

**ASSESSMENT OF HEALTH SECURITY, SOCIO-ECONOMIC SECURITY, AND
QUALITY OF LIFE OF WOMEN EMPLOYED AS WASTE COLLECTORS
UNDER THIRUVANANTHAPURAM CORPORATION**

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degree of
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DECLARATION

I hereby declare that this dissertation titled **“Assessment of Health Security, Socio-Economic Security, and Quality of Life of women employed as waste collectors under Thiruvananthapuram Corporation”** is the Bonafide record of my original research. It has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



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CERTIFICATE

Certified that the dissertation titled “**Assessment of Health Security, Socio-Economic Security, and Quality of Life of women employed as waste collectors under Thiruvananthapuram Corporation**” is a record of the research work undertaken by Dr Dharsin Priya D, in partial fulfilment of the requirements for the award of the degree of “Master of Public Health” under my guidance and supervision.



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GLOSSARY OF ABBREVIATIONS

SWM	Solid Waste Management
MSWM	Municipal Solid Waste Management
UNEP	United Nations Environment Programme
PSS	People's Security Survey
ILO	International Labour Organization
QOL	Quality Of Life
WHOQOL-BREF	World Health Organization Quality Of Life - Brief
LSG	Local Self Government

ABSTRACT

Introduction: Solid waste collection as an occupation is known to predispose the workers to a wide range of morbidities which affects their quality of life. This study assessed the health and socioeconomic security, and quality of life (QOL) among the women waste collectors (Harithakarmasena) employed by the Thiruvananthapuram City Corporation.

Methods: A cross-sectional survey was carried out among 300 women waste collectors selected through a cluster sampling method from 33 municipal wards in Thiruvananthapuram. Data was collected using a structured questionnaire, which included the WHOQOL-BREF to assess their quality of life.

Results: Around 84 per cent of the workers reported they had musculoskeletal problems, 57.5 per cent of the workers reported hypertension, and about 40 per cent reported diabetes. 62 per cent had some form of health insurance coverage. More than 75 per cent of the workers reported that their life circumstances and self-esteem had improved after their employment. The mean QOL score in the psychological domain was (59.2 ± 11.92), physical domain (57.8 ± 12.75), social domain (54.5 ± 9.22), and the environmental domain was (52.9 ± 8.00). In the multivariable logistic regression, those with respiratory problems (AOR: 2.57, 95% CI: 1.45- 4.54) and inadequate sleep (AOR: 0.37, 95% CI: 0.20- 0.68) had higher odds of poor physical QOL. Having no savings (AOR: 0.43, 95% CI: 0.23- 0.78), lack of free time after work (AOR: 0.52, 95% CI: 0.30- 0.91) were significant predictors of poor psychological QOL.

Conclusion: There was a high prevalence of chronic morbidity among the women waste collectors. However, their quality of life in the physical and psychological domains was higher in comparison, indicating that they might be coping well physically and mentally. Measures for routine occupational health care; better work schedules that allow adequate rest, sleep and leisure time, social security, and support network for financial and psychological well-being could further enhance their quality of life.

CHAPTER 1

INTRODUCTION AND REVIEW OF LITERATURE

1.1 Background

Globally, urban solid waste management is one of the biggest challenges to building sustainable cities and sustainable development. Rapid urbanisation is an important contributor to the steady surge in waste generation in the urban areas worldwide. Globally, it is estimated that more than 20 million people earn their livelihood as waste collectors (*World Economic Forum*, 2023). In many parts of the world, particularly in South Asia, waste collectors are the critical workforce in the management of urban solid waste. They play a pivotal role in the collection, segregation of waste and thereby in the reduction of environmental pollution and maintenance of public health and sanitation. According to the National Labour Survey in India, waste pickers only accounts to 1 per cent of employment, yet it corresponds to around 2.2 million workers.(Waste Pickers | WIEGO, 2023). Historically, waste collection in India dates back to the 17th century, when paper, rags and bones were among the first commodities to be collected (Thirunavukarasu, 2012). In India, waste picking has traditionally been carried out by the poorest of people and those who belonged to the lowest caste and perceived as filthy and degrading (Singh, 2021).

Most of the waste collectors often operate in the informal sector, where their work is not formally recognised or regulated under labour laws. However, the rapid and ever-increasing rate of urban waste generation in developing countries has led to the emergence of a dual system of formal and informal waste collection schemes. The formal waste collection system consists of larger, better-organised public and private agencies that are officially recognised by state authorities in the collection of waste from households and industries with a fixed fee (Ampong et al., 2024). Despite being in the formal sector, waste collectors

generally face shortages in adequate personal protective equipment (PPE), access to healthcare and are prone to significant avoidable morbidity. They are also prone to discrimination and stigmatisation due to the nature of their work, which erodes their quality of life.

Globally, women are a significant part of the solid waste management sector and the circular economy. Women have long been at the core of waste collection activities, especially in developing economies. In developing economies including India, women form the dominant workforce at the grassroots levels of the waste management sector (Mehta, 2024). Whether they are in the formal or informal sector, prevailing social norms and expectations limit women waste collectors' ability to move into decision-making and leadership positions (ALNAP, 2020).

1.2 Review of literature

The Ottawa Charter for Health Promotion, 1986 acknowledges that work should be a source of health for people and that the way society organises work should help create a healthy society (Europe, 1986). Employment conditions are prime social and commercial determinants of physical and mental health, as they determine the rights-related details of the contractual arrangements (e.g. wages, working hours, length of tenure, worker rights) between employers and employees (van den Berg and Baum, 2024). Employment in the waste and recycling industry is estimated at 6.9 million, representing 0.2 per cent of total global employment. But this is probably an underestimation due to data limitations. Employment in the industry has increased in 55 out of 71 countries in the period 2014 to 2023. (Stoevska, 2024).

1.2.1 Solid Waste Management

Solid waste management refers to “a variety of activities related to the supervised handling of waste material from generation at the source through the recovery process to final disposal”(Division, 1997). The United Nations’ Sustainable Development Goals (SDGs), have recognised the importance of waste management for a sustainable future(Environment, 2024). Annually, the world generates 2.01 billion tonnes of municipal solid waste(Ampong et al., 2024). According to the UNEP Report 2024, municipal solid waste generation is predicted to grow from 2.3 billion tonnes in 2023 to 3.8 billion tonnes by 2050 with the global annual cost of waste management amounting to nearly 640.3 billion.(Environment, 2024). In India, the Ministry of Environment, Forests and Climate Change (MoEFCC) regulates and manages waste across the country. According to the Annual Report on Solid Waste Management (2020-21) published by the Central Pollution Control Board, Delhi, India produced a total of 160,038.9 metric tons per day (TPD) of solid waste. It is also anticipated that urban India will produce 107.01 million tons per year (TPY) by 2031 and 160.96 million TPY by 2041. To enhance the effective implementation of SWM protocols across diverse states and municipalities, the Housing Authority and Urbanisation have published the revised MSWM Manual 2016, which is designed by the rules of 2016 (MoUD, 2016). This manual provides detailed guidelines for urban local bodies, supporting them in making informed and effective decisions about their SWM systems.(Singh et al., 2024).

1.2.2 Waste collectors

The term ‘waste collector’ refers to a person employed by a public or private enterprise to collect and remove from residential, commercial, industrial or other collection sites for

further processing and disposal(Thirunavukarasu, 2012). According to Samson et al, the term waste collectors can be broadly defined as people who reclaim “reusable materials from what others have cast aside as waste” (Informal Economy Monitoring Study Sector Report: Waste Pickers | WIEGO, 2016). Unless waste collectors form organisations and choose to work collectively, it is typically a highly autonomous form of labour in which the worker determines his or her own work schedule, decides what to collect, where to collect it, how to collect it, and to whom to sell. They can range from extremely poor people rummaging through garbage for food, clothing and other basic, daily needs to informal private collectors who collect and sell recyclables to middlemen or businesses, and organised collectors/sorters of recyclables who are members of trade unions, cooperatives or associations (Dias, 2016).

1.2.3 Health problems faced by waste collectors

Literature suggests that there are obvious health impacts owing to the unhygienic working environments of waste workers. They are vulnerable to cuts, infections, respiratory diseases, and other issues. In a study conducted in Ghana, domestic waste collectors reported that they suffered from occupational injuries, psychosocial disorders, work-related stress, and frequent burnout(Lissah et al., 2022). In a study conducted at 3 different locations in Himachal Pradesh, in the locations where there was a lack of provisions of protective equipment, along with the ignorance of the workers resulted in occupational health hazards due to different types of external injuries. The major occupational health issues reported were muscle and ligament sprain, cuts and lacerations and different allergies(Thakur et al., 2018). A study conducted with waste workers in Kerala found a high prevalence of respiratory diseases, eye diseases, dermatological issues, nail infections and other health problems(Thayyil et al., 2013). In health care seeking, they experience expensive out-of-pocket payments due to lack of any

employment benefit schemes; Moreover, many waste pickers earn money on a day-to-day basis, and face income insecurity when they have to make the difficult choice between obtaining health care and earning wages on the days that they seek health care. (Lakshmi et al., 2021).

1.2.4 Health Security

Health security at an individual level refers to “all aspects of public health that protects the vital core of human lives”(Malik et al., 2021). However, there is a gap in the literature concerning studies assessing health security at an individual level. Despite the expansion in the physical provisioning of health facilities and the high levels of spending, ill health remains one of the most prevalent causes of human deprivation in India (Mahendra Dev et al., 2001). The failure to provide adequate health security seems to be one of the major development failures. Health insecurity has emerged as a major concern among health policy-makers, particularly in low- and middle-income countries (LMICs)(Gama, 2015).

A study on the informal workers in India defines health security as having low exposure to risk and having access to health care services and the ability to pay for medical care and medicine. Such health security should be equally available and accessible to all citizens. Health security was assessed as part of a larger survey by using the People’s Security Survey(PSS) Questionnaire which was designed by ILO, to address the issue of insecurity related to people’s income and work in today’s working environments(Unni and Rani, 2002).

A study by Nahar et al explored indigenous indicators of health security in relation to climatic disasters in Bangladesh. It was found that health and health security are intrinsically linked but health security is more than death, disease and illness. The indicators

were associated with the socioeconomic and political conditions indicated by food, livelihood and the means to produce (Nahar et al., 2013).

1.2.5 Socio-Economic Security

In a paper on the various forms of socio-economic security, Guy Standing discusses seven forms: 1. job security (security in the possession of a particular niche in the labour market, i.e. a specific post or career path and its job attributes) 2. labour market security (security of finding a job) 3. employment security (security of institutional framework for employment, e.g. against arbitrary employment procedures) 4. work security (safety at work, working conditions) 5. skill reproduction security (opportunities to gain and retain skills); 6. representation security (having a voice in the procedures, both at workplace and labour market level, which affect one's working life) and 7. income security (security of sufficient income to continue to function in one's own society) (SES Publications-Global Labour Flexibility: Seeking Distributive Justice, 1999). The ILO InFocus Programme on Socio-Economic Security has added an eighth, occupational security (being able to follow one's chosen profession or that activity that gives central meaning, identity and direction to one's working life).

Developing effective strategies to mitigate socio-economic insecurity requires addressing both subjective and objective dimensions. While formulating objective measures of socio-economic security is relatively straightforward, capturing subjective perceptions necessitates understanding how individuals from diverse global regions and varied social and demographic backgrounds perceive their security or insecurity. Towards this purpose, the InFocus Programme on Socio-Economic Security (IFPSES) initiated its People's Security Surveys (PSS) in mid-2000 (People Security Surveys: Information, 2000).

The Programme on Socio-Economic Security sees security at work (job security, work security, and occupational security) as belonging to a wider matrix of socio-economic relationships which give rise to representation, employment, labour market and income security, all of which are founded upon basic security. It says the phenomenon of security has a common core, whatever its range or focus: people feel secure when they have social relationships and can rely upon expectations about the future. Insecurity in the workplace has unfavourable outcomes not only for individuals and organisations, but also at the social level(Stock, 2001).

A study in Telangana, India, on the Occupational health and safety of municipal solid waste workers highlights the need for a comprehensive approach which focuses on the health and safety with social security for the workers.(Ramitha et al., 2021).

According to the Informal Economy Monitoring Study (IEMS), most waste collectors cannot rely on any government grants or social security. The study shows that in Pune, 33% of waste workers have access to health insurance; only 5% live in households that have access to pensions; and 13% live in households with access to government grants(City Report - Informal Economy Monitoring Study: Waste Pickers in Pune, India | WIEGO, 2014).

It is a well-documented fact that the health insecurities are compounded by the socioeconomic vulnerabilities, and they erode the overall quality of life and well-being of the waste collectors who belong to the lowest social and economic class. These factors are further intensified by the social stigma and discrimination they face because their work is considered degrading.

1.2.6 Quality of life

Quality of life (QOL) among a population is an essential step to understand and improve their health status and well-being of the population. The concept of quality of life (QOL) is used to perceive well-being among various susceptible populations (Bayram et al., 2007). The World Health Organisation (WHO) defined QOL as “individual’s perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns”. Quality of life is a broad concept that is influenced by an individual’s physical health, mental well-being, degree of independence, social connections, and interaction with key aspects of their environment. It emphasises the fundamentally subjective nature of quality of life (Group, 1994). Work directly and significantly influences the quality of life and lifestyle of workers. The QOL is related to many factors such as education, activity, longevity, health, satisfaction, socioeconomic condition, productivity, continuity of family and occupational roles. Literature suggests waste collectors can contract diseases due to inadequate work conditions, which can reduce their quality of life (Silva et al., 2017).

1.2.7 Municipal solid waste collectors in India

Waste collectors are a significant segment of informally employed workers in India. There are approximately 1.5 to 4 million waste collectors in India today (Dandapani, 2017). In India, municipal solid waste collectors include government-employed sanitation workers, privately contracted door-to-door garbage collectors, informal waste pickers and rag pickers (Joardar, 2000). The formal waste management system is of critical importance to the country, owing to the rapid population growth and density. This, along with urbanisation and economic development, has led to increased resource consumption, which has subsequently caused the rate of waste generation to rise in the last few years. As such, waste

management is a stepping stone in the maintenance of public health, and thus points towards the Human Development Index, which characterises India's status as a developing country (SPRF, 2020). Studies have suggested that the amount of waste generated in urban areas is almost double that in rural areas (Bhada-Tata and Hoornweg, 2012). Almost 377 million people residing in cities of India were responsible for the generation of about 62 million tonnes of municipal solid waste in 2018 (Lahiry, 2017). According to the International Labour Organization, waste collection is a 'green job' which should be promoted and facilitated as it contributes to a global green economy by meeting the goal of environmental sustainability (Working towards Sustainable Development: Opportunities for decent work and social inclusion in a green economy | International Labour Organization, 2012). Their work is ranked lowest along the hierarchy of informal occupations, making them more vulnerable to financial difficulties and unfavourable health outcomes (Madhav, 2011).

1.2.8 Women waste collectors

A 2018 global online survey titled "Mapping the status of women in the global waste management sector" conducted by Women of Waste (WOW), an initiative led by women in the waste sector and supported by the International Solid Waste Association, has showed that women contribute massively to the global waste management sector, in a variety of roles across the waste management hierarchy, and through a diversity of organisations, even though they are not very 'visible' in society (Mehta, 2024). Women across the globe strive to break through glass ceilings and social stigmas in achieving equal wealth and status. In the wider waste management sector, women are primarily found in the lower tier, working in waste collection and separating at landfill sites. Whereas men dominate the higher-income and decision-making roles in the same sector, whether as truck drivers, scrap dealers, repair shop workers, or in buying and reselling

recyclables. This, again, reflects the gendered division of labour in society but also means that women are often excluded when waste management activities are formalised, missing out on protections and benefits, such as social security or higher wages (Why gender dynamics matter in waste management, 2022).

Hundreds of thousands of waste collectors in India depend on waste for an income, despite the associated health and social issues. Bengaluru has women primarily participating in the waste workforce. They are called ‘pourakarmikas’, a term used for formal waste collectors and street sweepers (Mehta, 2024).

According to the ILO, the waste management and recycling industry is male-dominated, with women comprising only 22.7 per cent of the workforce. This may be linked to limited employment opportunities for women and a lack of social protection, compelling them to take on even undesirable or low-paid jobs in this sector that often involve poor working conditions, including exposure to health hazards. (Stoevska, 2024).

Studies show that women play a major role in the waste sorting stage, which has a considerable impact on health, as most of the sorting processes take place in the informal system inside residential spaces and residential streets, which affects women’s health. Since women spend most of their time inside the home engaged in the sorting process, they face increased vulnerability to serious diseases. (Elsheekh et al., 2021).

1.2.9 Women Municipal Solid Waste collectors in Kerala state, India- Harithakarmasena Workers

Kerala State’s geography, population density and terrain gradient pose unique challenges and opportunities for waste management. With a population of about 34.8 million with densely packed settlements, Kerala generates more than 10,000 tonnes of waste per day. The Decentralised Solid Waste Management (DSWM) as envisioned in Kerala, is a system

that involves the segregation and processing of waste at the source level itself to the maximum extent and then at the community level. The Solid Waste Management Rules, 2015 of the Government of India stated that it is the responsibility of the Local Self Governments (LSG) to provide waste management services within their jurisdiction and collect user fees from individual households and institutions for the services. To help the LSGs execute their responsibilities of waste management effectively as well as to help generate maximum sustainable livelihoods from the process, the Government of Kerala, through the Haritha Keralam Mission, issued necessary directions for LSGs to constitute Haritha Karma Sena (HKS) in all the wards. In tune with the direction, the Local Self-Government Department (LSGD), Government of Kerala, decided to introduce the HKS system in the state by positioning informal sector women workers in the forefront for SWM. These workers, mostly constitutes women and are responsible for the collection, transportation, processing, disposal, and management of waste in collaboration with the respective LSGs. The women entrepreneurs come from the Kudumbashree Neighbourhood Group fold, form Micro Enterprises (ME) known as HKS (Haritha Karma Sena) ME Units and are assisted and trained by the LSGIs in the waste collection drive. The mandate of HKS is to primarily collect the non-biodegradable waste from households and institutions (The State of Decentralised Solid Waste Management in Kerala Report | Local Self Government Department, 2022).

1.3 Rationale for the study

In Kerala, the solid waste management initiative is spearheaded by the local self-government and has mostly women workers at the grassroots level for the collection and segregation of waste. They are called the 'Harithakarmasena workers' (Green Workforce) and are mostly women who are members of the local self-help groups organised as credit and microenterprises groups under the Kudumbashree poverty eradication initiative of the

Government of Kerala. Thiruvananthapuram, the capital city of the state of Kerala, India, is spread over an area of 2189 sq.km(Thiruvananthapuram: Municipal Solid Waste Management - Report, 2022). The city is witnessing a rapid pace of increase in population, economic growth, urbanisation and industrialisation (Reghunathan and Anilkumar, 2014). As population growth is a major contributor to increasing Municipal Solid Waste, solid waste management (SWM) has emerged as one of the biggest challenges for Thiruvananthapuram, and the role of Harithakarmasena workers has great significance. Harithakarmasena is functioning as a micro enterprise of Kudumbashree and are under the control of urban local bodies. Being part of the Kudumbashree program, they are entitled to certain health and security benefits, yet the extent of that remains unclear. So studying about their health securities particularly, other socio-economic securities and quality of life can highlight the merits as well as challenges and gaps in their existing support systems. Previous literature has addressed the broader aspects of basic and socio-economic security, but there is a notable gap in studies that specifically examine health security at an individual level and its correlation with other forms of security.

1.4 Research questions

- What is the extent of health security and socio-economic security of women employed as waste collectors under Thiruvananthapuram Corporation?
- What is the perceived quality of life among these women waste collectors?

1.5 Objectives

- To assess the health and socio-economic security of women employed as waste collectors under Thiruvananthapuram Corporation.
- To understand the quality of life of these workers and the factors related to them.

CHAPTER 2

METHODOLOGY

2.1 Study type/design:

A cross-sectional study to study the health security, socio-economic security, and quality of life of women waste collectors employed under Thiruvananthapuram Corporation, Kerala.

2.2 Study setting:

The administration of Thiruvananthapuram Municipal Corporation covers a significant urban area within Thiruvananthapuram district, the capital of Kerala. The study was carried out in 33 wards under the Corporation, out of the total of 100 wards.

2.3 Study participants

The participants were women Harithakarmasena workers working in 33 wards out of the 100 wards under the Thiruvananthapuram Municipal Corporation.

2.4 Sample size:

There are 100 wards and around 10-12 HKS workers in each ward. So the maximum population size was estimated to be **1200**. In a study by the ILO to understand the needs and behaviour of informal workers and employees in India regarding health insurance, 33% of workers had health protection benefits of some kind (Extending social health protection to informal sector workers in India: A survey report | International Labour Organization, 2022). Therefore, the anticipated frequency was taken as **33%**, confidence level **95%**, precision **5%**, and design effect **1.5**. The sample size was determined using OpenEpi software version 3.01 and was estimated to be **398**. Since the population was finite (1200), after adjusting for the finite population by applying the population

correction factor, the sample size was **300**. The final sample size was estimated to be **330** after accounting for a 10% non-response rate.

2.5 Sample selection procedure:

Cluster sampling of all 100 wards under Thiruvananthapuram Corporation was done, out of which 33 wards were selected. From each of the selected wards, data collection was done from every woman worker willing to participate in the study and those fulfilling the inclusion criteria.

2.6 Participant selection

Inclusion Criteria

- Women Harithakarmasena members in the age group 18-60 years working in the sector for more than 6 months.
- Willing to participate in the study.

Exclusion Criteria

- Women Harithakarmasena members who have been working in the sector for less than 6 months.

2.7 Data collection process:

A structured interview schedule was used to collect data from the study participants. The period of data collection extended from January 15th, 2025, to March 10th, 2025. The interview was conducted in Malayalam. The interview schedule consisted of socio-demographic details, work-related details, questions on health and access to health care in order to assess their health security, questions on various aspects of socio-economic

security like income security, work security, and employment security, and the WHOQOL-BREF questionnaire.

The interview was conducted after obtaining written informed consent from the study participants. Privacy was ensured during the interview, and confidentiality was maintained for all the information that was obtained.

2.8 Data Collection Tool

A structured interview schedule in English and Malayalam and the WHOQOL-BREF questionnaire were used to collect the data.

It had 7 sections:

Section 1: Sociodemographic details

Age, completed level of education, caste, marital status, type of family, number of members in the household, access to clean drinking water, drinking water source, ownership status of house, ration card colour.

Section 2: Details of Waste Collection

Employment duration, ward number assigned for waste collection, and number of households assigned to collect waste in 1 day.

Section 3: Time Use Details

Time of start and end of workday, time of waking up and sleep, number of hours working outside home, number of hours of sleep, number of hours spent on domestic work, free time after work, additional care, and domestic help.

Section 4: Socio-Economic Security

A) Work Security

Sanitation facilities, type of waste collected, details of PPE usage, injury at work, type of injury, reasons for injuries among waste collectors, and income-generating activity.

B) Income Security

Monthly Income, pay for PPE, wage perception, income expectation in the next 1 year, benefits provided by the employer, loan during crisis, method of payment, savings.

C) Employment Security

Type of contract, protection from unjust dismissal, compensation for minimal income, and training.

Section 5: Social Improvement

Reason for choosing the job, change brought to life by the job.

Section 6:

A) Health Security

Health insurance coverage, type of healthcare facility, distance of health clinic/hospital from place of residence, time required to reach the health clinic/hospital, vaccinations, money obtained for healthcare, acute ailments in the last 2 weeks, chronic ailment, type of chronic ailment, hospitalization in past 1 year, musculoskeletal problems in past 3 months, respiratory problems in past 3 months, eye problem during solid waste collection, skin problems in last 1 year.

B) WHOQOL-BREF questionnaire

Overall health status, overall perceived quality of life, 7 questions in the physical domain,

6 questions in the psychological domain, 3 questions in the social relationships domain, and 8 questions in the environmental domain.

2.9 Data storage

Data was collected using a Structured Interview Schedule. The hard copies of the interview schedules collected are kept safely and accessible only to the principal investigator (PI). The soft copy of the dataset is encrypted and stored securely with the PI.

2.10 Data analysis

Data collected by the Principal Investigator was entered into the ODK platform and exported to Microsoft Excel. Analysis was done in SPSS IBM Software. The proportion of participants who had certain responses to the health security, socio-economic security, time use, social empowerment, and socio-demographic questions was assessed. The proportion of participants having poor, moderate, or good quality of life was also assessed. Chi-square tests were done to determine whether there is a statistically significant association between QOL domains and relevant independent variables. Binary logistic regression was applied to find the association between quality of life and other relevant variables, which were significant in the chi-square tests. Multivariable logistic regression was performed using variables that were found to be statistically significant in the bivariate analysis. Odds ratio was computed for all the associations assessed, and the p-value obtained was used to determine whether the associations were significant.

2.11 Ethical Consideration

The Institutional Ethics Committee of Sree Chitra Thirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, had reviewed the study and gave clearance to conduct the study (SCT/IEC/2336/JANUARY/2025). Written informed consent was obtained from all the study participants before administering the interview schedule. The participants had the freedom to refuse participation at the outset or during any stage of the study. There was no anticipated risk for participants from participating in the study.

CHAPTER 3

RESULTS

This chapter describes the results of the data analysis in concordance with the study objectives to assess the health and socio-economic security related to them and to understand the quality of life of the women waste collectors in Thiruvananthapuram Corporation.

3.1 Descriptive analysis

The descriptive analysis is presented in 5 sections as follows:

3.1.1 Section A

- a) Sociodemographic characteristics of the participants
- b) Details of work

3.1.2 Section B

- a) Health Security

3.1.3 Section C

- a) Socio-economic Security

1. Work Security

2. Income Security

3. Employment Security

3.1.4 Section D

- a) Social Improvement

3.1.5 Section E

a) Quality of life

3.1.6 Section F

a) Time Use

3.1.1 Section A

In this section, the sociodemographic characteristics and work-related characteristics of the participants are presented (Table 3.1).

a) Sociodemographic characteristics

Data was collected through interviews using a structured questionnaire with 300 women waste collectors working in various wards under Thiruvananthapuram Corporation.

The mean (SD) age of the participants was 47.7(8.86) years (95% CI: 46.7-48.7).

The majority of respondents (42.7 percent) fell within the 51-60 age group, followed by those aged 41-50 (34.3 percent). 21.3 percent are within the 31-40 category.

More than half of the respondents belonged to the scheduled caste/tribe (53.7 percent) category, followed by OBC/OEC (40.0 percent), and only a small proportion was from the general category (6.3 percent).

More than half (53.0 percent) had completed high school or higher secondary education, and around 10 percent had no schooling.

Almost three-fourths of the population were married (74.0 percent). Around 20 percent were widowed.

Most respondents (60.0 percent) lived in nuclear families, while 38.7 percent lived in extended families, and a small fraction (1.3 percent) lived in joint families.

The majority of the participants (70.7 percent) lived in their own homes, and 28 percent lived in rented homes.

A majority (86.0 percent) hold a BPL (Below Poverty Line) card. Only 13.3 percent had an APL (Above Poverty Line) card.

Nearly all respondents (96.7 percent) had household access to drinking water, while 3.3 percent did not had access to drinking water in the household.

Most respondents relied on piped water (86.7 percent). A notable proportion also used wells (25.3 percent). Those respondents who didn't have household access to water relied on public taps/wells or tanker service.

Table 3.1 Sociodemographic Characteristics of the participants

Variable	Category	n (%)	N = 300
Age group	<30	5(1.7)	
	31-40	64(21.3)	
	41-50	103(34.3)	
	51-60	128(42.7)	
Caste	General	19(6.3)	
	OBC/OEC	120(40.0)	
	SC/ST	161(53.7)	
Completed education level	No schooling	31(10.3)	
	Primary school	36(12.0)	
	Upper primary school	61(20.3)	
	High school/Higher secondary	159(53.0)	
	Diploma/Degree	13(4.3)	
Marital status	Single	2(0.7)	
	Married	222(74.0)	
	Divorced/Separated	17(5.7)	
	Widowed	59(19.7)	
Family type	Nuclear	180(60.0)	
	Extended	116(38.7)	
	Joint	4(1.3)	
	Own	211(70.7)	

Ownership status of the house	Rented	84(28.0)
	Living in a relative's house	4(1.3)
Type of ration card	APL	40(13.3)
	BPL	258(86.0)
	No ration card	2(0.7)
Access to Drinking water in the household	Yes	290(96.7)
	No	10(3.3)
*Source of Drinking water(case-percent)	Pipe water	260(86.7)
	Well	76(25.3)
	Bore well	5(1.7)
	Public tap/well	9(3.0)
	Tanker	1(0.3)

*Multiple response

b) Details of Work

The majority of respondents (62.0 percent) were working for 1-3 years. (Table 3.2).

Around one-fifth of the women (19.0 percent) had less than 1 year of experience, and a small percentage (1.0 percent) had been employed for more than 5 years.

Table 3.2 Employment duration of the participants

Variable	Categories	n (%) N = 300
Employment Duration	Less than 1 year	57(19.0)
	1-3 years	186(62.0)
	3.1-5 years	54(18.0)
	More than 5 years	3(1.0)

3.1.2 Section B

In this section, the results of the responses to questions on health security are presented.

Participants were asked about health insurance coverage, availability, and accessibility of health facilities, history of acute, chronic, and work-related illnesses (Table 3.3).

a) Health Security

More than 60 percent of respondents were enrolled in a health insurance scheme, while 38.0 percent were not.

Among those covered, 76.1 percent received employer-supported schemes. 51.1 percent were covered by government-supported schemes. Only 1.1 percent had private insurance.

The majority (86.0 percent) used public healthcare facilities. 13.3 percent preferred private healthcare. More than half of the respondents lived within 1 km of a healthcare facility, and about 15 percent within a distance of 5-10 km.

More than half of the participants (56.7 percent) could reach the nearest healthcare facility within 15 minutes.

None of the participants (100.0 percent) received Hepatitis B or Tetanus vaccination before or after securing the present job.

41.3 percent reported an acute ailment in the 2 weeks prior to the interview.

A significant proportion (60.0 percent) suffer from chronic illnesses. Of which 57.5 percent had hypertension, and 40.2 percent had diabetes.

More than 80 percent had reported musculoskeletal issues in the previous three months.

More than one-third of the respondents had experienced respiratory problems, about one-fifth had eye problems during waste collection, and more than forty percent suffered from skin problems in the past year.

Table 3.3 Health Security among the respondents

Variable	Category	n (%) N = 300
Health Insurance Scheme	Yes	186(62.0)
	No	114(38.0)
*Type of Scheme (case-percent)	Employer supported	140(76.1)
	Govt supported	94(51.1)
	Private insurance	2(1.1)
Type of Healthcare Facility usually accessed	Public	258(86.0)
	Private	40(13.3)
	Not applicable	2(0.7)
Distance from the place of residence to the nearest health clinic/hospital	Less than 1 km	157(52.3)
	1.5-2 km	94(31.3)
	5-10 km	46(15.3)
	Don't know	1(0.3)
	Not applicable	2(0.7)
Time taken to reach the health clinic/hospital	Less than 15 min	170(56.7)
	5-29 min	109(36.3)
	30-59 min	21(7.0)
Vaccinations not taken	Tetanus (No)	300(100.0)
	Hepatitis B(No)	300(100.0)
Acute Ailment within the last 2 weeks	Yes	124(41.3)
	No	176(58.7)
Chronic Ailment	Yes	180(60.0)
	No	120(40.0)
Type of Chronic Ailment	Diabetes	72(40.2)
	Hypertension	103(57.5)
	Heart disease	8(4.5)
	Other	98(54.7)
Hospitalization in last 1 year	Yes	26(8.7)
	No	274(91.3)
Musculoskeletal Issues in last 3 months	Yes	251(83.6)
	No	49(16.3)
Respiratory Issues in last 3 months	Yes	104(34.7)
	No	196(65.3)
Eye Problems during solid waste collection	Yes	63(21.0)
	No	237(79.0)
Skin Issues in past 1 year	Yes	301(43.3)
	No	170(56.7)

* Multiple response

3.1.3 Section C

a) Socio-economic Security

This section had questions related to their socio-economic security, which was divided into 3 subsections of work security, income security, and employment security (Table 3.4).

1. Work Security

This section is mainly about work-related factors like facilities available, history of injuries, Personal Protective Equipment (PPE) use, and whether they were involved in any other income-generating activity apart from being a Harithakarmasena worker.

A majority of participants (73.0 percent) worked in wards where adequate sanitation facilities were not provided by the employer. Only 27.0 percent of workers had access to toilet facilities.

While all the participants collected non-biodegradable waste, around one-third of them collected biodegradable waste.

More than half of the participants (55.0 percent) used Personal Protective Equipment regularly. The primary reason for them not using PPE regularly was lack of provision by the employer (43.4 percent), while close to one-third felt there was no need to use PPE, 25.4 percent cited other reasons such as discomfort, difficulty in use since they have to blow the whistle often, etc

Around one-third of the workers reported having injuries related to work in the past three months. The most common injuries were puncture wounds (51.0 percent). Other types of injuries inflicted were strains/sprains (19.8 percent), bruises (10.4 percent), and fractures (5.2 percent). 16.7 percent reported other kinds of injuries.

The leading cause of injury, as told by the participants, was the nature of work (83.7 percent). 24.0 percent attributed injuries to non-observance of safety procedures, 17.3 percent to improper disposal of waste by residents, 15.3 percent due to weather, and 3.0 percent due to lack of PPE.

Only 3.7 percent of the population engaged in other income-generating activities like stitching, working as a domestic help, etc. For the majority (96.3 percent), this work is their only source of income.

Table 3.4 Work Security of the participants

Variable	Category	n (%) N = 300
Sanitation facilities	Yes	81(27.0)
	No	219(73.0)
Type of waste collected	Non-biodegradable	300(100.0)
	Non-biodegradable and biodegradable	95(31.7)
Regular PPE Usage	Yes	165(55.0)
	No	135(45.0)
*Reason for Not Using PPE (case-percent)	Not provided by the employer	59(43.4)
	Doesn't feel the need to use	53(28.3)
	Other	38(25.4)
Injury at work	Yes	96(32.0)
	No	204(68.0)
*Type of Injury (case-percent)	Puncture wound	49(51.0)
	Contusion (bruise)	10(10.4)
	Fracture	5(5.2)
	Strain/Sprain	19(19.8)
	Other	16(16.7)
Reasons for Injury (case-percent)	Work nature	251(83.7)
	Improper disposal by residents	52(17.3)
	Nonobservance of safety procedures	72(24.0)
	Lack of PPE	9(3.0)
	Weather	46(15.3)
	Other	2(0.7)
Other income-generating work	Yes	11(3.7)
	No	289(96.3)

* Multiple response

2. Income Security

In this section, participants were asked questions on their monthly income, income regularity, whether they received entitled income or not, whether they bought PPE by themselves, perception about wage, and whether they are entitled to any benefits (Table 3.5).

The mean (SD) income of the participants was Rs17,107.17(5,455.82) (95% CI: 16487.28- 17727.05) per month.

A majority (76.3 percent) earned between Rs 10,000- Rs 20,000, while 3.7 percent earned below ₹10,000. 1.3 percent earned more than Rs 30,000 per month.

A majority (71.3 percent) paid for their own PPE. Only 28.7 percent receive PPE without paying.

Around three-fourths of the population (73.0 percent) had fluctuating incomes, which differ based on the number of houses from which plastic was collected, and the remaining 27.0 percent receive a regular and stable amount of income every month.

A majority receive their entitled income (93.7 percent), whereas 6.3 percent of participants have not received their fully entitled income.

A majority (80.0 percent) perceive their wages to be fair, whereas around 20.0 percent feel their wages are unfair.

Regarding the benefits, only 38.0 percent had paid holidays, while 61.7 percent did not. 99.0 percent do not receive paid medical care. Only 1.7 percent receive paid medical leave, while 97.0 percent do not. A majority (64.3 percent) says there is no maternity leave, and 60.7 percent says there are no maternity benefits. 68.0 percent of the participants said that there were no redundancy payments. 92.3 percent said there were no

pension benefits. 95.0 percent said they did not have access to disability benefits, and 99.0 percent of participants said there is no benefit, such as scholarships for children. There is no access to free food at Work (0 percent).

More than half (56.3 percent) of the participants expect their income to increase in the coming year, while 5.7 percent expect it to decrease. 38 percent believe income next year will be the same as the present.

All workers (100 percent) received monthly payments.

28.7 percent of the respondents work in wards where a loan was provided to them for entrepreneurship, while 71.3 percent had not received any loan.

32 percent of participants could save some money from their income while the remaining 68 percent were not able to secure any savings.

Table 3.5 Income security of participants

Variable		Category	n (%)	N=300
Monthly Income (₹)		Less than 10000	11(3.7)	
		10000-20000	229(76.3)	
		20100-30000	56(18.7)	
		More than 30000	4(1.3)	
Pays for PPE		Yes	214(71.3)	
		No	86(28.7)	
Income Regularity		Regular	81(27.0)	
		Fluctuating	219(73.0)	
Whether entitled income received		Yes	281(93.7)	
		No	19(6.3)	
Perception about wage		Fair	240(80.0)	
		Unfair	60(20.0)	
Benefits received	Paid Holidays	Yes	114(38.0)	
		No	185(61.7)	
		Don't know	1(0.3)	
	Paid medical care	No	297(99)	
		Don't know	4(1.3)	
	Paid Medical leave	Yes	5(1.7)	
		No	291(97)	
		Don't know	4(1.3)	
	Maternity leave	No	193(64.3)	
		Don't know	107(35.7)	
	Maternity Benefits	No	182(60.7)	
		Don't know	118(39.3)	
	Redundancy payment	No	204(68.0)	
		Don't know	96(32.0)	
	Pension	No	277(92.3)	
		Don't know	23(7.7)	
Income payment schedule		Disability benefits	No	285(95.0)
		Don't know	12(5.0)	
		Free food at work	No	300(100.0)
Payment method		Scholarship	No	297(99.0)
		Don't know	3(1.0)	
		Loan facility during crisis	Yes	86(28.7)
Savings		No	214(71.3)	
		Yes	96(32.0)	
		No	204(68.0)	

3. Employment Security

In this section, participants were asked about the type of contract in this job, protection against unjust dismissal, compensation for minimal income and training (Table 3.6).

A majority (70.0 percent) of workers did not have any agreement protecting them from unjust dismissal. Only 2.7 percent were covered under collective agreements, and 1.0 percent had both individual and collective agreements; 26.3 percent did not know if they had protection.

Half of the workers (50.0 percent) had only verbal contracts. 3.3 percent said the contracts were written. 46.3 percent had "Other" types of agreements, saying they are registered with the corporation but had no terms of agreement. 0.3 percent do not know their contract type.

Only 15.0 percent said they received compensation if their income is too low. A majority (54.7 percent) had not received any compensation. 30.3 percent were not aware of the provision for compensation.

A large majority (88.3 percent) had received training. However, 11.7 percent had not received any training.

Table 3.6 Employment security of participants

Variable	Category	n (%) N = 300
Protection Against Unjust Dismissal	No agreement	210(70.0)
	Collective agreement	8(2.7)
	Both individual and collective agreement	3(1.0)
	Don't know	79(26.3)
Type of contract	Verbal	150(50.0)
	Written	10(3.3)
	Don't know	1(0.3)
	Other	139(46.3)
Compensation if monthly income fell below a minimum	Yes	45(15.0)
	No	164(54.7)

	Don't know	91(30.3)
Training received	Yes	265(88.3)
	No	35(11.7)

3.1.4 Section D

This section includes the results of the analysis on the reasons why the participants chose their job and shares their experience about the changes in their lives after being in the job (Table 3.7).

a) Social Improvement

A majority (76.3 percent) perceived their job positively, almost one-third of participants (22.3 percent) felt their job had not brought much change in their life, and 1.3 percent reported a negative impact of work on their life.

The primary reason for choosing the job was financial necessity (70.7 percent). Only 7.7 percent cited a lack of other job opportunities. Close to a quarter of the workers said they chose the job for financial autonomy.

Table 3.7 Assessment of Social Improvement of participants

Variable	Category	n (%) N = 300
Perceived change brought by this job	Positive	229(76.3)
	Negative	4(1.3)
	Not much change	67(22.3)
*Reason for Choosing the Job (case-percent)	Financial necessity	212(70.7)
	Lack of other job opportunities	23(7.7)
	To gain financial autonomy	71(23.7)
	Suggested by family or friends	26(8.7)
	Convenience of working near to home	40(13.3)
	Others	18(6.0)

* Multiple response

3.1.5 Section E

The results of the analysis regarding the quality of life of the respondents using the WHOQOL BREF questionnaire are presented in this section.

a) Quality of life

The mean scores indicate a moderate quality of life across the different domains. The mean score was lowest in the environmental domain (52.9) and highest in the psychological domain (59.2) (Table 3.8).

The majority of the participants had moderate QOL scores across the domains, with the highest proportion in the environmental domain (77.7 percent). High QOL was most prevalent in psychological health (41.7 percent) and least in the environmental domain (9.0 percent). Conversely, poor QOL was highest in social relationships (14.3 percent) and lowest in psychological health (10.0 percent) (Table 3.9).

Table 3.8 Descriptive Summary of WHOQOL-BREF Domain.

Variable	Minimum	Maximum	Mean± SD
Physical health	21	82	57.8±12.75
Psychological health	33	75	59.2±11.92
Social relationships	25	75	54.5±9.22
Environment	31	75	52.9±8.00

Table 3.9 Distribution of Participants According to the WHOQOL-BREF Scale Domains (N=300).

QOL Domains	Poor QOL n (%)	Moderate QOL n (%)	High QOL n (%)
Physical health	40(13.3)	167(55.7)	93(31.0)
Psychological health	30(10.0)	145(48.3)	125(41.7)
Social relationships	43(14.3)	193(64.3)	64(21.3)

Environment	40(13.3)	233(77.7)	27(9.0)
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[Scores ≤45: low QOL, scores 46-65: moderate QOL, scores 66-100: high QOL(Khundia, 2025)]

3.1.6 Section F

This section contains results of the analysis on how the participants manage their time, including job-related working hours, free time after work, domestic work, sleep hours, and whether they received any help with their domestic work (Table 3.10).

a) Time Use

The mean (SD) of working hours outside home was 7.71(1.556) with a confidence interval of (7.53-7.88).

Nearly half (49.3 percent) of the workers worked 8–10 hours a day. A significant proportion (46.3 percent) worked 5–7 hours daily, and a smaller fraction (4.3 percent) worked more than 10 hours per day.

The mean (SD) of domestic work hours was 5.12(1.058) with a confidence interval of (5.00-5.24).

The mean (SD) of sleep hours of the participants was 5.77(1.144) with a confidence interval of (5.64-5.90).

Around 40.0 percent of workers get less than 6 hours of sleep, and close to 30 percent get more than 6 hours of sleep.

A majority (60.0 %) of the workers did not have free time after their total working hours (including domestic duties and wage-earning work outside the home). Only 40.0 percent had some leisure time for themselves.

Domestic work responsibilities were almost evenly distributed, with 49.7 percent receiving help and 50.3 percent managing on their own.

Table 3.10 Time-use of participants

Variable	Category	n (%) N=300
Working hours outside home	5-7 hrs	139(46.3)
	8-10 hrs	148(49.3)
	More than 10 hrs	13(4.3)
Hours of Sleep	Less than 6 hrs	120(40.0)
	6 hrs	99(33.0)
	More than 6 hrs	81(27.0)
Free Time After Work	Yes	120(40.0)
	No	180(60.0)
Help in domestic work	Yes	149(49.7)
	No	151(50.3)

3.2 Bivariate analysis

Bivariate analysis was done to examine the relationship between the key independent variables and the four domains of QOL – physical domain, psychological domain, social relations domain, and environmental domain. The associations were considered significant if the p-value was less than 0.05.

For the bivariate analysis, the four domains of quality of life were categorized into “high” and “low”. Scores less than or equal to the median value of each domain were classified as having low quality of life, and scores above the median value were classified as having high quality of life.

The results of logistic regression using quality of life as the dependent variable are presented in the following sections:

- a) Association between independent variables and Physical quality of life

- b) Association between independent variables and Psychological quality of life
- c) Association between independent variables and Social Relations quality of life
- d) Association between independent variables and Environmental quality of life
- a) Physical domain

Participants aged 31–40 years had significantly higher odds of reporting better physical quality of life compared to those aged 51–60 years, and no significant differences were found in the other age groups. Education level showed a statistically significant association, where individuals with education below high school were 39 percent less likely to have a high physical quality of life than those with high school and above high school education (Table 3.11.1).

Participants who slept less than or equal to six hours were 64 percent less likely to report high physical quality of life than those who slept more than six hours. Those with free time after work had significantly higher odds of better physical outcomes than those who don't have any free time after total working hours, both inside and outside the home (Table 3.11.2).

Women who had savings were more likely to report high quality of life compared to those without savings, but the association was slightly below statistical significance, indicating a potential positive association between better financial security and better physical health, which could be explored further. (Table 3.11.3).

Proximity to health facilities approached significance, indicating a possibility that workers who had better accessibility to the nearest health facility (<2km) were more likely to have better physical well-being. Participants who had no chronic ailments had 2

times higher odds of better physical quality of life than those who were suffering from chronic ailments. Those who had no musculoskeletal issues were significantly associated with better physical quality of life. Those who had no respiratory issues had 2.8 times higher odds of high physical quality of life. Absence of Eye issues and skin problems was also significantly associated with better physical quality of life, with 1.7 and 1.6 times higher odds, respectively (Table 3.11.4).

Table 3.11 Bivariate analysis- Physical quality of life

Physical Quality of life				Low (143)	High (157)
Predictor variables	Category	Low n (%)	High n (%)	p-value	OR 95%CI
3.11.1 Bivariate analysis of sociodemographic characteristics and physical quality of life					
Age group	≤30 years	5((100.0)	0(0.0)	0.999	0.00 0.00
	31-40 years	20(31.3)	44(68.8)	0.008	2.34 1.24-4.40
	41-50 years	52(50.5)	51(49.5)	0.871	1.04 0.62-1.75
	51-60 years	66(51.6)	62(48.4)		
Education	Below high school	70(54.7)	58(45.3)	0.036	0.61 0.38-0.96
	High school and above	73(42.4)	99(57.6)		
3.11.2 Bivariate analysis of time use and physical quality of life					
Hours of sleep	≤ 6 hours	119(54.3)	100(45.7)	<0.001	0.35 0.20-0.61
	>6 hours	24(29.6)	57(70.4)		
Free time after work	No	95(52.8)	85(47.2)	0.030	0.59 0.37-0.95
	Yes	48(40.0)	72(60.0)		
3.11.3 Bivariate analysis of income security factors and physical quality of life					
Savings	No	105(51.5)	99(48.5)	0.055	0.61 0.37-1.01
	Yes	38(39.6)	58(60.4)		
3.11.4 Bivariate analysis of health security factors and physical quality of life					
Distance from place of residence to nearest health facility	≤ 2kms	115(45.3)	139(54.7)	0.054	1.88 0.99-3.57
	>2kms	28(60.9)	18(39.1)		

Chronic ailment	No	42(35.0)	78(65.0)	<0.001	2.37 1.47-3.82
	Yes	101(56.1)	79(43.9)		
Musculoskeletal Problems	No	16(32.7)	33(67.3)	0.023	2.11 1.10-4.03
	Yes	127(50.6)	124(49.4)		
Respiratory Problems	No	76(38.8)	120(61.2)	<0.001	2.85 1.74-4.68
	Yes	67(64.4)	37(35.6)		
Eye Problems	No	106(44.7)	131(55.3)	0.049	1.75 1.001-3.08
	Yes	37(58.7)	26(41.3)		
Skin Problems	No	72(42.4)	98(57.6)	0.036	1.63 1.03-2.59
	Yes	71(54.6)	59(45.4)		

b) Psychological Domain

Participants aged 31–40 years had significantly better psychological quality of life, being over 2.5 times more likely to have a high psychological QOL compared to those over 50 years. Those with education high school and above were also more likely to report better psychological QOL than those with less than high school education, suggesting lower odds of high psychological QOL in the less educated group. Marital status was another significant factor; those who were currently married had double the odds of having good psychological QOL compared to those ever married, which includes widowed and divorced/separated participants (Table 3.12.1).

Shorter employment duration (≤ 2 years) was associated with better psychological QOL than those employed in this sector for more than 2 years (Table 3.12.2).

Those who had no free time after working hours and domestic working hours were 48 percent less likely to report good psychological health. (Table 3.12.3).

Income-related factors showed that participants earning less than or equal to Rs 20,000/month had only half the odds of good psychological health as those earning more

than Rs 20,000/month. Similarly, those who didn't have any savings had lower odds of good psychological quality of life than those who were able to save some money from their monthly income (Table 3.12.4).

Among social improvement indicators, perceiving a positive change brought about by work had a strong association with higher psychological QOL than those who perceived no change at all, while those perceiving a negative change in life had no association. (Table 3.12.5).

Health-related variables played a prominent role. Participants living within 2 km of a health facility had significantly better psychological QOL. Those without acute ailments within the last 2 weeks had 1.7 times higher odds of good psychological health. Those without any chronic ailments were 92 percent more likely to have better psychological health than those with chronic ailments. Participants who were not hospitalized in the last year also had better outcomes, with 2.6 times higher odds. Participants without musculoskeletal and respiratory issues were 2.4 and 1.7 times more likely to have good psychological QOL (Table 3.12.6).

Table 3.12 Bivariate analysis- Psychological quality of life

Psychological Quality of life(N=300)				Low (131) High (169)	
Predictor variables	Category	Low n (%)	High n (%)	p-value	OR 95%CI
Table 3.12.1 Bivariate analysis of sociodemographic characteristics and psychological quality of life					
Age group	≤30 years	3(60.0)	2(40.0)	0.663	0.66 0.10-4.125
	31-40 years	18(28.1)	46(71.9)	0.004	2.55 1.34-4.87
	41-50 years	46(44.7)	57(55.3)	0.419	1.23 0.73-2.08
	51-60 years	64(50.0)	64(50.0)		
Education	Below high school	67(52.3)	61(47.7)	0.009	0.54 0.33-0.85

	High school and above	64(37.2)	108(62.8)		
Marital status	Currently married	87(39.2)	135(60.8)	0.009	2.00 1.19-3.38
	Ever married	44(56.4)	34(43.6)		
Table 3.12.2 Bivariate analysis of details of work and psychological quality of life					
Employment duration	≤ 2 years	44(36.1)	78(63.9)	0.029	1.69 1.05-2.71
	> 2 years	87(48.9)	91(51.1)		
Table 3.12.3 Bivariate analysis of time use and psychological quality of life					
Free time after work	No	90(50.0)	90(50.0)	0.007	0.51 0.32-0.83
	Yes	41(34.2)	79(65.8)		
Table 3.12.4 Bivariate analysis of income security factors and psychological quality of life					
Monthly income	≤20000	112(46.7)	128(53.3)	0.038	0.53 0.29-0.96
	>20000	19(31.7)	41(68.3)		
Savings	No	100(49.0)	104(51.0)	0.007	0.49 0.29-0.82
	Yes	31(32.3)	65(67.7)		
Table 3.12.5 Bivariate analysis of social improvement and psychological quality of life					
Change brought to life	Positive	88(38.4)	141(61.6)	0.002	2.37 1.36-4.13
	Negative	3(75.0)	1(25.0)	0.550	0.49 0.04-5.00
	Not much change	40(59.7)	27(40.3)		
Table 3.12.6 Bivariate analysis of health security factors and psychological quality of life					
Distance from place of residence to nearest health facility	≤ 2kms	101(39.8)	153(60.2)	0.002	2.84 1.47-5.47
	>2kms	30(65.2)	16(34.8)		
Acute ailment	No	67(38.1)	109(61.9)	0.020	1.73 1.09-2.76
	Yes	64(51.6)	60(48.4)		
Chronic ailment	No	41(34.2)	79(65.8)	0.007	1.92 1.19-3.10
	Yes	90(50.0)	90(50.0)		
Hospitalization	No	114(41.6)	160(58.4)	0.023	2.65 1.14-6.15
	Yes	17(65.4)	9(34.6)		
Musculoskeletal Issues	No	13(26.5)	36(73.5)	0.010	2.45 1.24-4.85
	Yes	118(47.0)	133(53.0)		
Respiratory Issues	No	76(38.8)	120(61.2)	0.020	1.77 1.09-2.86

	Yes	55(52.9)	49(47.1)		
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c) Social Relations Domain

Age was a significant determinant. Participants aged 31–40 years had over 3 times higher odds of having good social QOL compared to those aged 51–60 years, and those aged 41–50 years also showed better outcomes, with 1.8 times higher odds. Education played a vital role: those with education below high school were significantly less likely to report good social QOL (56.1 percent) compared to those with higher education levels, indicating that higher education is protective against poor social quality of life. Marital status showed a strong association—those who were currently married were six times more likely to report high social quality of life compared to the ever-married group (Table 3.13.1).

Employment duration was inversely associated: participants employed for more than two years had lower social quality of life than those who were employed for less than or equal to two years (Table 3.13.2).

In terms of income security, those earning less than or equal to Rs 20,000/month were 49 percent less likely to have better social QOL than those earning above Rs 20000/month (Table 3.13.3).

Regarding the factors of health security, participants living within 2 km of a health facility had double the odds of good social quality of life. Additionally, those without chronic ailments were 75 percent more likely to have high social QOL than those with

chronic ailments. Those without musculoskeletal issues had double the odds of good social quality of life (Table 3.13.4).

Table 3.13 Bivariate analysis - Social quality of life

Social Quality of life(N=300)				Low (160) High (140)	
Predictor variables	Category	Low n (%)	High n (%)	p-value	OR 95%CI
Table 3.13.1 Bivariate analysis of sociodemographic characteristics and social quality of life					
Age group	≤30 years	2(40.0)	3(60.0)	0.275	2.76 0.44-17.17
	31-40 years	23(35.9)	41(64.1)	<0.001	3.28 1.75-6.15
	41-50 years	52(50.5)	51(49.5)	0.028	1.80 1.06-3.07
	51-60 years	83(64.8)	45(35.2)		
Education	Below high school	83(64.8)	45(35.2)	<0.001	0.43 0.27-0.70
	High school and above	77(44.8)	95(5.2)		
Marital status	Currently married	96(43.2)	126(56.8)	<0.001	6.00 3.17-11.33
	Ever married	64(82.1)	14(17.9)		
Table 3.13.2 Bivariate analysis of details of work and social quality of life					
Employment duration	≤ 2 years	51(41.8)	71(58.2)	<0.001	2.19 1.37-3.51
	> 2 years	109(61.2)	69(38.8)		
Table 3.13.3 Bivariate analysis of income security factors and social quality of life					
Monthly income	≤20000	136(56.7)	104(43.3)	0.022	0.51 0.28-0.90
	>20000	24(40.0)	36(60.0)		
Table 3.13.4 Bivariate analysis of health security factors and social quality of life					
Distance from place of residence to nearest health facility	≤ 2kms	129(50.8)	125(49.2)	0.040	2.00 1.03-3.88
	>2kms	31(67.4)	15(32.6)		
Chronic ailment	No	54(45.0)	66(55.0)	0.019	1.75 1.09-2.79
	Yes	106(58.9)	74(41.1)		

Musculoskeletal Issues	No	19(38.8)	30(61.2)	0.027	2.02 1.08-3.78
	Yes	141(56.2)	110(43.8)		

d) Environmental Domain

The bivariate analysis of environmental quality of life among 300 participants reveals several significant factors associated with higher or lower environmental well-being.

Housing ownership was a key predictor; individuals living in their own homes were 74 percent significantly more likely to report better environmental quality of life compared to those living in rented accommodations (Table 3.14.1).

Free time after work had a strong positive association—those without free time post work had 0.5 times lower odds of having better environmental quality of life (Table 3.14.3).

Participants without savings also reported 56 percent less likely chances of significantly higher environmental quality of life than those with savings (Table 3.14.4).

In terms of social empowerment, those who reported a positive change in life had twice the odds of high environmental quality of life compared to those who did not report any significant change. Among those who reported a negative change in life, the environmental quality of life was lower, though findings here were not statistically significant (Table 3.14.5).

Health-related factors were also highly influential. Participants living within 2 km of a health facility had over 3 times the odds of experiencing good environmental quality of life than those living more than 2 km away. The absence of acute ailments in the last 2

weeks was significantly associated with better environmental quality of life (1.6 times higher odds). The absence of musculoskeletal issues had more than double the odds of a good environmental quality of life (Table 3.14.6).

Table 3.14 Bivariate analysis - Environmental quality of life

Environmental Quality of life(N=300)				Low (148)	High (152)
Predictor variables	Category	Low n (%)	High n (%)	p-value	OR 95%CI
Table 3.14.1 Bivariate analysis of sociodemographic characteristics and environmental quality of life					
Ownership status of house	Own	96(45.3)	116(54.7)	0.030	1.74 1.05-2.88
	Rented	52(59.1)	36(40.9)		
Table 3.14.2 Bivariate analysis of time use and environmental quality of life					
Free time after work	No	101(56.1)	79(43.9)	0.04	0.50 0.31-0.80
	Yes	47(39.2)	73(60.8)		
Table 3.14.3 Bivariate analysis of income security factors and environmental quality of life					
Savings	No	110(53.9)	94(46.1)	0.021	0.56 0.34-0.91
	Yes	38(39.6)	58(60.4)		
Table 3.14.4 Bivariate analysis of social improvement and environmental quality of life					
Change brought to life	Positive	103(45.0)	126(55.0)	0.012	2.05 1.17-3.59
	Negative	3(75.0)	1(25.0)	0.624	0.56 0.05-5.68
	Not much change	42(62.7)	25(37.3)		
Table 3.14.5 Bivariate analysis of health security factors and environmental quality of life					
Distance from place of residence to health facility	≤ 2kms	115(45.3)	139(54.7)	0.001	3.06 1.54-6.10
	>2kms	33(71.7)	13(28.3)		
Acute ailment	No	78(44.3)	98(55.7)	0.039	1.62 1.02-2.58
	Yes	70(56.5)	54(43.5)		
Musculoskeletal Issues	No	16(32.7)	33(67.3)	0.012	2.28 1.19-4.36
	Yes	132(52.6)	119(47.4)		

3.3 Multivariable Analysis

Multivariable regression was carried out to estimate the predictors in the context of quality of life. The analysis measures the effect of a change in the variation of one variable (independent) on the other variables in the model. The purpose of the multivariate analysis was to understand how important, both individually and when acting together, the independent variables were for explaining the variation in the dependent variable. The net bearing effect of different independent variables was explained in terms of the odds ratio (OR). The model selected examined changes in each one of the outcome variables (quality of life) against the independent variables. The results obtained in bivariate analysis were subjected to logistic regression analysis, after adjusting for major confounders.

A) Physical Domain

After adjusting for other factors, results showed that inadequate sleep (≤ 6 hours) was strongly associated with poorer physical quality of life, suggesting that individuals with less sleep were approximately 62 percent less likely to report high physical quality of life. Absence of free time after work significantly predicts lower physical well-being. Respiratory issues were significantly associated with poor health, meaning individuals with respiratory problems are over 2.5 times more likely to report poor quality of life.

Table 3.15 Multivariable analysis of physical quality of life with significant independent variables

N=300		Low (143) High (157)	
Predictor variables	Categories	p value	AOR 95%CI
Age group	≤ 30 years	0.999	0.00
	31-40 years	0.124	1.83 0.84-3.96

	41-50 years	0.865	1.05 0.57-1.93
	51-60 years		
Education	Below high school	0.151	0.66 0.38-1.16
	High school and above		
Hour of sleep	≤ 6 hours	0.001	0.37 0.20-0.68
	>6 hours		
Free time after work	No	0.048	0.59 0.35-0.99
	Yes		
Chronic ailment	No	0.072	1.65 0.95-2.86
	Yes		
Musculoskeletal issues	No	0.317	1.44 0.70-2.95
	Yes		
Respiratory issues	No	0.001	2.57 1.45-4.54
	Yes		
Eye issues	No	0.494	1.24 0.66-2.32
	Yes		
Skin issues	No	0.299	1.32 0.78-2.24
	Yes		

B) Psychological Domain

Workers who had free time after work were more likely to report high psychological health. Similarly, those who had no savings were 56 percent less likely to experience better psychological health. Living within 2 kilometers of a health facility was associated with a nearly threefold increase in odds of better psychological health. Individuals who had not experienced hospitalization in the past 1 year and those with no musculoskeletal issues had 2.7 and 2.1 times higher odds of better psychological health, respectively. Though the odds are higher in these, the result is borderline significant as the confidence interval is close to 1.

Table 3.16 Multivariable analysis of psychological quality of life with significant independent variables

N=300		Low (131) High (169)	
Predictor variables	Categories	p value	AOR 95%CI
Age group	≤30 years	0.897	1.18 0.09-14.62

	31-40 years	0.054	2.30 0.98-5.37
	41-50 years	0.406	1.30 0.69-2.47
	51-60 years		
Education	Below high school	0.502	0.81 0.45-1.47
	High school and above		
Marital status	Currently married	0.179	1.54 0.81-2.92
	Ever married		
Employment duration	≤ 2 years	0.225	1.40 0.81-2.44
	> 2 years		
Free time after work	No	0.023	0.52 0.30-0.91
	Yes		
Monthly Income	≤20000	0.130	0.59 0.30-1.16
	>20000		
Savings	No	0.006	0.43 0.23-0.78
	Yes		
Change brought to life	Positive	0.219	1.48 0.79-2.79
	Negative	0.853	0.78 0.06-9.63
	Not much change		
Distance from place of residence to health facility	≤ 2kms	0.006	2.85 1.35-6.02
	>2kms		
Acute ailment	No	0.157	1.50 0.85-2.64
	Yes		
Chronic ailment	No	0.438	1.25 0.70-2.22
	Yes		
Hospitalization	No	0.044	2.74 1.02-7.34
	Yes		
Musculoskeletal issues	No	0.048	2.16 1.008-4.66
	Yes		
Respiratory issues	No	0.168	1.50 0.84-2.68
	Yes		

C) Social Relations Domain

Participants who were currently married had 4.8 times significantly higher odds of reporting better social quality of life compared to those who were ever married.

Longer employment duration (> 2 years) was associated with lower odds of better social quality of life. Additionally, individuals without musculoskeletal issues were

significantly more likely to report higher social quality of life with 2 times higher odds.

Table 3.17 Multivariable analysis of social quality of life with significant independent variables

N=300		Low (160) High (140)	
Predictor variables	Categories	p value	AOR 95%CI
Age group	≤30 years	0.746	1.39 0.18-10.52
	31-40 years	0.300	1.49 0.69-3.20
	41-50 years	0.294	1.39 0.75-2.57
	51-60 years		
Education	Below high school	0.749	0.91 0.50-1.62
	High school and above		
Marital status	Currently married	<0.001	4.89 2.42-9.87
	Ever married		
Employment duration	≤ 2 years	0.021	1.87 1.10-3.17
	> 2 years		
Monthly income	≤20000	0.052	0.53 0.28-1.004
	>20000		
Distance from place of residence to health facility	≤ 2kms	0.114	1.81 0.86-3.79
	>2kms		
Chronic ailment	No	0.266	1.36 0.79-2.33
	Yes		
Musculoskeletal issues	No	0.042	2.07 1.02-4.17
	Yes		

D) Environmental Domain

Individuals who owned their homes had 1.7 times higher odds of reporting a better environmental quality of life compared to those in rented accommodation, but the result is borderline significant. Lack of free time after work was negatively associated with higher environmental quality of life, being 45 percent less likely to have good environmental health. Proximity to health facilities (≤ 2 km) emerged as a strong positive predictor, with over 3 times higher odds of good environmental quality of

life. Additionally, those without acute ailments had 1.7 times higher odds of enjoying a better environmental quality of life.

Table 3.18 Multivariable analysis of environmental quality of life with significant independent variables

N=300		Low (131) High (169)	
Predictor variables	Categories	p value	AOR 95%CI
Ownership status of the house	Own	0.049	1.71 1.00-2.93
	Rented		
Free time after work	No	0.023	0.55 0.33-0.92
	Yes		
Savings	No	0.072	0.60 0.35-1.04
	Yes		
Change brought to life	Positive	0.220	1.46 0.79-2.68
	Negative	0.851	0.79 0.07-8.90
	Not much change		
Distance from the place of residence to the health facility	≤ 2kms	0.001	3.29 1.59-6.78
	>2kms		
Acute ailment	No	0.030	1.75 1.06-2.89
	Yes		
Musculoskeletal issues	No	0.057	1.96 0.98-3.93
	Yes		

CHAPTER 4

DISCUSSION AND CONCLUSION

4.1 Discussion and findings

The study aimed to understand the health and socio-economic security and quality of life of women employed as waste collectors under the Thiruvananthapuram Corporation.

1. Baseline characteristics of the study population

All the respondents in the study were women, and this is due to the fact that the waste collectors were mostly engaged through the ongoing Kudumbashree mission with a state-wide network of self-help groups engaged in micro credit for poverty alleviation. This is also reflected in the records of the Corporation that there are 1179 Harithakarmasena workers working under Thiruvananthapuram Corporation, which includes 1138 females and 41 males.

The majority of workers were within the 50-60 age group, and only less than two percent of the respondents were below 30 years old. This is higher than other studies in Mumbai and Telangana, where the average ages were 34 and 41 years, respectively.(Chokhandre et al., 2017; Ramitha et al., 2021). However, distinct from other states, more than half of workers had completed up to high school or higher secondary education, which may be due to the higher literacy rates in Kerala (Ramitha et al., 2021; Thakur et al., 2018). More than half of the study population belongs to the Scheduled caste/ tribe category. This might be due to the fact that waste collection and management have been historically carried out by people from the lower castes, and that a large number of workers in many wards, particularly closer to the city, were from the slums and resettlement colonies.

2. Health Security

The main objective of the health security of workers was assessed on the basis of their a) health risks, which include acute, chronic, and occupational health outcomes, b) having access to healthcare services, and c) ability to pay for medical care and medicine. With respect to having health outcomes, factors like the presence/absence of acute and chronic ailments, musculoskeletal, respiratory, eye, and skin problems, vaccination coverage, and history of hospitalization were taken into consideration. Accessibility was assessed by the distance from the place of residence to the nearest hospital. Availability and usage of health insurance were considered under the ability to pay for medical care and medicine

Health outcomes - More than eighty percent of the workers reported suffering from musculoskeletal issues in the previous three months. This is comparable to a study done in Chennai, which reported that about 91 percent of municipal solid waste collectors suffered from musculoskeletal disorders (Reddy and Yasobant, 2015). Slightly more than one-third of the workers (34.7 percent) in my study reported that they suffered from respiratory illnesses in the previous three months. This is lower when compared to similar studies done among waste collectors in Delhi and Maharashtra, which reported a prevalence of 94 percent and 45 percent, respectively. The difference could be due to the difference in other conditions, including air pollution in the bigger cities of Delhi and Maharashtra (Patil and Raje, 2020; Ray et al., 2004). Chronic ailments were reported by three-fifths of the women waste collectors (60 percent) in my study, out of which 57.5 percent reported hypertension. Almost 42 percent reported having acute ailments in the previous two weeks, including fever, wheezing, body pain, etc. One fifth of the women (21 percent) reported having eye infections, such as redness of eyes, watering of eyes or itching of eyes and this was comparable to a prevalence of 29 percent reported by a similar study carried out in Mumbai

(Chokhandre et al., 2017). Prevalence of skin problems like itching, allergy was 43.3 percent in my study, which was higher than the prevalence of 36.4 percent reported by another study done in Kerala among municipal solid waste collectors(Thayyil et al., 2013).

Hospitalisation - Less than ten percent of the workers in this study were hospitalized in the previous year, and the reasons for hospitalization included dengue, leptospirosis, fungal infections, hypertension, road traffic accidents, etc. All the respondents who were hospitalised reported that the expenditure for the hospitalizations was borne by themselves

Vaccination status - None of the workers had received any employee-initiated pre-recruitment vaccinations. While this is similar to another study done in Kerala which reported that only a very small proportion (0.9 percent) of waste workers received Hepatitis-B vaccines (Thayyil et al., 2013), a study from Nepal had reported a large proportion (85.3 percent)of waste workers having received Tetanus toxoid and HBV vaccination.(Marahatta et al., 2017; Thayyil et al., 2013). It was reported by the respondents that they take a tetanus toxoid shot when they have deep injuries through sharps and avoid vaccination if it is a smaller injury.

Healthcare accessibility was assessed, and for more than half of the waste collectors, the distance to the nearest health facility was within 1 kilometer from their residence. Almost 32 percent of individuals, the nearest health facility was within 1.5-2 kilometers from their place of stay, and for 15.3 percent of workers, the distance was within 5-10 kilometers..

Health Insurance - About 62 percent of respondents were enrolled in a health insurance scheme, the most common being Pradhan Mantri Jan Arogya Yojana (PM-JAY) (51.1 percent) and the health insurance card issued by the Thiruvananthapuram Corporation (76.1 percent) to the workers. However, it was reported that the cards provided by the Corporation were mostly invalid since they were not renewed on time, and the workers

were not aware of the health facilities where the card could be used. Close to forty percent of the workers were not covered by any health insurance scheme either on their own or by their employer. This, in addition to those who had invalid insurance cards meant a significant proportion of the municipal solid waste collectors did not have health insurance coverage.

3. Socio-economic security

Socioeconomic security was assessed with respect to three dimensions: work security, income security and employment security and is discussed below.

a) Work Security

Work security relates to safety at work and working conditions provided by the employer and was assessed by the history of injury at work and conditions at the work place including sanitation facilities and PPE usage.

Injury at work: One in three (32 percent) women waste collectors reported having an injury during work in the previous three months. Similar studies done in Mumbai and Ethiopia had reported lower figures of 75 percent and 60.4 percent respectively but the reference period in those studies were six and twelve months. (Chokhandre et al., 2017; Temesgen et al., 2022). Most common injuries were puncture wounds caused by glass pieces, tips of used insulin syringes etc. The main reason for such wounds according to the workers were the residents' improper sorting and packing of waste and the workers failing to use protective gloves. Most injuries happened when they tried compressing the waste materials for proper packing and loading. The other injuries were sprains and fractures during loading of waste bundles, falling of the waste vans and slip and fall during work in the rains. Injury at work was significantly associated with higher odds of musculoskeletal and

dermatological issues in this study, probably suggesting common underlying hazardous work conditions.

Sanitation facilities Around three-fourths (73 percent) of the workers reported that there were no employer provided sanitation facilities in their workspaces. This was much more than a similar study from Bangladesh which had reported that 58.4 percent of the waste collectors did not have access to sanitation facilities (Hossain et al., 2025). During data collection, many respondents reported difficulties such as refraining from drinking water during work, and needing to take leave during menstruation due to the lack of toilets.

Personal Protective Equipment: Around half of the workers (45 percent) did not use any Personal Protective Equipment like masks or gloves, and the main reason cited was that they were not provided by the employer. Contrary to this, in a study among municipal solid waste collectors in Ethiopia, more than 90 percent of the workers used PPE at work (Temesgen et al., 2022). Noncompliance in using PPE and a lack of its provision by employers have been reported by several studies. (Gebremedhin, 2016; Lissah et al., 2020; Thakur et al., 2018). During the interview, many also reported that the gloves provided by the Corporation were not fit for waste collection and could not be used during sorting. Nonuse of masks was reportedly due to discomfort, difficulty in breathing, and the inconvenience as they have to blow whistles frequently to inform the residents of their arrival, and about 28.3 percent did not feel the need to use any protective equipment. Regular PPE usage was found to be associated with a lower risk of chronic ailments in this study.

According to the Solid Waste Management Rules, 2016, India, all municipal solid waste workers handling solid waste are to be provided with PPEs, including uniforms, fluorescent jackets, gloves, boots, and masks by the employers. In addition, they are to be provided

with social benefits such as health checkups and medical care all MSW workers (contractual or permanent) have the right to access to facilities like toilets and storage space for their belongings. However, there is a large proportion of workers reporting a lack of sanitation facilities and a lack of PPE from the present study contradicts the rule (Manual on Solid Waste Management Systems (CPHEEO-2016) : Ministry of Urban Development, 2016).

b) Income Security

Income security refers to having an adequate income for a decent standard of living. Monthly income, benefits from the employer, income regularity, loans provided by the employer, and savings were explored under this domain. A majority earned between Rs 10,000 and Rs 20,000, while around one-fifths (3.7 percent) earned below Rs 10,000/. Around 1.3 percent earned more than Rs 30,000, where they had more commercial establishments and markets.

The majority of the workers (73 percent) reported that they had fluctuating incomes. Their income is sourced from the monthly user fee that they collect from households and shops. The fluctuation in their incomes happens because it is dependent on whether the households provide their waste in a given month or not, or they are out of station, or have moved out of their rented homes, etc. Only around half (54 percent) of the workers have never received compensation if they fell below a minimum of Rs10,000. Around 15 percent had received some compensation at the beginning of their job when their income fell below Rs 10,000.

Regarding other benefits, the workers were provided a festival bonus of Rs 1000/- once in year. There was no uniformity in the provision of paid holidays per month to the workers. It ranged from one to four days in the different wards, with one holiday per month being the most common. Close to one-third (28.7 percent) of the workers worked in municipal

wards that provided them with loans for entrepreneurship, which were used to meet their personal expenses. Slightly more than one-third (32 percent) of them could make a saving from their income. The savings were mostly deposited in chitty schemes, and in some of the wards they deposit 10% of their monthly income as a provident fund either by themselves by the junior health inspector of the Corporation.

A majority of the workers used their own income to pay for PPE, materials for waste collection like gunny bags and hire vehicles for transporting waste. Since such amenities are not provided by the Corporation in most of the wards, the workers are forced to bear the additional financial burden.

c) Employment Security

Employment security was assessed in terms of security of institutional framework for employment. The objective indicators taken were the presence of a work contract, training received, protection from unjust dismissal, and compensation for minimal income.

In this study, half of the participants reported being employed on a verbal contract, while 46.3 percent said that there was no contract in place. The Corporation confirmed that the waste collectors were not under any formal contract; therefore, they could be considered as 'informal workers under the formal sector'. A majority of the workers (70 percent) reported that there was no law to protect them from unjust dismissal and that they could be removed from work by the authorities at any time.

Training: Close to ninety percent (88.3 percent) had received training in their respective wards on the different aspects of waste management. The training included the classification of waste, collection and sorting of waste, QR code scanning, and entering of house-to-house waste collection details in the Harithamithram app provided to them. This finding is in contrast to the study from Telengana where the MSW workers had no training

before or after being employed. (Ramitha et al., 2021). Another study carried out in Ethiopia reported that about 42.6 percent of the waste collectors had received prior training before being employed as solid waste collectors in (Gebremedhin, 2016).

4. Time Use

Time use survey was done to explore the amount of time these women workers spent on paid employment activities and on unpaid activities like caregiving and domestic work. Working hours outside the home differed across wards, ranging from 5 hours to almost 12 hours. This suggests that workload was more in wards where the area of the ward or the number of houses were more.

Hours devoted to domestic work varies from 2 hours to 8 hours. Workers in the older category living in extended families spend much less time in domestic work where the work will be done by daughter or daughter-in law in most cases. In the present study, workers who live in nuclear families were found to be having 2 times higher odds of spending more than 5 hours on domestic work than those who live in extended or joint families. Nearly two out of five (40 percent) of the study participants get only less than 6 hours of sleep daily. Many of them reported lack of sleep due to stress, family problems and not having enough time after completing all the work. Nearly two thirds (60 percent) of workers do not have free time after total working hours. About half of the workers received help in their domestic work from children, in-laws, and mother and in some cases their spouse.

5. Social Improvement

Participants were asked about the reason for choosing the job as waste collector. Main reason (70.7 percent) told was financial necessity. Other reasons include autonomy, family or social ties, work-life balance, stability, spirit of fellowship, social service, means of exercise for addressing obesity etc. 76.3% perceived a positive change brought by this job.

Only 1.3% reported negative change in their life after choosing this job. 22.3% of the study population was of the opinion that the job didn't make any significant change in their lives.

Positive reflections from the workers documented during the interviews

- 'When I was working as a house-maid, I was looked down upon. Now I have enough money to spend for myself without depending on my husband.'
- 'I am able to take care of my children's studies and also repay some of the loans'.
- 'Everyone recognizes me. I feel much more valued in society'
- 'At first I received bad experience from people not behaving nicely but now things have changed. If I sit at home, I will get bored, so this job is fine for me'
- 'Financial and women empowerment as well as service to the society'
- 'Getting more freedom than other jobs'
- 'I was able to buy a 2-wheeler with this income and has made me an independent woman'.
- 'I am uneducated..so can't secure other jobs. So this job is a blessing for me'
- 'Had opportunities to socialize, attend various cultural events in city, met cooperation authorities. Earlier I was just sitting at home with no exposure to outside world'.
- 'I didn't know how to use mobile phone or this much exposure to English language before coming to this job. Now I am more exposed to outside world and gaining more knowledge'
- 'During Covid time, many people were dying. At that time i thought of doing some form of social service to help our people. The same time this job opportunity came through Kudumbashree. So decided to take this job. At first people were not at all behaving good to us but now things are changing and I am happy with the decision I took'.

6. Quality of life

The Quality of Life of the workers was assessed using the validated WHO BREF questionnaire in Malayalam. The highest mean score was in the psychological domain of the quality of life, and the lowest was in the environmental domain.

The proportion of workers who had a poor quality of life was highest in the social domain (14.3 percent). This could indicate issues related to their personal relationships and support from their family and social circles. Another study done in urban India had concluded that comparatively low QOL in the social domain among garbage collectors was likely due to their low social position and poverty negatively affecting their social lives. (Kulkarni and Pingale, 2019).

High quality of life was most prevalent in the psychological domain (41.7 percent). This could be due to the fact that most of the workers were satisfied with the financial security that the job offered and enjoyed the spirit of fellowship during their working hours.

Better quality of life in the physical domain was significantly associated with those who had adequate sleep and the absence of respiratory issues in the present study. This reflects the importance of rest and proper sleep, and physical well-being in improving the quality of life of the waste collectors. The presence of respiratory issues may be due to a lack of protection against occupational exposures or a lack of timely healthcare.

The association between lack of savings and lower psychological quality of life may reflect financial insecurity, which can lead to chronic stress, anxiety, and reduced sense of control over life circumstances. Similarly, the absence of free time after work may limit opportunities for relaxation, social interaction, or self-care, contributing to mental fatigue and emotional strain. On the other hand, not having a recent history of hospitalization likely reflects better overall health, which can positively influence psychological well-being. Living within 2 km of a health facility may enhance a sense of security and access to timely care, contributing to reduced stress and a better perceived quality of life.

Currently married women, higher income, shorter job duration and absence of musculoskeletal conditions were all significantly associated with higher social quality of

life among the participants. This may be because marriage can provide emotional and social support and health conditions like musculoskeletal issues may lead to social isolation. Shorter job duration was associated with better social quality of life. This might be due to the following reasons: a) Less Occupational Burnout- Those newer to the job might not yet have experienced the long-term emotional exhaustion and burnout that often damages relationships, both at work and at home. b) Greater Optimism and Hopefulness - Shorter duration workers might still see waste collection as a temporary or transitional job, maintaining higher morale and better social engagement. c) Better Physical Appearance and Self-Esteem - Physical wear and visible health impacts (skin conditions, injuries) increase with time. Newer workers might look healthier and feel more confident, positively affecting how they interact socially. d) Less Internalized Stigma- Over time, workers may internalize negative societal views about their occupation, affecting their confidence and social behaviour. Shorter duration workers might still resist or be less affected by this. e) Younger Age.

Owning a house was associated with better environmental quality of life, with borderline significance. In a study done in Bangalore, those who lived in pucca houses had higher scores in the environmental domain than those who lived in huts(Zabeer et al., 2019). This suggests that satisfaction with the conditions of the living place plays a vital role in an individual's perception of environmental quality of life. Similar to the findings in the study, insufficient income, underlying diseases, work environment, job security, and personal growth in life all contribute to the quality of life of a working individual in studies done in other areas(Chaisurin et al., 2025; Ganapathi, 2016).

4.2 Strengths of the study

Data was collected by a single investigator, resulting in the elimination of interobserver variability. While many existing studies on waste collectors predominantly focus on occupational health hazards and related risks, this study adopts a more holistic approach. In addition to occupational health, it also explores quality of life, time use patterns, and socio-economic security, offering a broader understanding of the lived realities of waste collectors. By investigating aspects such as contractual agreements, job benefits, and legal protections, the study provides valuable insight into how integrated these workers are within the formal labour sector. This is crucial for identifying gaps in policy coverage and labour rights.

4.3 Limitations of the study

The current study had a cross-sectional design, which portrays the reality of a specific community in a specific city, thus not making generalizations about health and working conditions of waste collectors from other places. Health morbidities among participants were self-reported, therefore indicating the possibility of misreporting and recall bias. The absence of validated scoring systems for health security limited the ability to establish more causal relationships. Several aspects of the data collected, particularly those relating to experiences, could not be quantitatively analyzed, thus affecting the comprehensiveness of the study.

4.4 Conclusion

There is considerable morbidity among the women waste collectors with musculoskeletal issues being predominant among occupation-related health issues, and hypertension is predominant among chronic diseases. Although the majority possess employer-supported health insurance cards, these are often impractical or inadequate for meeting their actual

healthcare needs. Lack of sanitation facilities is the most common work insecurity of the participants. Lack of access to pensions or government welfare schemes leaves them vulnerable to financial instability. They are not under any type of contract, suggesting they are considered informal workers under the formal sector. The study demonstrates the associations among health security factors such as morbidities and time use patterns and how this affects their quality of life. However, despite these challenges, many women have reported improved self-esteem after joining Harithakarmasena, along with greater participation in community life and decision-making. The collective identity and recognition from the local community have fostered a sense of dignity and empowerment, helping achieve a degree of social transformation. This highlights that while structural vulnerabilities persist, the platform has the potential to serve as a vehicle for empowerment and progressive change when backed by supportive policies and inclusive welfare measures. A focus on their health and financial security with proactive schemes could uplift the lives of the women waste collectors employed by the Corporation.

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ANNEXURE – I

Participant Information Sheet

Greetings Madam,

I am Dr Dharsin Priya D, an MPH student at Achutha Menon Centre of Health Science Studies in Sree Chitra Thirunal Institute of Medical Sciences and Technology, Trivandrum. As part of my course I am carrying out a dissertation study titled “Assessment of Health Security, Socio-Economic Security, and Quality of Life of women employed as waste collectors under Thiruvananthapuram Corporation”.

Efficient solid waste management is crucial for a city like Trivandrum, making the role of Harithakarmasena workers particularly valuable. The aim of the study is to understand the extent of health and socio-economic security of women Harithakarmasena workers working under Thiruvananthapuram Corporation and also to understand their quality of life and factors related to them. In this regard I would like to ask you some questions. I will ask you some questions about your household, work related details, your health and access to health care. The interview will take about 25-30 minutes of your time.

Your participation in this study will not give any direct benefit to you now. However, this information can help to understand the health and social security needs of women working in the waste management sector and help authorities to develop policies to improve their working and living conditions.

The information that you provide will be kept confidential and safe with the researcher. The participation in the study is completely voluntary, and at any point of time you can withdraw from the study. It will not harm you in any way. There is no likely direct harm from participating in the study. Discussing about insecurities may induce stress and discomfort, in such instances we can take a break and resume only if you are comfortable.

Contact information

If you have any research related questions or you would like to verify my credentials, you may contact me or the member secretary of our institute’s ethics committee at the following address:

Dr Dharsin Priya D

MPH 2023, (E-Code:50342)

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INFORMED CONSENT FORM

a) I have read/been read out about this study in the information form and I have clarified all the doubts that I had.

☐

b) I also understand that my participation in the study is voluntary and that I can, at any time, discontinue my participation in the study.

☐

c) I understand my identity won't be revealed in any published or released information from this study.

☐

d) I am voluntarily agreeing to be part of this study

☐

Date :

Signature

VERBAL CONSENT (In case needed)

Signature of witness:

Relation to the participant:

Name of the witness:

Name of the Investigator:

Signature:

----/----/----- **Date**

ANNEXURE – II

പങ്കെടുക്കുന്നയാൾക്കുള്ള വിവരങ്ങൾ അടങ്ങിയ ഷീറ്റ്

അഭിവാദ്യങ്ങൾ മാധം,

ഞാൻ ഡോ. ദർശിൻ പ്രിയ, തിരുവനന്തപുരം ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജിയിലെ അച്ചുതമേനോൻ സെന്റർ ഓഫ് ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിലെ പബ്ലിക് ഹെൽത്ത്(എംപിഎച്ച്) വിദ്യാർത്ഥിനിയാണ്. എന്റെ കോഴ്സിന്റെ ഭാഗമായി "തിരുവനന്തപുരം കോർപ്പറേഷനു കീഴിൽ മാലിന്യ ശേഖരിക്കുന്നവരായി ജോലി ചെയ്യുന്ന സ്ത്രീകളുടെ ആരോഗ്യ സുരക്ഷയുടെയും, സാമൂഹിക-സാമ്പത്തിക സുരക്ഷയുടെയും ജീവിതനിലവാരത്തിന്റെയും വിലയിരുത്തൽ" എന്ന പേരിൽ ഒരു പ്രബന്ധ പഠനം നടത്തുന്നു.

കാര്യക്ഷമമായ വരമാലിന്യ സംസ്കരണം തിരുവനന്തപുരം പോലൊരു നഗരത്തിന് നിർണ്ണായകമാണ്, ഇത് ഹരിതകർമ്മസേന പ്രവർത്തകരുടെ പങ്ക് വിലപ്പെട്ടതാക്കുന്നു. തിരുവനന്തപുരം കോർപ്പറേഷനു കീഴിൽ ജോലി ചെയ്യുന്ന വനിതാ ഹരിതകർമ്മസേന അംഗങ്ങളുടെ ആരോഗ്യ, സാമൂഹിക-സാമ്പത്തിക സുരക്ഷയുടെ വ്യാപ്തി മനസ്സിലാക്കുക, അവരുടെ ജീവിതനിലവാരവും അതുമായി ബന്ധപ്പെട്ട ഘടകങ്ങളും കണ്ടെത്തുക എന്നിവയാണ് പഠനത്തിന്റെ ലക്ഷ്യം. ഇക്കാര്യത്തിൽ ഞാൻ നിങ്ങളോട് ചില ചോദ്യങ്ങൾ ചോദിക്കാൻ ആഗ്രഹിക്കുന്നു. നിങ്ങളുടെ വീട്, ജോലിയുമായി ബന്ധപ്പെട്ട വിശദാംശങ്ങൾ, നിങ്ങളുടെ ആരോഗ്യം, ആരോഗ്യ പരിരക്ഷയിലേക്കുള്ള പ്രവേശനം എന്നിവയെ കുറിച്ച് ഞാൻ നിങ്ങളോട് ചില ചോദ്യങ്ങൾ ചോദിക്കും. അഭിമുഖം നിങ്ങളുടെ സമയത്തിന്റെ ഏകദേശം 25-30 മിനിറ്റ് എടുക്കും.

ഈ പഠനത്തിലെ നിങ്ങളുടെ പങ്കാളിത്തം ഇപ്പോൾ നിങ്ങൾക്ക് നേരിട്ടുള്ള പ്രയോജനമൊന്നും നൽകില്ല. എന്നിരുന്നാലും, മാലിന്യ സംസ്കരണ മേഖലയിൽ ജോലി ചെയ്യുന്ന സ്ത്രീകളുടെ ആരോഗ്യ, സാമൂഹിക സുരക്ഷാ ആവശ്യങ്ങൾ മനസ്സിലാക്കാനും അവരുടെ ജോലിയും ജീവിത സാഹചര്യങ്ങളും മെച്ചപ്പെടുത്തുന്നതിനുള്ള നയങ്ങൾ വികസിപ്പിക്കാൻ അധികാരികളെ സഹായിക്കാനും ഈ വിവരങ്ങൾ സഹായിക്കും.

നിങ്ങൾ നൽകുന്ന വിവരങ്ങൾ ഗവേഷകന്റെ പക്കൽ രഹസ്യസ്വഭാവത്തോടെയും സുരക്ഷിതമായും സൂക്ഷിക്കും. പഠനത്തിലെ പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ഉള്ളതാണ്, എന്ത് സമയത്തും നിങ്ങൾക്ക് പഠനത്തിൽ നിന്ന് പിൻവാങ്ങാവുന്നതാണ്. അത് നിങ്ങൾക്ക് ഒരു തരത്തിലും ദോഷം ചെയ്യില്ല. പഠനത്തിൽ പങ്കെടുക്കുന്നതിൽ നിന്ന് നേരിട്ടുള്ള ദോഷമൊന്നും ഉണ്ടാകാൻ സാധ്യതയില്ല. അരക്ഷിതാവസ്ഥയെക്കുറിച്ച് ചർച്ച ചെയ്യുന്നത് സമ്മർദ്ദത്തിനും അസ്വസ്ഥതയ്ക്കും കാരണമായേക്കാം, അത്തരം സന്ദർഭങ്ങളിൽ ഒരു ഇടവേള എടുത്ത് നിങ്ങൾക്ക് സുഖകരമാണെങ്കിൽ മാത്രമേ ഞങ്ങൾ പുനരാരംഭിക്കുകയുള്ളൂ.

സമ്പർക്ക വിവരങ്ങൾ

നിങ്ങൾക്ക് ഗവേഷണവുമായി ബന്ധപ്പെട്ട എന്തെങ്കിലും ചോദ്യങ്ങൾ ഉണ്ടെങ്കിൽ അല്ലെങ്കിൽ എന്റെ ക്രെഡൻഷ്യലുകൾ പരിശോധിക്കാൻ നിങ്ങൾ ആഗ്രഹിക്കുന്നുവെങ്കിൽ, ഇനിപ്പറയുന്ന വിലാസത്തിൽ നിങ്ങൾക്ക് എന്നെയോ ഞങ്ങളുടെ ഇൻസ്റ്റിറ്റ്യൂട്ടിന്റെ നൈതിക സമിതിയുടെ മെമ്പർ സെക്രട്ടറിയെയോ ബന്ധപ്പെടാം:

ഡോ. ദർശിൻ പ്രിയ ഡി.

എംപിഎച്ച് 2023, (ഇ-കോഡ്: 50342)

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അറിവോടെയുള്ള സമ്മതപത്രം

എ) ഈ പഠനത്തെ കുറിച്ച് വിവര ഫോമിൽ ഞാൻ വായിച്ചിട്ടുണ്ട്/
എന്നെ വായിച്ചു കേൾപ്പിച്ചിട്ടുണ്ട്, എനിക്ക് ഉണ്ടായിരുന്ന എല്ലാ
സംശയങ്ങളും ഞാൻ വ്യക്തമാക്കിയിട്ടുണ്ട്.

☐

ബി) പഠനത്തിലെ എന്റെ പങ്കാളിത്തം സ്വമേധയാ ഉള്ളതാണെന്നും
ഏത് സമയത്തും പഠനത്തിലെ എന്റെ പങ്കാളിത്തം എനിക്ക്
നിർത്താമെന്നും ഞാൻ മനസ്സിലാക്കുന്നു.

☐

സി) ഈ പഠനത്തിൽ നിന്ന് പ്രസിദ്ധീകരിക്കപ്പെട്ടതോ
പുറത്തിറങ്ങിയതോ ആയ ഏതെങ്കിലും വിവരങ്ങളിൽ എന്റെ
വ്യക്തിത്വം വെളിപ്പെടുത്തില്ലെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.

☐

ഡി) ഈ പഠനത്തിന്റെ ഭാഗമാകാൻ ഞാൻ സ്വമേധയാ സമ്മതിക്കുന്നു

☐

തീയതി :

ഒപ്പ്

വാക്കാലുള്ള സമ്മതം (ആവശ്യമെങ്കിൽ)

സാക്ഷിയുടെ ഒപ്പ്:

പങ്കാളിയുമായുള്ള ബന്ധം:

സാക്ഷിയുടെ പേര്:

അന്വേഷകന്റെ പേര്:

ഒപ്പ്:

-----/-----/-----തീയതി

ANNEXURE III

**Achutha Menon Centre for Health Science Studies,
Sree Chitra Tirunal Institute for Medical Sciences & Technology,
Thiruvananthapuram, Kerala, 695011**

INTERVIEW SCHEDULE – English

All information obtained from this interview will remain confidential and will be used for research purposes only. Individual information will not be disclosed to anyone under any circumstances.

Identification code:	Serial number :	Date: ____/0__/_2025
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1.GENERAL INFORMATION

01.	Name of the subject(Optional)	
02.	What is your age? (In completed years)	
03.	What is the highest level of education you have completed?	☐ No schooling ☐ Less than primary school ☐ Completed primary school (class 4) ☐ Completed upper primary school (class 7) ☐ Completed high school/ higher secondary ☐ Completed Diploma/ degree ☐ Post Graduation and above
04.	Which caste do you belong to?	☐ General ☐ OBC ☐ SC ☐ ST ☐ Other, specify _____
05.	What is your marital status?	☐ Single

		☐ Married ☐ Divorced/ Separated ☐ Widowed ☐ Other(specify)
06.	What is the type of family you belong to?	☐ Nuclear ☐ Extended ☐ Joint
07.	Number of members in the household	
08.	Does your household have regular access to clean drinking water?	☐ Yes ☐ No
09.	What is the main source of drinking water for your household?	☐ Piped water ☐ Well ☐ Bore well ☐ Tanker service ☐ Public tap/well
10.	What is the ownership status of your house?	☐ Own ☐ Rented
11.	What is the colour of your ration card?	☐ White ☐ Blue ☐ Yellow ☐ Pink ☐ No ration card

2.DETAILS OF WASTE COLLECTION

12.	How long have you been employed as Harithakarmasena worker?	_____ weeks _____ months _____ years
13.	For which corporation ward (ward no.) are you assigned for waste collection?	
14.	From how many households do you collect waste in one day?	

3.TIME USE

15.	At what time do you usually start your workday?	
16.	At what time do you usually finish your workday?	

17.	On an average, how many hours do you work outside home each day?	
18.	At what time do you usually wake up each morning	
19.	At what time do you usually go to sleep each night?	
20.	How many hours do you sleep each night on average?	
21.	On an average, how many hours do you spend on domestic work at your house each day?	
22.	Is there anyone at home who require your additional care? (Multiple options possible)	☐ Elderly ☐ Bedridden ☐ Children under 5 ☐ Physically or mentally challenged ☐ Chronically ill ☐ None ☐ Others (specify)....
23.	Is there anyone in your household with whom you can share (or help you with) your domestic work If yes, who	☐ Yes ☐ No
24.	Do you feel you have enough free time when you are not working outside home or doing domestic chores?	☐ Yes ☐ No

4.SOCIO-ECONOMIC SECURITY

A) WORK SECURITY

25.	At work, are you provided with sanitation facilities (toilets, soap, water) by the employer?	☐ Yes ☐ No
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		☐ Lack of proper personal protective equipment ☐ Weather ☐ Incentive to work quickly ☐ Other (Specify _____)
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29.	Do you do any other income-generating activity apart from Harithakarmasena work? If yes, specify	☐ Yes ☐ No
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B) INCOME SECURITY

30.	Over the past 12 months, what was the monthly income you earned from your work ?	
31.	a) Over the past 12 months, has your monthly income been fairly regular, fluctuating or very irregular? b) In the past three months, have you received all the income to which you have been entitled from your work? c) In the past three months, did you have to pay for the equipments used in working like glove, bags or Personal Protective Equipment?	☐ Regular ☐ Fluctuating ☐ Very irregular ☐ Yes ☐ No ☐ Yes ☐ No
32.	a) Do you expect your income in future 12 months time to be higher, lower or about the same as now? b) What is the main reason for this expectation? _____	☐ Higher ☐ Low ☐ Same
33.	Do you think the wage/salary you receive is fair, unfair or are you unsure?	☐ Fair ☐ Unfair

		☐ Don't know
34.	(a) Which if any of the following benefits are provided to you by your main employer? • Paid holidays • Paid medical care • Paid medical leave • Paid maternity leave • Maternity benefits • Redundancy payments • Pension entitlements • Disability benefits • Free or subsidised food at work • Scholarship for children • Other (Specify): (b) Are you provided with loans/wage advances by your employer in times of crisis? (c) What is the main method of payment in your main job? _____	1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know 1.Yes 2.No 3.Don't know ☐ Yes ☐ No ☐ Daily wage ☐ Weekly wage ☐ Monthly wage ☐ Piece-rate basis ☐ Contract basis ☐ Other(Specify)
35.	In the past 12 months, were you able to save any money from your income?	☐ Yes ☐ No

C) EMPLOYMENT SECURITY

36.	What type of contract do you have in your work?	☐ No contract ☐ Verbal, daily or weekly ☐ Verbal, monthly or longer ☐ Written, fixed, less than a month ☐ Written, permanent ☐ Other
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		☐ Don't Know
37.	Is the contract directly with your employer or is it with a contractor?	☐ Directly with employer ☐ Directly with contractor ☐ Don't know
38.	Is there an individual or collective agreement to protect you from unjust dismissal?	☐ Yes, collective agreement ☐ Yes, individual agreement ☐ Yes, both collective and individual agreement ☐ No agreement at all ☐ Don't know
39.	Is there any provision for compensation by your employer if your income falls below minimal?	☐ Yes ☐ No ☐ Don't know
40.	Did you obtain training before you first started working ?	☐ Yes ☐ No

5.SOCIAL IMPROVEMENT

41.	Why did you choose this job as a waste collector?(Multiple Options possible)	☐ Financial necessity ☐ Lack of other job opportunities ☐ Autonomy ☐ Family or social ties ☐ Work-life balance ☐ Others (Specify)
42.	What change did this job bring to your life? (Positive/negative)	

6.HEALTH SECURITY

43.	Are you covered by any scheme for health expenditure support? If Yes, what type of scheme?	☐ Yes ☐ No ☐ Government sponsored (eg.KASP/PMJAY etc) ☐ Employer Supported(Other than govt/PSU) health protection(eg.EISIS) ☐ Chitty/cooperative societies ☐ Private(Maxhealth etc) ☐ Others (Specify)
44.	Type of healthcare facility that you usually seek treatment?	☐ Govt/Public hospital ☐ Charitable/trust/NGO run hospital ☐ Private hospital
45.	Distance from place of residence to the health clinic/hospital that you usually seek care from?	☐ Less than 1km ☐ 2-1.5km ☐ 5-10km ☐ More than 10km ☐ Don't know
46.	Time required to reach the nearest health clinic/hospital.	☐ Less than 15min ☐ 5 to 29min ☐ 30-59min ☐ 1 to 2 hrs ☐ 2 hrs and more
47.	Have you received vaccinations for	☐ Tetanus- a) Yes b) No ☐ Hepatitis B-a) Yes b) No
48.	In the last 12 months, how did you obtain the money for your healthcare?	☐ Taking loan ☐ Selling assets ☐ Savings ☐ Government Aid ☐ Other ☐ Not applicable ☐ If other, specify:

49.	In the 2 weeks, have you suffered from any ailments?	☐ Yes ☐ No
50.	Are you suffering from any chronic ailment?	☐ Yes ☐ No If Yes, Specify: ☐ Diabetes ☐ Hypertension ☐ Heart disease ☐ Other
51.	Were you hospitalized in the last 12months? IF Yes, a) Nature of ailment? b) Nature of treatment? c) Type of medical institution d) Duration of stay in hospital(days) e) Expenditure for treatment during stay at hospital (in whole number of Rs.)	☐ Yes ☐ No ☐ Allopathy ☐ Ayurveda, Unani or Siddha ☐ Homeopathy ☐ Yoga and naturopathy ☐ Other ☐ Govt/Public hospital ☐ Charitable/trust/NGO run hospital ☐ Private hospital
52.	Do you have any musculoskeletal problems in past three months?	☐ Yes ☐ No
53.	Do you have any respiratory problems in past three months?	☐ Yes ☐ No
54.	Do you have any eye problem during solid waste collection?	☐ Yes ☐ No
55.	Do you have any skin problem in last one year?	☐ Yes ☐ No

6.1WHO- Quality of Life BREF (WHO-QOL BREF)

This assessment asks how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks.

		Very poor	Poor	Neither poor nor good	Good	Very good
01.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
02.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
03.	To what extent do you feel that (physical) pain prevents you from doing what you need to do?	1	2	3	4	5
04.	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
05.	How much do you enjoy life?	1	2	3	4	5
06.	To what extent do you feel your life	1	2	3	4	5

	to be meaningful?					
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		Not at all	A little	A moderate amount	Very much	Extremely
07.	How well are you able to concentrate?	1	2	3	4	5
08.	How safe do you feel in your daily life?	1	2	3	4	5
09.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
		Very poor	Poor	Neither poor nor good	Good	Very good

15.	How well are you able to get around?	1	2	3	4	5
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The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last two weeks.

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5
20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with	1	2	3	4	5

	your access to health services?					
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last two weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

ANNEXURE IV

അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ്,
ശ്രീ ചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ്
ആൻഡ് ടെക്നോളജി തിരുവനന്തപുരം, കേരളം, 695011

ഇൻറർവ്യൂ ഷെഡ്യൂൾ - മലയാളം

ഈ അഭിമുഖത്തിൽ നിന്ന് ലഭിക്കുന്ന എല്ലാ വിവരങ്ങളും
രഹസ്യസ്വഭാവമുള്ളതായി തുടരും, ഗവേഷണ ഉദ്ദേശ്യങ്ങൾക്കായി മാത്രം
ഉപയോഗിക്കും. വ്യക്തിഗത വിവരങ്ങൾ ഒരു കാരണവശാലും ആരോടും
വെളിപ്പെടുത്തില്ല.

തിരിച്ചറിയൽ കോഡ്:	സീരിയൽ നമ്പർ :	തീയതി: ____/0__2025
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1. പൊതുവായ വിവരങ്ങൾ

01.	നിങ്ങളുടെ പേര് (നിർബന്ധമില്ല)	
02.	നിങ്ങൾക്ക് എത്ര വയസ്സായി? (പൂർത്തിയായ വർഷങ്ങളിൽ)	
03.	നിങ്ങൾ പൂർത്തിയാക്കിയ ഏറ്റവും ഉയർന്ന വിദ്യാഭ്യാസ നില ഏതാണ്?	☐ സ്കൂൾ വിദ്യാഭ്യാസമില്ല ☐ പ്രൈമറി സ്കൂളിനേക്കാൾ കുറവ് ☐ പ്രൈമറി സ്കൂൾ പൂർത്തിയാക്കി (ക്ലാസ്സ് 4) ☐ അപ്പർ പ്രൈമറി സ്കൂൾ പൂർത്തിയാക്കി (ക്ലാസ്സ് 7) ☐ ഹൈസ്കൂൾ / ഹയർ സെക്കൻഡറി പൂർത്തിയാക്കി ☐ ഡിപ്ലോമ/ ബിരുദം പൂർത്തിയാക്കി ☐ ബിരുദാനന്തര ബിരുദവും അതിനു മുകളിലും

04.	നിങ്ങൾ ഏത് ജാതിയിൽ പെട്ടയാളാണ്?	☐ ജനറൽ ☐ ഒബിസി ☐ എസ്സി ☐ എസ് സി ☐ മറ്റുള്ളവ, ____ വ്യക്തമാക്കുക
05.	നിങ്ങളുടെ വൈവാഹിക നില എന്താണ്?	☐ അവിവാഹിത ☐ വിവാഹിത ☐ വിവാഹമോചനം/ വേർപിരിഞ്ഞു ☐ വിധവ ☐ മറ്റുള്ളവ(വ്യക്തമാക്കുക)
06.	ഏത് തരത്തിലുള്ള കുടുംബത്തിലാണ് നിങ്ങൾ ഉൾപ്പെടുന്നത്?	☐ അണു കുടുംബം ☐ വിപുലീകൃത കുടുംബം ☐ കുട്ടുകുടുംബം
07.	വീട്ടിലെ അംഗങ്ങളുടെ എണ്ണം	
08.	നിങ്ങളുടെ വീട്ടിൽ ശുദ്ധമായ കുടിവെള്ളം പതിവായി ലഭിക്കുന്നുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
09.	നിങ്ങളുടെ വീട്ടിലെ കുടിവെള്ളത്തിന്റെ പ്രധാന ഉറവിടം എന്താണ്?	☐ പൈപ്പ് വെള്ളം ☐ കിണർ ☐ കുഴൽക്കിണർ ☐ ടാങ്കർ സർവീസ് ☐ പൊതു ടാപ്പ്/ കിണർ
10.	നിങ്ങളുടെ വീടിന്റെ ഉടമസ്ഥാവകാശ നില എന്താണ്?	☐ സ്വന്തം ☐ വാടകയ്ക്ക്
11.	നിങ്ങളുടെ റേഷൻ കാർഡിന്റെ നിറമെന്താണ്?	☐ വെള്ള ☐ നീല ☐ മഞ്ഞ ☐ പിങ്ക് ☐ റേഷൻ കാർഡ് ഇല്ല

2. മാലിന്യ ശേഖരണത്തിന്റെ വിശദാംശങ്ങൾ

12.	എത്ര കാലമായി ഹരിതകർമ്മസേന പ്രവർത്തകയായി ജോലി ചെയ്യുന്നു?	_____ ആഴ്ച _____ മാസം _____ വർഷം
13.	മാലിന്യ ശേഖരണത്തിനായി ഏത് കോർപ്പറേഷൻ വാർഡിലേക്കാണ് (വാർഡ് നമ്പർ) നിങ്ങളെ നിയോഗിച്ചിരിക്കുന്നത്?	
14.	ഒരു ദിവസം എത്ര വീടുകളിൽ നിന്ന് നിങ്ങൾ മാലിന്യങ്ങൾ ശേഖരിക്കുന്നു?	

3. സമയ ഉപയോഗം

15.	ഏത് സമയത്താണ് നിങ്ങൾ സാധാരണയായി നിങ്ങളുടെ ജോലി ദിവസം ആരംഭിക്കുന്നത്?	
16.	ഏത് സമയത്താണ് നിങ്ങൾ സാധാരണയായി നിങ്ങളുടെ ജോലി ദിവസം പൂർത്തിയാക്കുന്നത്?	
17.	ഓരോ ദിവസവും ശരാശരി എത്ര മണിക്കൂർ നിങ്ങൾ വീടിന് പുറത്ത് ജോലി ചെയ്യുന്നു?	
18.	എല്ലാ ദിവസവും രാവിലെ ഏത് സമയത്താണ് നിങ്ങൾ സാധാരണയായി ഉണരുന്നത്?	
19.	ഓരോ രാത്രിയും ഏത് സമയത്താണ് നിങ്ങൾ സാധാരണയായി ഉറങ്ങാൻ പോകുന്നത്?	
20.	ഓരോ രാത്രിയും നിങ്ങൾ ശരാശരി എത്ര മണിക്കൂർ ഉറങ്ങുന്നു?	
21.	ഓരോ ദിവസവും ശരാശരി എത്ര മണിക്കൂർ നിങ്ങൾ നിങ്ങളുടെ	

	വീട്ടിൽ വീട്ടുജോലിക്കായി ചെലവഴിക്കുന്നു?	
22.	നിങ്ങളുടെ അധിക പരിചരണം ആവശ്യമുള്ള ആരെങ്കിലും വീട്ടിൽ ഉണ്ടോ? (ഒന്നിലധികം ഓപ്ഷനുകൾ സാധ്യമാണ്)	☐ പ്രായമായവർ ☐ കിടപ്പിലായവർ ☐ 5 വയസ്സിൽ താഴെയുള്ള കുട്ടികൾ ☐ ശാരീരികമോ മാനസികമോ ആയ വെല്ലുവിളികൾ നേരിടുന്നവർ ☐ ദീർഘകാലമായി വിട്ടുമാറാത്ത രോഗങ്ങൾ ☐ ആരുമില്ല ☐ മറ്റുള്ളവ (വ്യക്തമാക്കുക)....
23.	നിങ്ങളുടെ ഗാർഹിക ജോലി പങ്കിടാൻ (അല്ലെങ്കിൽ നിങ്ങളെ സഹായിക്കാൻ) നിങ്ങളുടെ വീട്ടിൽ ആരെങ്കിലും ഉണ്ടോ ഉണ്ടെങ്കിൽ, ആരാണ്	☐ ഉണ്ട് ☐ ഇല്ല
24.	നിങ്ങൾ വീടിന് പുറത്ത് ജോലി ചെയ്യാതിരിക്കുമ്പോഴോ വീട്ടുജോലികൾ ചെയ്യാത്തപ്പോഴോ നിങ്ങൾക്ക് മതിയായ ഒഴിവുസമയമുണ്ടെന്ന് നിങ്ങൾക്ക് തോന്നുന്നുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല

4. സാമൂഹിക-സാമ്പത്തിക സുരക്ഷ

A) ജോലി സുരക്ഷ

25	ജോലിസ്ഥലത്ത്, നിങ്ങൾക്ക് ശുചിത്വ സൗകര്യങ്ങൾ (ടോയ് ലറ്റുകൾ, സോപ്പ്, വെള്ളം) തൊഴിലുടമ നൽകുന്നുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
26	(എ)ശേഖരിക്കുന്ന മാലിന്യത്തിന്റെ തരം? (ഒന്നിലധികം ഓപ്ഷനുകൾ സാധ്യമാണ്) (ബി)ജോലിസ്ഥലത്ത് നിങ്ങൾ എന്തെങ്കിലും സംരക്ഷണ ഉപകരണങ്ങൾ ഉപയോഗിക്കുന്നുണ്ടോ ഉണ്ടെങ്കിൽ,	☐ ജൈവമാലിന്യം ☐ അജൈവമാലിന്യം ☐ പുനരുപയോഗിക്കാവുന്നത് ☐ ഇനേർട്ട് ☐ അപകടകരം ☐ ഉണ്ട് ☐ ഇല്ല

	iv. ഏതൊക്കെ സംരക്ഷണ ഉപകാരണങ്ങളാണ് ഉപയോഗിക്കുന്നത്? v. ആരാണ് സംരക്ഷണ ഉപകാരണങ്ങൾ നൽകുന്നത്? vi. ഇത് എത്ര ഇടവിട്ട് മാറ്റി ഉപയോഗിക്കുന്നു? (സി) സംരക്ഷണ ഉപകാരണങ്ങൾ ഉപയോഗിക്കുന്നില്ലെങ്കിൽ, പ്രധാന കാരണം എന്താണ്?	☐ തൊഴിലുടമ നൽകുന്നില്ല ☐ ഉപയോഗിക്കേണ്ടതിന്റെ ആവശ്യകത തോന്നുന്നില്ല ☐ മറ്റുള്ളവ(വ്യക്തമാക്കുക):
27	എ) കഴിഞ്ഞ മൂന്ന് മാസത്തിനുള്ളിൽ നിങ്ങളുടെ ജോലിയുമായി ബന്ധപ്പെട്ട് നിങ്ങൾക്ക് എന്തെങ്കിലും പരിക്ക് ഉണ്ടായിട്ടുണ്ടോ? ബി) ഉണ്ടെങ്കിൽ, കഴിഞ്ഞ മൂന്ന് മാസത്തിനിടെ നിങ്ങൾക്ക് എന്ത് തരത്തിലുള്ള പരിക്കുകൾ അനുഭവപ്പെട്ടു? (ഒന്നിലധികം)	☐ ഉണ്ട് ☐ ഇല്ല ☐ വെട്ടുകൊണ്ടുള്ള മുറിവ് ☐ കുത്തുകൊണ്ടുള്ള മുറിവ് ☐ ചതവ് ☐ ഒടിവ് ☐ സ്ക്രെയിൻ / ഉജുക്ക് ☐ മറ്റുള്ളവ ☐ ഒന്നുമില്ല.

	ഓപ്ഷനുകൾ സാധ്യമാണ്)	
	സി) ഉണ്ടെങ്കിൽ, നിങ്ങളുടെ തൊഴിലുടമകളിൽ നിന്ന് നിങ്ങൾക്ക് ലഭിച്ച പിന്തുണ എന്താണ്?	
28	നിങ്ങളുടെ കാഴ്ചപ്പാടിൽ മാലിന്യ ശേഖരണക്കാർക്കിടയിലെ പരിക്കുകൾക്കും മരണങ്ങൾക്കും പ്രധാന കാരണങ്ങൾ എന്തൊക്കെയാണ്?	☐ അപര്യാപ്തമായ പരിശീലനം ☐ പാലിക്കാത്ത സുരക്ഷാ നടപടിക്രമങ്ങൾ ☐ ജോലിയുടെ സ്വഭാവം ☐ താമസക്കാർ മാലിന്യം ശരിയായി നീക്കം ചെയ്യുന്നില്ല ☐ ശരിയായ വ്യക്തിഗത സംരക്ഷണ ഉപകരണങ്ങളുടെ അഭാവം ☐ കാലാവസ്ഥ ☐ വേഗത്തിൽ ജോലി ചെയ്യാനുള്ള പ്രോത്സാഹനം ☐ മറ്റുള്ളവ (വ്യക്തമാക്കുക)

29.	ഹരിതകർമ്മസേനാ ജോലിയല്ലാതെ വരുമാനം ഉണ്ടാക്കുന്ന മറ്റേതെങ്കിലും പ്രവർത്തനം നിങ്ങൾ ചെയ്യുന്നുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
	ഉണ്ടെങ്കിൽ, വ്യക്തമാക്കുക	

B) വരുമാന സുരക്ഷ

30.	കഴിഞ്ഞ 12 മാസത്തിനുള്ളിൽ, നിങ്ങളുടെ ജോലിയിൽ നിന്ന് നിങ്ങൾ സ്ഥാദിച്ച പ്രതിമാസ വരുമാനം എത്രയാണ്?	
31.	എ) കഴിഞ്ഞ 12 മാസമായി, നിങ്ങളുടെ പ്രതിമാസ വരുമാനം വളരെ സ്ഥിരമോ ഏറ്റക്കുറച്ചിലുകളോ അതോ വളരെ ക്രമരഹിതമോ ആയിരുന്നോ? ബി) കഴിഞ്ഞ മൂന്ന് മാസത്തിനുള്ളിൽ, നിങ്ങളുടെ ജോലിയിൽ നിന്ന് നിങ്ങൾക്ക് അർഹമായ എല്ലാ വരുമാനവും നിങ്ങൾക്ക് ലഭിച്ചിട്ടുണ്ടോ? സി) കഴിഞ്ഞ മൂന്ന് മാസത്തിനുള്ളിൽ, ഗ്ലോവ്, ബാഗുകൾ അല്ലെങ്കിൽ പിപിഇ (പേഴ്സണൽ പ്രൊട്ടക്ഷൻ) എക്സപ്പ് മെന്റ്) പോലുള്ള ഉപകരണങ്ങൾക്ക് നിങ്ങൾ പണം നൽകേണ്ടി വന്നിട്ടുണ്ടോ?	☐ പതിവ് ☐ ഏറ്റക്കുറച്ചിലുകൾ ☐ വളരെ ക്രമരഹിതം ☐ ഉണ്ട് ☐ ഇല്ല ☐ ഉണ്ട് ☐ ഇല്ല

32.	എ) അടുത്ത 12 മാസത്തിനുള്ളിൽ നിങ്ങളുടെ വരുമാനം ഇപ്പോൾ ഉള്ളതിനേക്കാൾ കൂടുതലോ കുറവോ ആയിരിക്കുമെന്ന് നിങ്ങൾ പ്രതീക്ഷിക്കുന്നുണ്ടോ? ബി) ഈ പ്രതീക്ഷയുടെ പ്രധാന കാരണം എന്താണ് ? _____	☐ ഉയർന്നത് ☐ താഴ്ന്നത് ☐ അതേ പോലെ
33.	നിങ്ങൾക്ക് ലഭിക്കുന്ന വേതനം / ശമ്പളം ന്യായമോ അന്യായമോ അല്ലെങ്കിൽ നിങ്ങൾക്ക് ഉറപ്പില്ലാത്തതോ ആണെന്ന് നിങ്ങൾ കരുതുന്നുണ്ടോ?	☐ ന്യായം ☐ ന്യായമല്ല ☐ അറിയില്ല
34.	(എ) ഈപ്പറയുന്ന ആനുകൂല്യങ്ങളിൽ ഏതൊക്കെയാണ് നിങ്ങളുടെ പ്രധാന തൊഴിലുടമ നിങ്ങൾക്ക് നൽകുന്നത് ? • ശമ്പളത്തോടെയുള്ള അവധി ദിനങ്ങൾ • ആനുകൂല്യത്തോട് കൂടിയുള്ള വൈദ്യസഹായം • ശമ്പളത്തോടെയുള്ള മെഡിക്കൽ ലീവ് • ശമ്പളത്തോടെയുള്ള പ്രസവാവധി • പ്രസവാനുകൂല്യങ്ങൾ	1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല

	• റിഡൻഡൻസി പേയ് മെന്റുകൾ • പെൻഷൻ ആനുകൂല്യങ്ങൾ • വൈകല്യ ആനുകൂല്യങ്ങൾ • ജോലിസ്ഥലത്ത് സൗജന്യമോ സബ്സിഡിയുള്ളതോ ആയ ഭക്ഷണം • കുട്ടികൾക്കുള്ള സ്കോളർഷിപ്പ് • മറ്റുള്ളവ (വ്യക്തമാക്കുക): (ബി) പ്രതിസന്ധി ഘട്ടങ്ങളിൽ നിങ്ങളുടെ തൊഴിലുടമ നിങ്ങൾക്ക് വായ്പ / വേതന അഡ്വാൻസ് നൽകുന്നുണ്ടോ? (സി) നിങ്ങളുടെ ജോലിയിലെ പ്രധാന പേയ് മെന്റ് രീതി എന്താണ്?	1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല 1. ഉണ്ട് 2. ഇല്ല 3. അറിയില്ല ☐ ഉണ്ട് ☐ ഇല്ല ☐ ദിവസ വേതനം ☐ പ്രതിവാര വേതനം ☐ പ്രതിമാസ വേതനം ☐ പീസ്-റേറ്റ് അടിസ്ഥാനത്തിൽ ☐ കരാർ അടിസ്ഥാനത്തിൽ ☐ മറ്റുള്ളവ(വ്യക്തമാക്കുക)
35.	കഴിഞ്ഞ 12 മാസത്തിൽ, നിങ്ങളുടെ വരുമാനത്തിൽ	

	നിന്ന് എന്തെങ്കിലും പണം ലാഭിക്കാൻ നിങ്ങൾക്ക് കഴിഞ്ഞോ?	☐ കഴിഞ്ഞു ☐ കഴിഞ്ഞില്ല
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c) തൊഴിൽ സുരക്ഷ

36.	നിങ്ങളുടെ ജോലിയിൽ ഏത് തരത്തിലുള്ള കരാർ ആണ് ഉള്ളത്?	☐ കരാറില്ല ☐ വാക്കാൽ, പ്രതിദിനമോ അല്ലെങ്കിൽ പ്രതിവാരമോ ☐ വാക്കാൽ, പ്രതിമാസമോ അല്ലെങ്കിൽ അതിൽ കൂടുതലോ ☐ എഴുതിയത്, ഒരു മാസത്തിൽ കുറവ് ☐ എഴുതിയതും സ്ഥിരവും ☐ മറ്റുള്ളവ ☐ അറിയില്ല
37.	കരാർ നിങ്ങളുടെ തൊഴിലുടമയുമായി നേരിട്ടാണോ അതോ ഒരു കരാറുകാരനോടൊപ്പമാണോ?	☐ തൊഴിലുടമയുമായി നേരിട്ട് ☐ കരാറുകാരനുമായി നേരിട്ട് ☐ അറിയില്ല
38.	അന്യായമായ പിരിച്ചുവിടലിൽ നിന്ന് നിങ്ങളെ സംരക്ഷിക്കാൻ വ്യക്തിഗതമായതോ കൂട്ടായ കരാറോ ഉണ്ടോ?	☐ അതെ, കൂട്ടായ ഉടമ്പടി ☐ അതെ, വ്യക്തിഗത കരാർ ☐ അതെ, കൂട്ടായതും വ്യക്തിഗതവുമായ ഉടമ്പടി ☐ ഒരു കരാറുമില്ല ☐ അറിയില്ല

39.	നിങ്ങളുടെ വരുമാനം ശരാശരിയിൽ താഴുകയാണെങ്കിൽ നിങ്ങളുടെ തൊഴിലുടമ നഷ്ടപരിഹാരം നൽകുന്നതിന് എന്തെങ്കിലും വ്യവസ്ഥയുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല ☐ അറിയില്ല
40.	നിങ്ങൾ ആദ്യം ജോലി ചെയ്യാൻ തുടങ്ങുന്നതിന് മുമ്പ് പരിശീലനം നേടിയിരുന്നോ?	☐ ഉണ്ട് ☐ ഇല്ല

5. സാമൂഹിക മെച്ചപ്പെടുത്തൽ

41.	എന്തുകൊണ്ടാണ് നിങ്ങൾ ഈ ജോലി തിരഞ്ഞെടുത്തത്? (ഒന്നിലധികം ഓപ്ഷനുകൾ സാധ്യമാണ്)	☐ സാമ്പത്തിക ആവശ്യം ☐ മറ്റ് തൊഴിലവസരങ്ങളുടെ അഭാവം ☐ സ്വയംഭരണം ☐ കുടുംബം അല്ലെങ്കിൽ സാമൂഹിക ബന്ധങ്ങൾ ☐ ജോലി-ജീവിത സന്തുലിതാവസ്ഥ ☐ മറ്റുള്ളവ (വ്യക്തമാക്കുക)
42.	ഈ ജോലി നിങ്ങളുടെ ജീവിതത്തിൽ എന്ത് മാറ്റമാണ് വരുത്തിയത്? (പോസിറ്റീവ്/നെഗറ്റീവ്)	

6. ആരോഗ്യ സുരക്ഷ

43.	ആരോഗ്യ ചെലവ് പിന്തുണയ്ക്കായി ഏതെങ്കിലും പദ്ധതിയിൽ നിങ്ങൾക്ക് പരിരക്ഷയുണ്ടോ? ഉണ്ടെങ്കിൽ, ഏത് തരം സ്കീം?	☐ ഉണ്ട് ☐ ഇല്ല ☐ സർക്കാർ സ്കീമുകൾ (ഉദാ. KASP / PMJAY മുതലായവ) ☐ തൊഴിലുടമ പിന്തുണയ്ക്കുന്ന (സർക്കാർ / പൊതുമേഖലാ സ്ഥാപനങ്ങൾ ഒഴികെ) ആരോഗ്യ പരിരക്ഷ (ഉദാ. ESIS) ☐ ചിട്ടി / സഹകരണ സംഘങ്ങൾ ☐ പ്രൈവറ്റ് (മാക്സ് ഹെൽത്ത് മുതലായവ) ☐ മറ്റുള്ളവ (വ്യക്തമാക്കുക)
44.	നിങ്ങൾ സാധാരണയായി ചികിത്സ തേടുന്ന ആരോഗ്യ പരിരക്ഷാ സൗകര്യം?	☐ സർക്കാർ / പൊതു ആശുപത്രി ☐ ചാരിറ്റബിൾ / ട്രസ്റ്റ് / എൻജിഒ നടത്തുന്ന ആശുപത്രി ☐ സ്വകാര്യ ആശുപത്രി
45.	താമസസ്ഥലത്ത് നിന്ന് നിങ്ങൾ സാധാരണയായി പരിചരണം തേടുന്ന ഹെൽത്ത് ക്ലിനിക്ക് / ആശുപത്രിയിലേക്കുള്ള ദൂരം?	☐ 1 കിലോമീറ്ററിൽ കുറവ് ☐ 2-1.5 കി.മീ ☐ 5-10 കി.മീ ☐ 10 കിലോമീറ്ററിൽ കൂടുതൽ ☐ അറിയില്ല
46.	ഏറ്റവും അടുത്തുള്ള ഹെൽത്ത് ക്ലിനിക്കിൽ / ആശുപത്രിയിൽ എത്താൻ ആവശ്യമായ സമയം.	☐ 15 മിനിറ്റിൽ കുറവ് ☐ 5 മുതൽ 29 മിനിറ്റ് വരെ ☐ 30-59 മിനിറ്റ് ☐ 1 -2 മണിക്കൂർ ☐ 2 മണിക്കൂറും അതിൽ കൂടുതലും

47.	ഇതിനായി നിങ്ങൾ പ്രതിരോധ കുത്തിവയ്പ്പുകൾ സ്വീകരിച്ചിട്ടുണ്ടോ	☐ ടെറ്റനസ്- എ) അതെ ബി) ഇല്ല ☐ ഹെപ്പറ്റൈറ്റിസ് ബി-എ) അതെ ബി) ഇല്ല
48.	കഴിഞ്ഞ 12 മാസത്തിനുള്ളിൽ, നിങ്ങളുടെ ആരോഗ്യ പരിരക്ഷയ്ക്കുള്ള പണം നിങ്ങൾക്ക് എങ്ങനെ ലഭിച്ചു?	☐ വായ്പയെടുക്കൽ ☐ ആസ്തികൾ വിൽക്കുന്നു ☐ സമ്പാദ്യം ☐ സർക്കാർ സഹായം ☐ മറ്റുള്ളവ ☐ ബാധകമല്ല ☐ മറ്റെന്തെങ്കിലും ഉണ്ടെങ്കിൽ, വ്യക്തമാക്കുക:
49.	കഴിഞ്ഞ 2 ആഴ്ചയിൽ, നിങ്ങൾക്ക് എന്തെങ്കിലും അസുഖങ്ങൾ അനുഭവപ്പെട്ടിട്ടുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
50.	നിങ്ങൾ ഏതെങ്കിലും വിട്ടുമാറാത്ത അസുഖം അനുഭവിക്കുന്നുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല ഉണ്ടെങ്കിൽ, വ്യക്തമാക്കുക: ☐ പ്രമേഹം ☐ ഹൈപ്പർടെൻഷൻ ☐ ഹൃദ്രോഗം ☐ മറ്റുള്ളവ
51.	കഴിഞ്ഞ 12 മാസമായി നിങ്ങൾ ആശുപത്രിയിൽ പ്രവേശിപ്പിക്കപ്പെട്ടിട്ടുണ്ടോ? ഉണ്ടെങ്കിൽ, f) രോഗത്തിന്റെ സ്വഭാവം? g) ചികിത്സയുടെ സ്വഭാവം?	☐ ഉണ്ട് ☐ ഇല്ല ☐ അലോപ്പതി ☐ ആയുർവേദം, യൂനാനി അല്ലെങ്കിൽ സിദ്ധ ☐ ഹോമിയോപ്പതി

	h) മെഡിക്കൽ സ്ഥാപനത്തിന്റെ തരം i) ആശുപത്രിയിൽ കഴിഞ്ഞ കാലയളവ്(ദിവസങ്ങൾ) j) ആശുപത്രിയിൽ താമസിക്കുമ്പോൾ ചികിത്സയ്ക്കുള്ള ചെലവ് (മൊത്തം രൂപ)	☐ യോഗയും പ്രകൃതിചികിത്സയും ☐ മറ്റുള്ളവ ☐ സർക്കാർ / പൊതു ആശുപത്രി ☐ ചാരിറ്റബിൾ / ട്രസ്റ്റ് / എൻജിങ് നടത്തുന്ന ആശുപത്രി ☐ സ്വകാര്യ ആശുപത്രി
52.	കഴിഞ്ഞ മൂന്ന് മാസമായി നിങ്ങൾക്ക് അസ്ഥിപേശി പ്രശ്നങ്ങൾ ഉണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
53.	കഴിഞ്ഞ മൂന്ന് മാസമായി നിങ്ങൾക്ക് എന്തെങ്കിലും ശ്വാസകോശ സംബന്ധമായ പ്രശ്നങ്ങൾ ഉണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
54.	ഖരമാലിന്യ ശേഖരണ വേളയിൽ നിങ്ങൾക്ക് കണ്ണിന് എന്തെങ്കിലും പ്രശ്നമുണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല

55.	കഴിഞ്ഞ ഒരു വർഷമായി നിങ്ങൾക്ക് എന്തെങ്കിലും ചർമ്മ പ്രശ്നങ്ങൾ ഉണ്ടോ?	☐ ഉണ്ട് ☐ ഇല്ല
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6.1WHOQOLbref

താഴെപറയുന്ന ചോദ്യങ്ങൾ താങ്കളുടെ ജീവിതത്തിന്റെ ഗുണനിലവാരം, ആരോഗ്യം, ജീവിതവുമായി ബന്ധപ്പെട്ട മറ്റ് ഖേമലകൾ എന്നിവയെപ്പറ്റി നിങ്ങൾക്ക് എന്താണുണ്ടെന്നു, എന്നതിനെക്കുറിച്ചാണ്. ഓരോ ചോദ്യവും, അതിന് സാധ്യമായ ഉത്തരങ്ങളും ഞാൻ വായിച്ചുകേൾക്കുന്നതായിരിക്കും. ദയവായി ഏറ്റവും അനുയോജ്യമായ ഉത്തരം തിരഞ്ഞെടുക്കുക. ഏതെങ്കിലും ഒരു ചോദ്യത്തിന്റെ ഉത്തരത്തെക്കുറിച്ച് ഉറപ്പില്ലെങ്കിൽ നിങ്ങളുടെ മനസ്സിലേക്ക് വരുന്ന ആദ്യത്തെ ഉത്തരമായിരിക്കും ഏറ്റവും ഉചിതം. കഴിഞ്ഞ 4 ആഴ്ചകൾക്കുള്ള താങ്കളുടെ ജീവിതത്തെക്കുറിച്ചുള്ള മാനദണ്ഡങ്ങളും, പ്രതീക്ഷകളും, സന്തോഷങ്ങളും , ആശങ്കകളും മനസ്സിൽ വച്ചുകൊണ്ട് ചോദ്യങ്ങൾക്ക് മറുപടി നൽകേണ്ടതാണ്.

1	താങ്കളുടെ ജീവിതത്തിന്റെ ഗുണനിലവാരത്തെ താങ്കൾ എങ്ങനെ കണക്കാക്കുന്നു?	വളരെ മോശം	മോശം	മോശവുമല്ല, നല്ലതുവുമല്ല	നല്ലത്	വളരെ നല്ലത്
2	താങ്കളുടെ ആരോഗ്യത്തെക്കുറിച്ച് താങ്കൾ എത്ര കണ്ട് തൃപ്തൻ / തൃപ്തരാണ്?	വളരെ അതൃപ്തനാകുന്നു	തൃപ്തികരം	തൃപ്തികരവുമല്ല, അതൃപ്തികരവുമല്ല	തൃപ്തികരം	വളരെ തൃപ്തികരം
കഴിഞ്ഞ 4 ആഴ്ചകളായി ചില കാര്യങ്ങൾ താങ്കൾക്ക് എങ്ങനെ അനുഭവപ്പെട്ടു എന്നതിനെക്കുറിച്ചാണ് താഴെപറയുന്ന ചോദ്യങ്ങൾ						
3	താങ്കൾ ചെമ്പേണ്ട കാര്യങ്ങളിൽനിന്ന് ശാരീരികവേദന എത്രത്തോളം താങ്കളെ തടഞ്ഞിട്ടുണ്ട്?	ഒട്ടുമില്ല	വളരെ കുറച്ച്	മിതമായി	കൂടുതൽ	വളരെ കൂടുതൽ
4	ദൈനംദിന ജീവിതത്തിന്റെ പ്രവർത്തനത്തിനായി എത്രത്തോളം വൈദ്യസഹായം താങ്കൾക്ക് ആവശ്യമാണ്?					
5	താങ്കൾ ജീവിതം എത്രമാത്രം ആസ്വദിക്കുന്നു?					
6	അർത്ഥപൂർണ്ണമായ ജീവിതമാണ് താങ്കൾ നയിക്കുന്നതെന്ന് താങ്കൾ കരുതുന്നുണ്ടോ?					
7	താങ്കൾക്ക് എത്രത്തോളം കാര്യങ്ങളിൽ ശ്രദ്ധ ചെലുത്താൻ സാധിക്കും?					
8	താങ്കളുടെ ദൈനംദിനജീവിതത്തിൽ എത്രത്തോളം സുരക്ഷ താങ്കൾ അനുഭവിക്കുന്നു?					
9	താങ്കളുടെ ചുറ്റുപാടുകൾ എത്രത്തോളം ആരോഗ്യകരമാണ്?					
കഴിഞ്ഞ 4 ആഴ്ചകളിൽ ചിലകാര്യങ്ങൾ എത്ര പൂർണ്ണമായി അനുഭവിക്കാനോ അല്ലെങ്കിൽ ചെയ്യുവാനോ സാധിച്ചു എന്നതിനെക്കുറിച്ചാണ് താഴെയുള്ള ചോദ്യങ്ങൾ.						
10	താങ്കളുടെ ദൈനംദിനജീവിതത്തിനാവശ്യമായ ഉഭയോപാധി അനുഭവപ്പെടുന്നുണ്ടോ?	ഒട്ടുമില്ല	വളരെ കുറച്ച്	ആവശ്യത്തിന്	മിക്കവാറും	പൂർണ്ണമായും
11	താങ്കളുടെ ശാരീരിക രൂപം താങ്കൾക്ക് സ്വീകാര്യമാണോ?					
12	താങ്കളുടെ ആവശ്യങ്ങൾ നിറവേറ്റാനാവശ്യമായ പണം താങ്കൾക്കുണ്ടോ?					
13	താങ്കളുടെ ദൈനംദിന ജീവിതത്തിനാവശ്യമായ വിവരങ്ങൾ താങ്കൾക്ക് എത്രത്തോളം ലഭ്യമാണ്?					
14	വിശ്രമവേളകളിലെ പ്രവർത്തനങ്ങൾക്കായി താങ്കൾക്ക് എത്രത്തോളം അവസരം ലഭ്യമാണ്?					

15	താങ്കളുടെ ചുറ്റുപാടുകളിലേക്ക് ശാരീരികമായി എത്രത്തോളം എത്തിപ്പെടാൻ കഴിയും ?	വളരെ മോശം	മോശം	മോശവുമല്ല, നല്ലതുമല്ല	നല്ലത്	വളരെ നല്ലത്
16	താങ്കളുടെ ഉറക്കം എത്രത്തോളം തൃപ്തികരമാണ്?	ഒട്ടും തൃപ്തികരമല്ല	തൃപ്തികരമല്ല	തൃപ്തികരവുമല്ല അതൃപ്തികരവുമല്ല	തൃപ്തികരം	വളരെ തൃപ്തികരം
17	ദൈനംദിന പ്രവർത്തികൾ ചെയ്യാനുള്ള കഴിവിൽ താങ്കൾ എത്ര തൃപ്തനാണ് / തൃപ്തയാണ്?					
18	ജോലി ചെയ്യാനുള്ള കഴിവിൽ താങ്കൾ എത്ര തൃപ്തനാണ്?					
19	താങ്കൾ താങ്കളിൽത്തന്നെ എത്ര തൃപ്തനാണ്?					
20	വ്യക്തി ബന്ധങ്ങളിൽ താങ്കൾ എത്ര തൃപ്തനാണ് / തൃപ്തയാണ്?					
21	ലൈംഗിക ജീവിതത്തിൽ താങ്കൾ എത്ര തൃപ്തനാണ് / തൃപ്തയാണ്?					
22	സുഹൃത്തുക്കളുടെ സഹായത്തിൽ താങ്കൾ എത്ര കണ്ട് തൃപ്തനാണ് / തൃപ്തയാണ്?					
23	ജീവിക്കുന്ന ചുറ്റുപാടുകളെക്കുറിച്ച് താങ്കൾ എത്ര കണ്ട് തൃപ്തനാണ് / തൃപ്തയാണ്?					
24	ആരോഗ്യസേവന ലഭ്യതയെക്കുറിച്ച് താങ്കൾ എത്ര കണ്ട് തൃപ്തനാണ് / തൃപ്തയാണ്?					
25	ഗതാഗതസൗകര്യത്തെക്കുറിച്ച് താങ്കൾ എത്ര കണ്ട് തൃപ്തനാണ് / തൃപ്തയാണ്?					
കഴിഞ്ഞ 4 ആഴ്ചകളിൽ ചിലകാര്യങ്ങൾ താങ്കൾക്ക് എപ്പോഴൊക്കെ അനുഭവപ്പെട്ടിട്ടുണ്ട് / തോന്നിയിട്ടുണ്ട് എന്നതിനെക്കുറിച്ചാണ് താഴെയുള്ള ചോദ്യം						
26	സങ്കടം, നിരാശ, ഉത്കണ്ഠ, വിഷാദം എന്നീ നിഷേധാത്മകമായ തോന്നലുകൾ താങ്കൾക്ക് എപ്പോഴൊക്കെ ഉണ്ടായിട്ടുണ്ട്	ഒരിക്കലുമില്ല	വല്ലപ്പോഴും	കൂടെ കൂടെ	മിക്കപ്പോഴും	എപ്പോഴും

ഈ വിലയിരുത്തലിനെപ്പറ്റി നിങ്ങൾക്ക് എന്തെങ്കിലും കൂടുതലായി പറയാനുള്ളതാ ?

ANNEXURE V

1. Results of chi-square tests of physical quality of life with independent variables

N=300		Low(143) High (157)
Predictor variables	Categories	p value
Age group	≤30 years	0.004
	31-40 years	
	41-50 years	
	51-60 years	
Education	Below high school	0.036
	High school and above	
Hour of sleep	≤ 6 hours	< 0.001
	>6 hours	
Free time after work	No	0.030
	Yes	
Savings	No	0.054
	Yes	
Distance from place of residence to health facility	≤ 2kms	0.051
	>2kms	
Chronic ailment	No	< 0.001
	Yes	
Musculoskeletal issues	No	0.021
	Yes	
Respiratory issues	No	< 0.001
	Yes	
Eye issues	No	0.048
	Yes	
Skin issues	No	0.035
	Yes	

2.Results of chi-square tests of psychological quality of life with independent variables

N=300		Low (131) High (169)
Predictor variables	Categories	p value
Age group	≤30 years	0.030
	31-40 years	
	41-50 years	
	51-60 years	
Education	Below high school	0.009

	High school and above	
Marital status	Currently married	0.008
	Ever married	
Employment duration	≤ 2 years	0.028
	> 2 years	
Hours of sleep	≤ 6 hours	0.053
	>6 hours	
Free time after work	No	0.007
	Yes	
Monthly Income	≤20000	0.036
	>20000	
Savings	No	0.006
	Yes	
Change bought to life	Positive	0.004
	Negative	
	Not much change	
Distance from place of residence to health facility	≤ 2kms	0.001
	>2kms	
Acute ailment	No	0.020
	Yes	
Chronic ailment	No	0.007
	Yes	
Hospitalization	No	0.019
	Yes	
Musculoskeletal issues	No	0.008
	Yes	
Respiratory issues	No	0.019
	Yes	

3.Results of chi-square tests of social quality of life with independent variables

N=300		Low (160) High (140)
Predictor variables	Categories	p value
Age group	≤30 years	0.002
	31-40 years	
	41-50 years	
	51-60 years	
Education	Below high school	0.001
	High school and above	
Marital status	Currently married	<0.001

	Ever married	
Employment duration	≤ 2 years	0.001
	> 2 years	
Monthly income	≤20000	0.021
	>20000	
Distance from place of residence to health facility	≤ 2kms	0.038
	>2kms	
Chronic ailment	No	0.018
	Yes	
Musculoskeletal issues	No	0.026
	Yes	

4. Results of chi-square tests of environmental quality of life with independent variables

N=300		Low (131) High (169)
Predictor variables	Categories	p value
Ownership status of house	Own	0.029
	Rented	
Employment duration	≤ 2 years	0.054
	> 2 years	
Free time after work	No	0.004
	Yes	
Savings	No	0.020
	Yes	
Change brought to life	Positive	0.023
	Negative	
	Not much change	
Distance from place of residence to health facility	≤ 2kms	0.001
	>2kms	
Acute ailment	No	0.038
	Yes	
Musculoskeletal issues	No	0.011
	Yes	

5. Association of employment duration with age group

Employment duration				
Predictor	Category	≤ 2 years n (%)	> 2 years n (%)	Chi-square
Age group	≤30 years	3(60.0)	2(40.0)	0.004
	31-40 years	38(59.4)	26(40.6)	
	41-50 years	35(34.0)	68(66.0)	
	51-60 years	46(35.9)	82(64.1)	

ANNEXURE VI

IEC APPROVAL LETTER



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०११, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)

Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728/2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

Institutional Ethics Committee

CDCO Registration No: ECR/189/Inst/KL/2013/RR-24
DHR Registration No: EC/NEW/INST/2022/2775

SCT/IEC/2336/DECEMBER/2024

29.04.2025

Dr. Dharsin Priya D
MPH Student, AMCHSS
SCTIMST, Thiruvananthapuram

Dear Dr. Dharsin Priya,

The Institutional Ethics Committee held on 30th December, 2024, reviewed and discussed your application to conduct the study titled "ASSESSMENT OF HEALTH SECURITY, SOCIO-ECONOMIC SECURITY, AND QUALITY OF LIFE OF WOMEN EMPLOYED AS WASTE COLLECTORS UNDER THIRUVANANTHAPURAM CORPORATION" (IEC /2336) .

Principal Investigator	Dr. Dharsin Priya D, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr. Manju Nair R, Scientist D, AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2024

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Dr. Manoj Murhekar	MD (Preventive & Social Medicine)	Male	Social Scientist	No
2.	Dr. Annapurna.Y	MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. Indu PV	MBBS, DPM, MPhil, PhD	Female	Clinician	No
5.	Dr. Rejnish Kumar	MBBS, MD, DNB	Male	Clinician	No
6.	Smt. Rekha Radhakrishnan	M.A (Eng.); B.Ed	Female	Lay person	No
7.	Dr. Biju Soman	MBBS, MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes
8.	Dr. Syam K	MBBS, MD, DM	Male	Clinician	Yes
9.	Dr. Srinivas G	PhD	Male	Basic Medical Scientist (Member Secretary)	Yes

The following documents were reviewed:Original submission

1. IEC Application Form
2. Permission letter
3. Funding details and Budget
4. Covering letter addressed to the Chairperson, IEC, SCTIMST dated 09.12.2024 forwarded by HOD
5. Interview schedule in English and Malayalam
6. Informed Consent Form in English and Malayalam
7. Participant Information Sheet in English and Malayalam
8. Checklist Form
9. Proposal
10. Declaration Form
11. CV of PI and Co-PI

Revised submission

1. Covering letter addressed to the Member Secretary, IEC, SCTIMST dated 16.01.2025 with response to IEC comments
2. IEC recommendation letter dated 09.01.2025
3. Proposal
4. Participant Information Sheet in English and Malayalam
5. Informed Consent Form in English and Malayalam
6. Interview schedule in English and Malayalam

Revised submission on 23.04.2025

1. Covering letter addressed to the Member Secretary, IEC, SCTIMST dated 22.04.2025 regarding the change of the title and objective of the study
2. Proposal
3. Participant Information Sheet in English and Malayalam
4. Informed Consent Form in English and Malayalam
5. Interview schedule in English and Malayalam

IEC Decision

The IEC approved the conduct of the study in the present form.

Remarks:

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,



Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM



ANNEXURE VII

Permission Letter from Thiruvananthapuram Corporation to conduct the study



തിരുവനന്തപുരം നഗരസഭ

പാളയം, വികാസ് ഭവൻ.പി.ഒ, Ph: 0471-2320821,

E-mail: tvpncorpn@gmail.com

H17/2765927

തീയതി:06.11.2024

Dr. Biju Soman

Professor & Head

Achuthamenon Center for Health Science & Studies

Thiruvananthapuram

സർ

വിഷയം: തിരുവനന്തപുരം നഗരസഭ- ആരോഗ്യവിഭാഗം- ഗവേഷണ പഠനം നടത്തുന്നതിനുള്ള അനുമതി നൽകുന്നത്- സംബന്ധിച്ച്.

സൂചന: 1. 25.10.2024 തീയതിയിൽ Lr. No. AMCHSS/MPH 2023 External letter /61/2024 .

2. ബഹു. നഗരസഭ സെക്രട്ടറിയുടെ 04.11.2024 -ലെ നിർദ്ദേശം.

മേൽ സൂചന (1), (2) പ്രകാരം ശ്രീചിത്ര ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ സയൻസ് & ടെക്നോളജി, തിരുവനന്തപുരം, ശ്രീ അച്യുതമേനോൻ സെന്റർ ഫോർ സയൻസ് & സ്റ്റഡീസ് എന്നിവയുടെ ആഭിമുഖ്യത്തിൽ "Assessment of Health And Socio - Economic Securities among Women waste collectors employed under Thiruvananthapuram Corporation" എന്ന വിഷയത്തിൽ വിവരശേഖരണത്തിനും , പഠനത്തിനും അനുമതി ലഭ്യമാക്കുന്നതിന് താങ്കൾ കത്ത് നൽകിയിരുന്നു. ആയത് പരിഗണിച്ച് ബഹു. നഗരസഭ സെക്രട്ടറി ടി വിഷയത്തിൽ വിവരശേഖരണത്തിനും, പഠനത്തിനും സൂചന (2) പ്രകാരം അനുമതി നൽകിയിട്ടുണ്ട് പഠനം പൂർത്തിയാക്കുന്ന മുറയ്ക്ക് ഡാറ്റാ കളക്ഷന്റെ ഒരു കോപ്പി നഗരസഭ സെക്രട്ടറിക്ക് നൽകേണ്ടതാണെന്ന വിവരം അറിയിക്കുന്നു.

Copy To:-

Dr. Dharsin Priya . D



ഹെൽത്ത് ഓഫീസർ
Dr.GOPAKUMAR.R.S
MBBS, DPH, TCMC- 45777
Public Health Officer
Municipal Corporation
Thiruvananthapuram

ANNEXURE VIII

Plagiarism check report

Assessment of Health security, Socio-economic security, and Quality of Life of women employed as waste collectors under Thiruvananthapuram Corporation

ORIGINALITY REPORT

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