	1.027	NS
	Nuclear	98	1.58	1.054		
Total	Joint	12	18.33	2.348	0.177	NS
	Nuclear	98	18.20	2.667		

(At 5% level of significance the table value of ‘t’ is 1.98)

It is inferred from the above table that the sanitary workers in joint family and nuclear family are not significantly different in Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health and significantly different in Educational Awareness.

Null Hypothesis 9

There is no significant difference between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of Sanitary workers with reference to Marital Status.

Table 4.9

Difference between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Marital Status

Dimension	Category	N	Mean	S.D.	Calculated t-value	Remarks at 5% level
Educational Awareness	Married	96	4.30	0.698	0.616	NS
	Unmarried	14	4.43	0.852		
Economic Status	Married	96	1.84	0.730	1.071	NS
	Unmarried	14	2.07	0.829		
Social Participation	Married	96	3.02	0.794	0.090	NS
	Unmarried	14	3.00	0.877		
Social Inclusion	Married	96	2.19	0.933	0.423	NS
	Unmarried	14	2.07	1.141		
Social Support	Married	96	2.23	0.801	0.063	NS
	Unmarried	14	2.21	0.975		
Physical Health	Married	96	2.93	1.136	1.816	NS
	Unmarried	14	3.43	0.938		
Mental Health	Married	96	1.63	1.098	1.095	NS
	Unmarried	14	1.57	0.852		

(At 5% level of significance the table value of 't' is 1.98)

It is inferred from the above table that the sanitary workers belonging to the categories of married and unmarried are not significantly different in Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health.

Null Hypothesis 10

There is no significant difference between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Nature of Residence.

Table 4.10

Difference between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health of sanitary workers with reference to Nature of Residence.

Dimension	Category	N	Mean	S.D.	Calculated t-value	Remarks at 5% level
Educational Awareness	Owned House	21	4.52	0.602	1.665	NS
	Rented House	89	4.27	0.735		
Economic Status	Owned House	21	1.90	0.625	0.249	NS
	Rented House	89	1.87	0.772		
Social Participation	Owned House	21	3.05	0.865	0.186	NS
	Rented House	89	3.01	0.790		
Social Inclusion	Owned House	21	2.10	0.768	0.483	NS
	Rented House	89	2.19	0.999		
Social Support	Owned House	21	1.81	0.750	2.796	S
	Rented House	89	2.33	0.809		
Physical Health	Owned House	21	2.95	1.071	0.181	NS
	Rented House	89	3.00	1.138		
Mental Health	Owned House	21	1.48	0.928	0.751	NS
	Rented House	89	1.65	1.099		

(At 5% level of significance the table value of ‘t’ is 1.98)

It is inferred from the above table that the sanitary workers having owned houses and rented houses are not significantly different in Educational Awareness, Economic Status, Social Participation, Social Inclusion, Physical Health and Mental Health but are significantly different in Social Support.

4.2.3 ANALYSIS OF VARIANCE

Null Hypothesis 11

There is no significant difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to Educational Qualification.

Table 4.11

Difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to Educational Qualification.

Dimensions	Source of variation	df =3, 106		Calculated F Value	Remark at 5% level
		Sum of squares	Mean square variation		
Educational Awareness	Between Groups	1.066	0.355	0.687	NS
	Within groups	54.798	0.517		
Economic Status	Between Groups	2.510	0.837	1.537	NS
	Within groups	57.708	0.544		
Social Participation	Between Groups	5.050	1.683	2.749	S
	Within groups	64.913	0.612		
Social Inclusion	Between Groups	1.042	0.347	0.373	NS
	Within groups	98.676	0.931		
Social Support	Between Groups	4.853	1.618	2.504	NS
	Within groups	68.465	0.646		
Physical Health	Between Groups	17.938	5.979	5.324	S
	Within groups	119.052	1.123		
Mental Health	Between Groups	8.215	0.355	2.508	NS
	Within groups	115.748	0.517		

(At 5% level of significance the table value of F is 2.68)

Duncan test for Educational Qualification

Table 4.12

Mean scores in the dimension of Social Participation among sanitary workers with reference to Educational Qualification.

Type of House	N	Subset for Alpha = 0.05	
		1	2
Elementary level	52	2.81	
Secondary level	7	3.14	3.14
Illiterate	48	3.19	3.19
Hr. sec. level	3		3.67

Table 4.13

Mean scores in the dimension of Physical Health among sanitary workers with reference to Educational Qualification.

Type of House	N	Subset for Alpha = 0.05	
		1	2
Hr. sec. level	3	0.067	
Illiterate	48		2.98
Elementary level	52		3.08
Secondary level	7		3.43

It is inferred from the above table that the sanitary workers with different Educational Qualifications are not significantly different in Educational Awareness, Economic Status, Social Inclusion, Social Support and Mental Health but are significantly different in Social Participation and Physical Health.

Null Hypothesis 12

There is no significant difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to Type of House.

Table 4.12

Difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to Type of House.

Dimensions	Source of variation	df =2, 107		Calculated F Value	Remark at 5% level
		Sum of squares	Mean square variation		
Educational Awareness	Between Groups	0.632	0.316	0.612	NS
	Within groups	55.232	0.516		
Economic Status	Between Groups	2.630	1.315	2.443	NS
	Within groups	57.589	0.538		
Social Participation	Between Groups	0.782	0.391	0.605	NS
	Within groups	69.182	0.647		
Social Inclusion	Between Groups	7.840	3.920	4.565	S
	Within groups	91.878	0.859		
Social Support	Between Groups	3.082	1.541	2.347	NS
	Within groups	70.237	0.656		
Physical Health	Between Groups	1.460	0.730	0.576	NS
	Within groups	135.531	1.267		
Mental Health	Between Groups	0.064	0.032	0.028	NS
	Within groups	123.900	1.158		

(At 5% level of significance the table value of F is 2.68)

Duncan test for Type of House

Table 4.13

Mean scores in the dimension of Social Inclusion among sanitary workers with reference to Type of House.

Type of House	N	Subset for Alpha = 0.05	
		1	2
Tent	18	1.94	
Thatched	71	2.07	
Concrete	21		2.71

It is inferred from the above table that the sanitary workers living in tent, thatched, and concrete houses are not significantly different in Educational Awareness, Economic Status, Social Participation, Social Support, Physical Health and Mental Health but are significantly different in Social Inclusion.

Null Hypothesis 13

There is no significant difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Number of Children in the Family.

Table 4.14

Difference among sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Number of Children in the Family.

Dimensions	Source of variation	df =3,106		Calculated F Value	Remark at 5% level
		Sum of squares	Mean square variation		
Educational Awareness	Between Groups	0.466	0.155	0.297	NS
	Within groups	55.398	0.523		
Economic Status	Between Groups	1.162	0.387	0.695	NS
	Within groups	59.056	0.557		
Social Participation	Between Groups	0.443	0.148	0.225	NS
	Within groups	69.521	0.656		
Social Inclusion	Between Groups	1.497	0.499	0.539	NS
	Within groups	98.221	0.927		
Social Support	Between Groups	0.911	0.304	0.445	NS
	Within groups	72.407	0.683		
Physical Health	Between Groups	1.563	0.521	0.408	NS
	Within groups	135.428	1.278		
Mental Health	Between Groups	0.420	0.140	0.120	NS
	Within groups	123.543	1.166		

(At 5% level of significance the table value of F is 2.68)

It is inferred from the above table that the sanitary workers having different numbers of children (1 & 2, 3 & 4, 5 & 6, and 7 & above) are not significantly different in Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Number of Children.

4.2.4 SIGNIFICANT ASSOCIATION BETWEEN THE VARIABLES

Null Hypothesis 15: There is no significant association, if any, between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Income of the Family.

Table 4.15

Association between sanitary workers in the dimensions of Educational Awareness, Economic Status, Social Participation, Social Inclusion, Social Support, Physical Health and Mental Health with reference to the Income of the Family.

Dimensions	df	Calculated 'χ^2' value	'P' Value	Remarks
Educational Awareness		9.958	0.172	**NS**
Economic Status		15.135	0.019	**S**
Social Participation		5.004	0.543	**NS**
Social Inclusion	6	2.594	0.858	**NS**
Social Support		8.594	0.198	**NS**
Physical Health		13.242	0.039	**S**
Mental Health		5.857	0.439	**NS**

(At 5% level of significance, for 6 df the table value of χ^2 is 12.592)

It is inferred from the above table that there is no significant association between Educational Awareness, Social Participation, Social Inclusion, Social Support and Mental Health, whereas there is a significant association between Educational Status and Physical Health with reference to the Income of the Family.

CHAPTER V
FINDINGS, INTERPRETATIONS, RECOMMENDATIONS AND SUGGESTIONS

5.1 INTRODUCTION

This chapter delves into the socio-economic dimensions of sanitary workers in Tirunelveli and Thoothukudi districts, regions where sanitation services play an indispensable role in sustaining public health and urban life. Sanitary workers often marginalized and subjected to harsh and unsafe working conditions form the backbone of this labor-intensive sector. Despite their pivotal role in maintaining hygiene and ensuring the smooth functioning of civic infrastructure, their lives are marked by socio-economic vulnerabilities, occupational health hazards and a lack of systemic recognition.

This chapter seeks to provide a comprehensive analysis of the challenges faced by these workers, focusing on their income levels, access to welfare measures, working conditions and the implications for their overall quality of life. By integrating primary data and secondary insights, the study captures the nuances of their lived experiences, shedding light on the broader dynamics of labor exploitation and economic disparity in the sanitation sector. The analysis draws attention to gender disparities, as women constitute a significant portion of the work force yet endure additional layers of discrimination and neglect.

This chapter not only highlights the structural deficiencies in policy implementation but also offers a lens to explore potential interventions for improving the livelihoods of sanitary workers. It underscores the need for sustainable practices and inclusive development strategies that bridge the gap between essential public services and worker well-being. Through this inquiry, the chapter aims to contribute to a deeper understanding of labor issues in Tirunelveli and Thoothukudi's sanitation workforce and to advocate

a rights-based approach to enhancing the lives of these indispensable yet overlooked contributors to India's economy. This chapter presents the summary of the findings along with conclusions drawn from them and corresponding recommendations. The findings have been listed together with significant quantitative information.

5.2 TITLE OF THE PROBLEM

"An Explorative Study on the Challenges of Sanitary Workers"

5.3 FINDINGS

Section – I

Percentage Analysis

1. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to type of family is moderate.
2. The level of social inclusion and social support of sanitary workers with reference to type of family is low.
3. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to marital status is moderate.
4. The level of social inclusion and social support of sanitary workers with reference to marital status is low.
5. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to educational qualification is moderate.
6. The level of social inclusion and social support of sanitary workers with reference to educational qualification is low.

7. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to nature of residence is moderate.
8. The level of social inclusion and social support of sanitary workers with reference to nature of residence is low.
9. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to type of house is moderate.
10. The level of social inclusion and social support of sanitary workers with reference to type of house is low.
11. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to monthly income of family is moderate.
12. The level of social inclusion and social support of sanitary workers with reference to monthly income of family is low.
13. The level of educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health of sanitary workers with reference to number of children in the family is moderate.
14. The level of social inclusion and social support of sanitary workers with reference to number of children in the family is low.

Section – II

Differential Analysis

15. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of family.
16. There is significant difference between sanitary workers under the dimension: educational awareness with reference to type of family.

17. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to marital status.
18. There is no significant difference between sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to nature of residence.
19. There is significant difference between sanitary workers under the dimension: social support with reference to nature of residence.

Section – III

Analysis of Variance

20. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to educational qualification.
21. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to type of house.
22. There is significant difference among sanitary workers under the dimension: social inclusion with reference to type of house.
23. There is no significant difference among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to number of children in the family.

Section IV

Associational Analysis

24. There is no significant association among sanitary workers under the dimensions: educational awareness, economic status, social participation, social inclusion, social support, physical health and mental health with reference to monthly income of the family.
25. There is significant association among sanitary workers under the dimensions: economic status and physical health with reference to monthly income of the family.

5.4 INTERPRETATIONS

Section–I

PercentageAnalysis

FINDING: 1

The level of social inclusion and social support of sanitary workers with reference to type of family is low.

DISCUSSION:

The study reveals that the level of social inclusion and social support among sanitary workers is low with reference to the type of family. This indicates that the family structure plays a significant role in shaping the social experiences of sanitary workers. Workers from nuclear families may experience limited social interaction and support as their social circle is confined to fewer members resulting in weaker emotional and practical assistance. On the other hand, those from joint families, though traditionally expected to have stronger social ties may still face neglect or stigma due to the nature of their occupation leading to inadequate social recognition and support. The findings highlight that irrespective of family type, the occupational stigma attached to sanitation work reduces opportunities for

inclusion in community activities and social networks. This lack of support can negatively affect their well-being, self-esteem and overall quality of life requiring targeted interventions.

FINDING: 2

The level of social inclusion and social support of sanitary workers with reference to marital status is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to marital status suggests that marital condition influences their access to social networks and emotional resources. Married sanitary workers may face greater stigma and social exclusion as their occupation not only affects them but also extends to their spouse and children, limiting family participation in community activities. Single or widowed workers on the other hand may experience isolation due to the absence of close companionship and emotional support within the household. In both cases, marital status does not significantly shield workers from the discrimination and marginalization associated with sanitation work. This highlights how the societal stigma attached to their occupation overshadows the potential social benefits of marital bonds resulting in inadequate social support systems and lower social inclusion.

FINDING: 3

The level of social inclusion and social support of sanitary workers with reference to educational qualification is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to educational qualification indicates that education has limited influence in overcoming occupational stigma. Workers with higher educational qualifications might be expected to enjoy better

social recognition but due to the entrenched prejudice attached to sanitation work, their education does not translate into improved social acceptance. On the other hand workers with lower or no formal education may lack the confidence and resources to build wider social networks, further reducing their chances of inclusion and support. Thus irrespective of educational status, sanitary workers face exclusion from mainstream community life and limited social backing. This reflects the dominance of occupational identity over educational attainment in shaping their social experiences suggesting the need for awareness programs and policies that reduce stigma and enhance social respect.

FINDING: 4

The level of social inclusion and social support of sanitary workers with reference to nature of residence is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to the nature of residence reveals that living conditions strongly influence social participation and acceptance. Sanitary workers often reside in segregated colonies or temporary settlements which isolates them from mainstream community life. Those living in rented houses or slums may face additional discrimination, as landlords and neighbors associate their occupation with impurity thereby limiting opportunities for social interaction. Even workers who own houses may not escape this marginalization, since occupational stigma tends to overshadow residential stability. Their place of residence becomes a marker of exclusion rather than a source of dignity and belonging. This pattern demonstrates that the stigma attached to sanitation work persists across residential types, creating barriers to social support and inclusion within broader society.

FINDING: 5

The level of social inclusion and social support of sanitary workers with reference to type of house is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to the type of house indicates that housing conditions though often considered a measure of social status do not significantly enhance their social acceptance. Sanitary workers residing in temporary may be more visibly marginalized, as poor housing symbolizes low socio-economic status and reduces their scope for social interaction. Even those living in concrete houses do not necessarily gain higher social recognition, since the stigma of their occupation outweighs the prestige attached to better housing. This shows that irrespective of housing type sanitary workers experience exclusion from mainstream community activities and limited social support from neighbors and peers. Thus occupational identity rather than living standards determines their level of inclusion underlining the deep-rooted social barriers they continue to face.

FINDING: 6

The level of social inclusion and social support of sanitary workers with reference to monthly income of family is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to monthly family income suggests that economic status alone does not ensure social acceptance or stronger support networks. Sanitary workers with lower income may experience exclusion due to poverty-related disadvantages such as poor living standards and restricted access to community resources. Even families with relatively higher monthly income do not gain proportionate social recognition as the

stigma associated with sanitation work continues to overshadow financial improvement. This reveals that occupational identity carries more weight than income in shaping their social position. As a result, income differences within the group do not translate into significant variations in inclusion or support. The persistence of this pattern emphasizes the need for broader social awareness to challenge occupational prejudice and ensure dignity for sanitary workers.

FINDING: 7

The level of social inclusion and social support of sanitary workers with reference to number of children in the family is low.

DISCUSSION:

The finding that the level of social inclusion and social support of sanitary workers is low with reference to the number of children in the family highlights how family size does not significantly alter their social acceptance. Workers with more children often face greater financial strain, which may further limit their ability to participate in social activities and seek community support. Families with fewer or no children might be expected to enjoy better economic stability yet they too remain excluded due to the occupational stigma attached to sanitation work. The number of children does not become a determining factor for social inclusion as the broader society continues to view the workers primarily through their job identity rather than their family responsibilities. This finding reinforces that deep-rooted social prejudices override personal or familial circumstances in shaping social support.

Section – II

Differential Analysis

FINDING: 8

There is significant difference between sanitary workers under the dimension: educational awareness with reference to type of family.

DISCUSSION:

The finding that there is a significant difference in educational awareness of sanitary workers with reference to type of family with joint families showing lower awareness compared to nuclear families, highlights the influence of family structure on knowledge and attitudes toward education. In joint families, responsibilities and decision-making are often shared among many members which can lead to diluted focus on individual children's educational needs. Limited resources may also be divided among more dependents, restricting opportunities for promoting education. Nuclear families tend to concentrate their attention and resources on fewer members, enabling greater emphasis on educational awareness and children's learning. This suggests that nuclear family settings are more conducive to prioritizing education while joint family systems though traditionally supportive may inadvertently limit awareness due to collective burdens and traditional outlooks. Targeted awareness programs are therefore essential in joint family contexts.

FINDING: 9

There is significant difference between sanitary workers under the dimension: social support with reference to nature of residence.

DISCUSSION:

5.5.RECOMMENDATIONS

5.5.1 Recommendations for Government Authorities:

- Implement welfare schemes to improve the economic status of sanitary workers including subsidies, financial aid and housing assistance.
- Enhance access to affordable healthcare services to address physical and mental health concerns.
- Provide skill development programs to increase employability and boost income levels.
- Initiate adult education programs to improve the educational status of salt pan workers.
- Facilitate community development programs to promote social inclusion and support.
- Develop affordable housing schemes to provide secure and durable housing.
- Launch awareness campaigns about the importance of education.
- Promote family welfare programs to address challenges related to family size and dependencies.
- Create job opportunities in local areas to ensure better living standards.

5.5.2 Recommendations for Educational Institutions:

- Conduct outreach programs to educate sanitary workers and their families about the benefits of education.
- Offer flexible learning programs and evening classes tailored to the needs of working adults.
- Provide scholarships or financial assistance to children of sanitary workers to ensure continuing education.
- Integrate life skills and health education into curricula for sanitary workers and their families.
- Organize awareness campaigns on the importance of literacy and skill

development.

- Collaborate with NGOs and government agencies to provide learning resources and infrastructure.
- Promote vocational training programs that align with the economic needs of sanitary workers.
- Create mentorship programs to guide children of sanitary workers in their academic pursuits.
- Develop educational programs focusing on social inclusion and community engagement.

5.5.3 Recommendations for NGOs:

- Organize support groups to foster social inclusion and build social support networks.
- Provide microfinance options to enhance economic stability and self-employment opportunities.
- Collaborate with government agencies to implement housing and welfare schemes.
- Conduct awareness drives about workers' rights, healthcare, and education.
- Offer nutritional support programs to improve the health and well-being of workers and their families.
- Create platforms for community interaction to strengthen social ties.
- Collaborate with educational institutions to promote lifelong learning initiatives.

5.5.4 Recommendations for Parents:

- Encourage children to pursue education and provide a supportive learning environment at home.
- Utilize available government schemes for education and healthcare to improve family welfare.
- Promote healthy living habits to improve physical and mental well-being.

- Participate in community development programs to foster social inclusion.
- Invest in vocational training opportunities for family members to enhance earning potential.
- Engage with NGOs and local authorities to address housing and economic challenges.
- Monitor children's academic progress and provide motivation for higher education.
- Advocate for improving living conditions and access to basic facilities.
- Actively participate in health and awareness programs organized by the community.

5.5.5 Recommendations for Teachers:

- Identify and support children from sanitary worker families who may face educational challenges.
- Design inclusive learning strategies to accommodate the needs of students from diverse backgrounds.
- Provide career counseling and guidance to help students plan their future paths.
- Conduct parent-teacher meetings to discuss students' progress and provide educational advice.
- Organize extracurricular activities to build confidence and social skills.
- Collaborate with NGOs and local authorities to provide learning materials and resources.
- Advocate for scholarships and financial aid for deserving students.

5.6 SUGGESTIONS FOR FURTHER RESEARCH

- The present study focused sanitary workers in Thoothukudi & districts. Further research could explore the working conditions and well-being of salt pan workers in other districts or states to provide a comparative analysis.
- A study could be conducted on the role of local governance in improving the

economic status and housing conditions of sanitary workers.

- A study could be undertaken to evaluate the effectiveness of existing welfare schemes for sanitary workers and identify areas for improvement.
- Research could be conducted on the intergenerational impact of sanitary work, focusing on education and career prospects for workers' children.
- A comparative study of urban and rural sanitary workers to identify regional variations in challenges.
- An in-depth study on the psychological well-being and mental health issues of sanitary workers.
- A gender-based analysis focusing on the unique problems of women sanitary workers.
- Longitudinal research to examine the impact of welfare schemes and government policies on their living conditions.
- A sociological study on the stigma and discrimination faced by sanitary workers in different communities.
- An explorative study on the role of trade unions and NGOs in improving social inclusion and support.

5.7 CONCLUSION

The present explorative study on the challenges of sanitary workers reveals that their level of social inclusion and social support is notably low across different demographic factors such as type of family, marital status, educational qualification, family income, and number of children. These findings highlight the persistent socio-economic vulnerabilities, limited access to educational opportunities, and restricted community participation faced by this marginalized group. The low social support further isolates them from mainstream society, weakening their sense of dignity and belonging. To overcome these challenges, there is a pressing need for policy interventions that ensure better educational awareness, health facilities, skill

development programs, and social security schemes tailored to their needs. Moreover, awareness campaigns can reduce stigma and promote inclusivity. Future research may focus on gender-specific issues, psychological well-being, and the role of government and non-governmental organizations in enhancing their living conditions and social acceptance.

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AN EXPLORATIVE STUDY ON THE CHALLENGES OF SANITARY WORKERS

RESEARCH TOOL

Personal Data

1. Type of Family : Joint / Nuclear

2. Educational Qualification : Illiterate / Elementary Level / Secondary Level / Higher Secondary Level

3. Marital Status : Married / Unmarried

4. Type of House : Tent / Thatched / Concrete

5. Nature of Residence : Owned House / Rented House

6. Monthly Income of Family : Rs.5000&below / Rs.5001-10,000 / Rs.10,001 - 20,000 / Rs.20,001&above

7. Number of Children in the Family :1 &2 / 3 &4 / 5&6 / 7& above

AN EXPLORATIVE STUDY ON THE CHALLENGES OF SANITARY WORKERS

I EDUCATIONAL AWARENESS			
1	Do you think education is necessary for women?	Yes	No
2	Do you know that everyone has the right to education?	Yes	No
3	Do you feel that higher education is necessary for a prosperous life?	Yes	No
4	Do you think the teaching quality is good?	Yes	No
5	Do you want to allow your children to perceive higher education?	Yes	No
II ECONOMIC STATUS			
6	Is the family income enough to meet your needs?	Yes	No
7	Do have the habit of saving in your family?	Yes	No
8	Can you repay the loan?	Yes	No
9	Do you get income from self-employment?	Yes	No
10	Does anyone in your family work as a government employee?	Yes	No
III SOCIAL PARTICIPATION			
11	Do you aware of social welfare scheme?	Yes	No
12	Do you like to participate in social events?	Yes	No
13	Do you involve yourself in community-based public works?	Yes	No
14	Do you celebrate public festivals with other people?	Yes	No
15	Do you participate in finding a solution to a social problem?	Yes	No
IV SOCIAL INCLUSION			
16	Do you feel that your fellow members in society treat you fairly?	Yes	No
17	Do you feel that you have social responsibilities?	Yes	No

18	Do you feel that you have all your rights in society?	Yes	No
19	Do you have any social responsibilities?	Yes	No
20	Do you feel that your basic needs are recognized by this society?	Yes	No
V SOCIAL SUPPORT			
21	Have you received any welfare assistance from a government agency for your family?	Yes	No
22	Do you feel that you are benefiting from government welfare schemes?	Yes	No
23	Do you receive any assistance from non-governmental organizations?	Yes	No
24	Are your basic needs met by your local councilors?	Yes	No
25	Do government officials visit your area to satisfy your needs?	Yes	No
VI PHYSICAL HEALTH			
26	Do you eat a nutritious diet?	Yes	No
27	Do you suffer from any chronic illnesses?	Yes	No
28	Do you think that your work can cause you certain diseases?	Yes	No
29	Is the area you live in hygienic?	Yes	No
30	Is pure drinking water available in your area?	Yes	No
VII MENTAL HEALTH			
31	Do you live in peace of mind?	Yes	No
32	Are you able to live in peace with your family members?	Yes	No
33	Are you satisfied with your job?	Yes	No
34	Do you go on vacations with your family members?	Yes	No
35	Do you feel that this work give you joy and satisfaction?	Yes	No

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