

A Study of Working Conditions In Waste Picking And Their Effect on Members of SWaCH

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Abstract:

Managing solid waste is the main challenge facing cities in developing countries. It has been calculated that approximately 1.3 billion tons of solid waste were generated in the world's cities in 2012 – a number which could rise to 2.2 billion tons in 2025. However what is more challenging is the nature of work that the waste pickers are exposed to. Clubbed with social stigma associated with the job, negligent returns, lack of healthy working conditions and health hazards waste collection is an occupational choice of a far few. This paper is an attempt to understand the hazards associated with working conditions of waste picking and its effect on the health of the SWaCH members. The researcher has also noted the intramural and extra mural welfare facilities that the waste pickers receive however awareness and satisfaction about them amongst the waste collectors can be future scope for study.

Keywords: Solid Waste, Waste Pickers, SWaCH, Welfare, health

Introduction:

In most developing countries, waste management process lacks regulations, intervention from the government, and safe and secure working conditions for the workers. A similar situation is present in most cities in India where waste picking is not a job of choice and is surrounded with deplorable conditions of work. While the performance of the task is in itself a physically and mentally strenuous activity; a critical analysis of these working conditions is essential from the point of view of reducing the challenges faced by the taskforce involved in waste management.

Review of Literature:

In the Indian scenario waste picking as a commercial activity is preferred by those relegated to the bottom of the societal hierarchy. Naturally the level of literacy, family income are on the downside and opportunities for change of profession are far and few. Most metro and tier I and II cities have waste management systems run by local municipal corporations and civic bodies.

Waste Management System in Pune city:

In Pune, the Kagad Kach Patra Kashtakari Panchayat has represented Pune's waste pickers since 1993. KKPKP is a membership-based association of informal waste pickers and itinerant waste buyers in Pune, Members earn their livelihood by collecting recyclables such as paper, plastic, metal and glass scrap from households, commercial establishments and municipal solid waste in order to sell to recyclers. It now has over 9,000 members, of whom over 80 per cent are women from socially backward and marginalized castes. In 2008, the Pune Municipal Corporation made an agreement with SWaCH to decentralize *Door To Door Collection DTDC services*, wherein SWaCH members collect segregated waste from around 2000 households. The non-recyclable garbage is further segregated for sale, while the wet/organic and non-recyclable waste is dropped off at PMC 'feeder points,' from where it is collected by the municipal garbage trucks and sent to the landfill.

Despite this magnemous contribution the SwaCH members face tremendous challenges in their day-to-day work posing long term threats to their physical, mental and emotional wellbeing. A review of the available literature highlights the following areas of concern:

Nature of job:

The job of SWaCH members circulates around collection and segregation of domestic waste. While mere collection itself is tiresome and stressful at actual the nature of the job possess some grievous challenges for the members. Waste collectors are expected to not only collect trash but also to manually segregate the wet and dry waste. Though the Pune Municipal Corporation has taken initiatives to segregate waste inside the homes itself; lack of participation of the citizens in this initiative makes it necessary for the waste collectors to perform this task instead. Simultaneously handling high risk waste such as broken glass items, rusted iron articles and medical waste increase the challenges associated with the job. Alsodomestic waste merely does not include kitchen waste but also human waste in the form of diapers and sanitary napkins. Thus, the nature of the job in itself is deplorable and incorrigible.

Physical stressors:

The collection of wastes and its segregation is a physical activity having several elements that result in physical stress and tiredness to the waste pickers. The working conditions involve challenges such as lifting heavy loads of trash especially while filling trucks for land fill sites. Also per day a waste collector on an average climbs 50 floors for door to door waste collection clubbed with the effort of pushing full carts on sloped pavements and roads. While dealing with sanitary waste is a common roadblock of this profession what is more worrisome is more often than not this waste is improperly packed or simply discarded along with other kitchen waste thus exposing the waste collectors to strew of diseases and skin infections.

Common occurrence of situations:

Some situations are extremely common for the SWaCH workers the occurrence of which make their working conditions more challenging and result in stress and fatigue both physical and mental among the waste collectors' fraternity. Most of the waste collectors have reported that they have been victims of animal bites and scratches. Most workers have also complained of injuries that they have had owing to handling improperly packed glass waste, blades, syringes and pointed and sharp articles. Also, a primary stressor emphasized by the waste collectors is that in case of waste spillage or overflowing society bins they are expected to gather the waste by hand in order to load it into the carts. It is also common knowledge that SWaCH workers are subjected to ill treatment by people owing to the societal stigma associated with their jobs.

Availability of welfare facilities:

Every job is expected to have certain welfare facilities which can give reasonable comfort to the workers during the discharge of their duties. However, SWaCH workers are even denied such facilities and if present are ignorant about them. The availability, conditions of these welfare facilities and the level of awareness amongst the waste collectors is an important indicator of the working conditions of the SWaCH workers. This

Statement of the problem:

A study of working conditions in waste picking and their effect on members of SWaCH.

Objectives of the research:

1. To know about the nature of work and the working conditions of SWaCH members.

2. To analyze the problems posed by the working conditions in waste collection.
3. To know about the effects of the working conditions on the physical and mental health of SWaCH members.

Hypothesis of the study:

H0: The tasks related stress in waste collection have no effect the health of SWaCH members.

H1: The tasks related stressors in waste collection affect the health of SWaCH members.

H0: The physical stressors in waste collection no effect the health of SWaCH members.

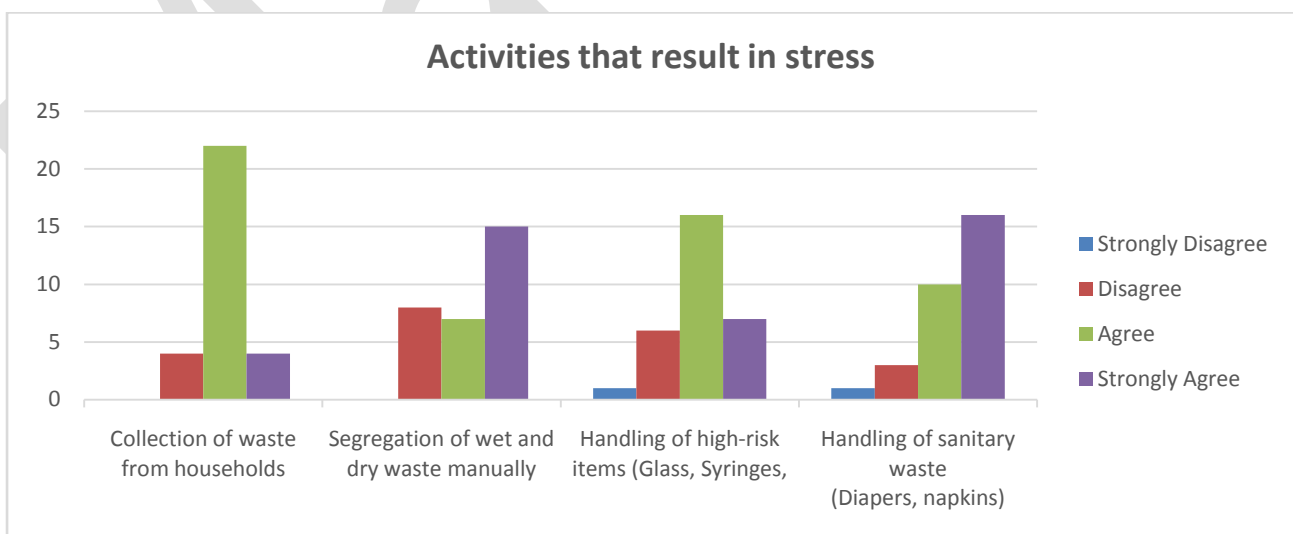
H1:The physical stressors in waste collection affect the health of SWaCH members.

Methodology:

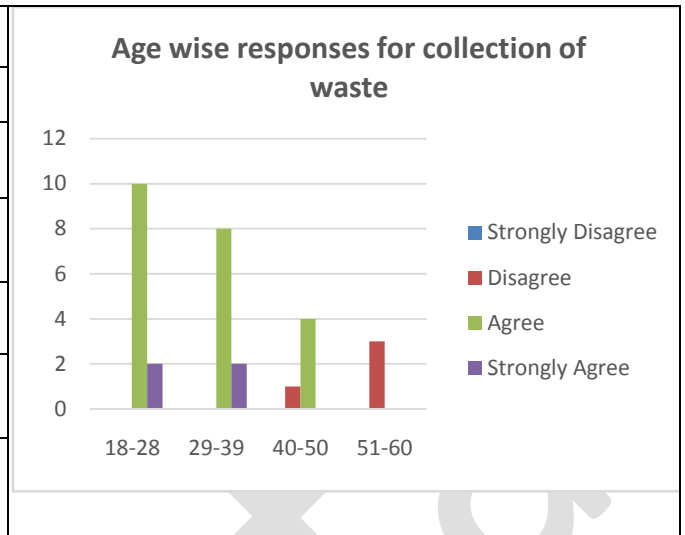
Out of 16 ward offices in the Pune Municipal Corporation PMC limits. The researcher has opted for Bhavani Peth ward office. The area sampling method has been applied here. The researcher has collected primary data using a questionnaire from 30 members of SWaCH belonging to Late. S.G Barve school No 19 Kothi which falls under the Bhavani Peth ward office. The opinions and responses received from the respondents have been instrumental in drafting the findings of this paper. The secondary literature sources in the form of journal articles, research papers etc. have been studied with a view to build premises and to understand and analyze the nature of the problem.

Major Findings:

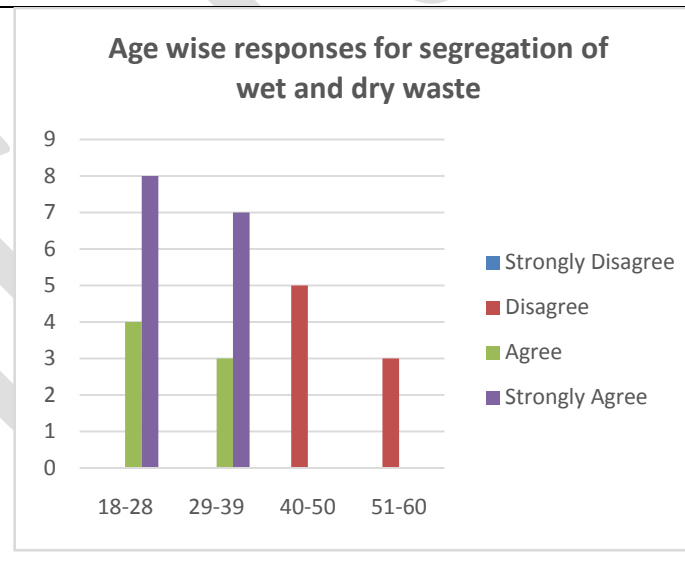
Activities that result in stress				
	Strongly Disagree	Disagree	Agree	Strongly Agree
Collection of waste from households	0	4	22	4
Segregation of wet and dry waste manually	0	8	7	15
Handling of high-risk items (Glass, Syringes,	1	6	16	7
Handling of sanitary waste (Diapers, napkins)	1	3	10	16



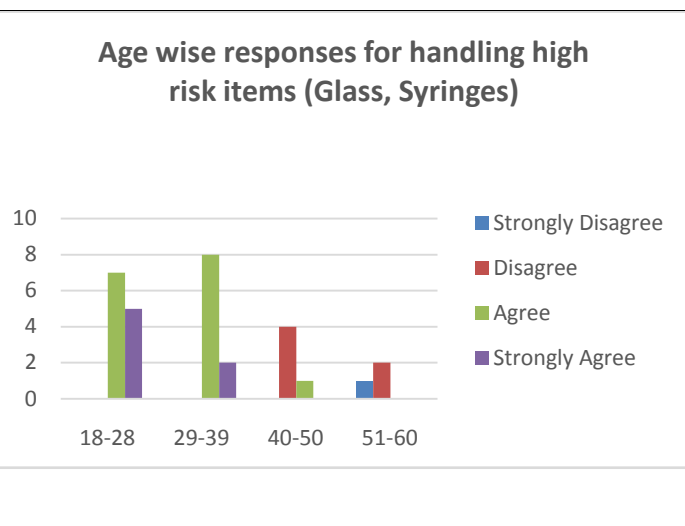
Collection of waste				
Age	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
18-28	0	0	10	2
29-39	0	0	8	2
40-50	0	1	4	0
51-60	0	3	0	0



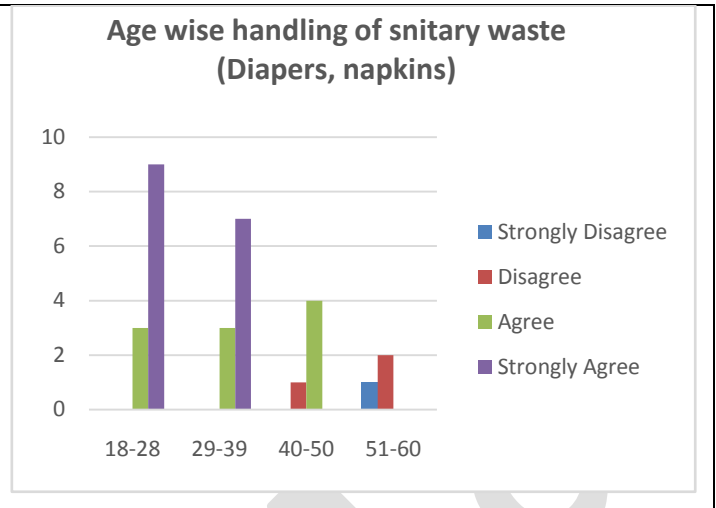
Segregation of wet and dry waste				
Age	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
18-28	0	0	4	8
29-39	0	0	3	7
40-50	0	5	0	0
51-60	0	3	0	0



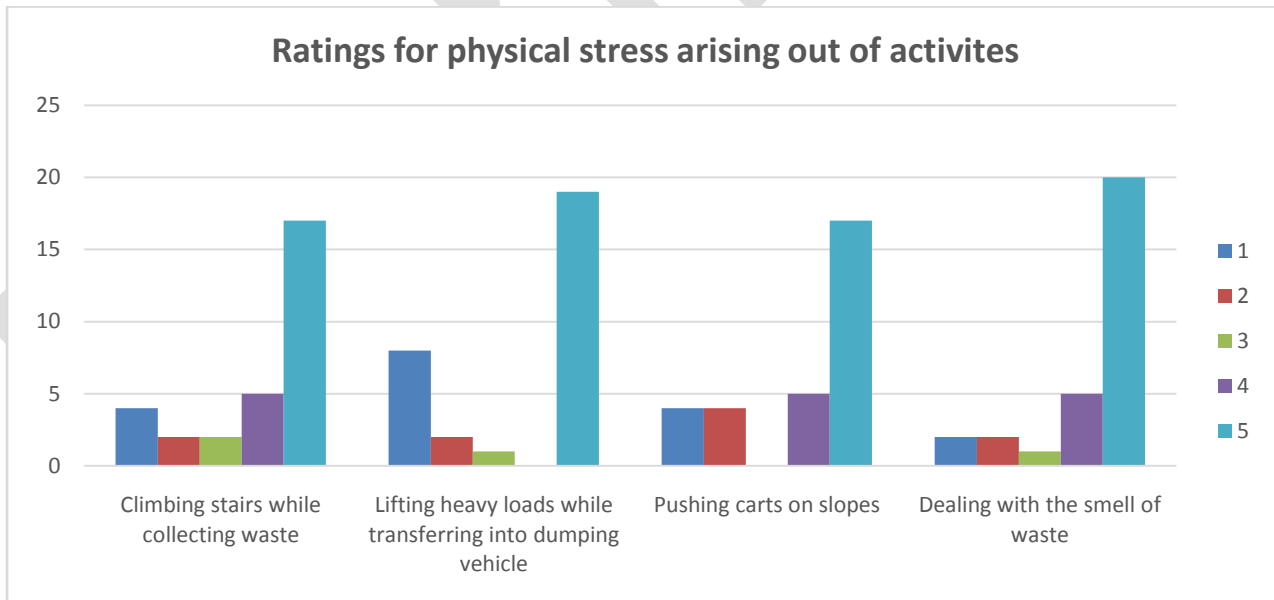
Handling high risk items (Glass, Syringes)				
Age	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
18-28	0	0	7	5
29-39	0	0	8	2
40-50	0	4	1	0
51-60	1	2	0	0



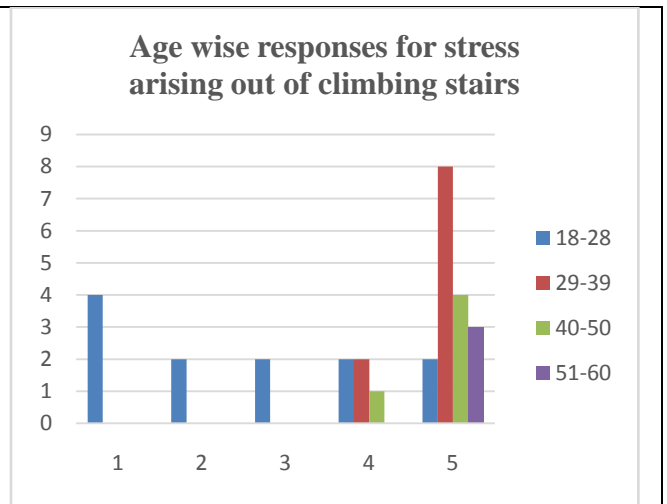
Handling of sanitary waste (Diapers, napkins)				
Age	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
18-28	0	0	3	9
29-39	0	0	3	7
40-50	0	1	4	0
51-60	1	2	0	0



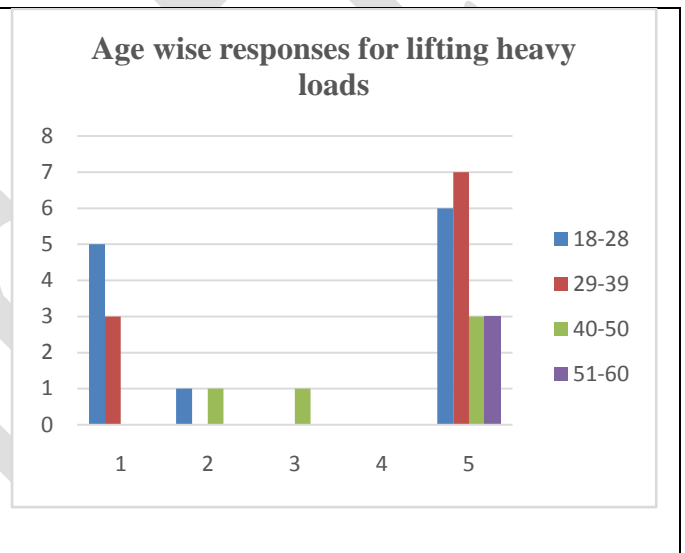
Rate the physical stress arising out of the following activities on a scale of 1 to 5					
	1	2	3	4	5
Climbing stairs while collecting waste	4	2	2	5	17
Lifting heavy loads while transferring into dumping vehicle	8	2	1	0	19
Pushing carts on slopes	4	4	0	5	17
Dealing with the smell of waste	2	2	1	5	20



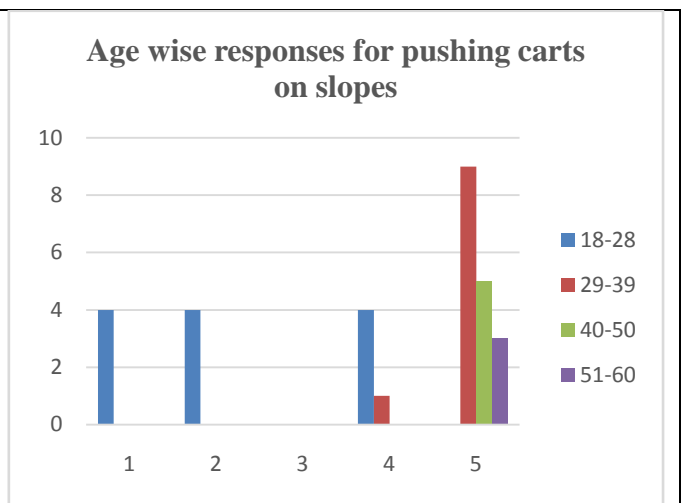
Climbing stairs while collecting waste					
Age	No of Responses				
	1	2	3	4	5
18-28	4	2	2	2	2
29-39	0	0	0	2	8
40-50	0	0	0	1	4
51-60	0	0	0	0	3



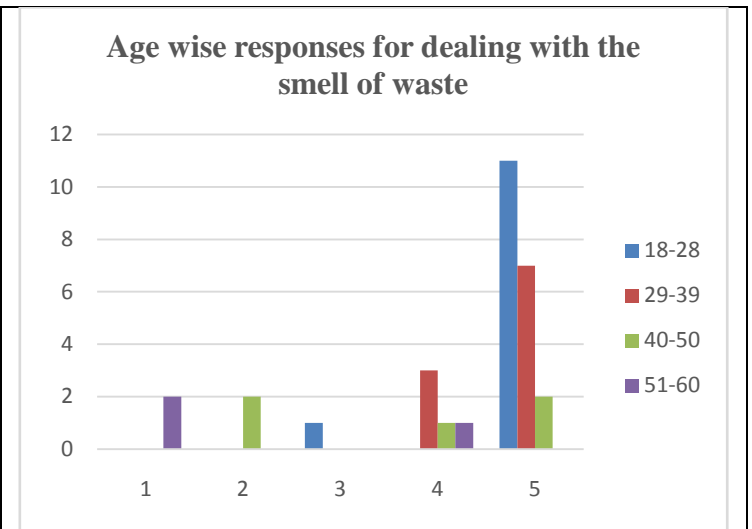
Lifting heavy loads while transferring into dumping vehicle					
Age	No of Responses				
	1	2	3	4	5
18-28	5	1	0	0	6
29-39	3	0	0	0	7
40-50	0	1	1	0	3
51-60	0	0	0	0	3



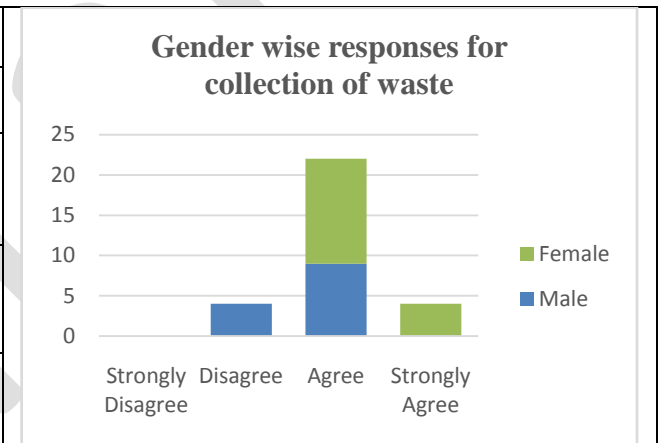
Pushing carts on steep slopes					
Age	No of Responses				
	1	2	3	4	5
18-28	4	4	0	4	0
29-39	0	0	0	1	9
40-50	0	0	0	0	5
51-60	0	0	0	0	3



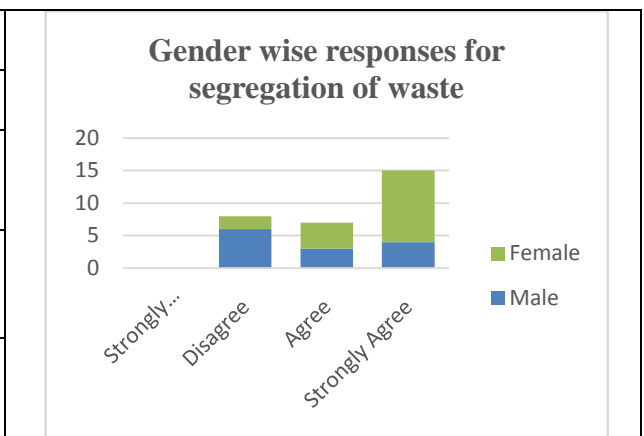
Dealing with the smell of waste					
Age	No of Responses				
	1	2	3	4	5
18-28	0	0	1	0	11
29-39	0	0	0	3	7
40-50	0	2	0	1	2
51-60	2	0	0	1	0



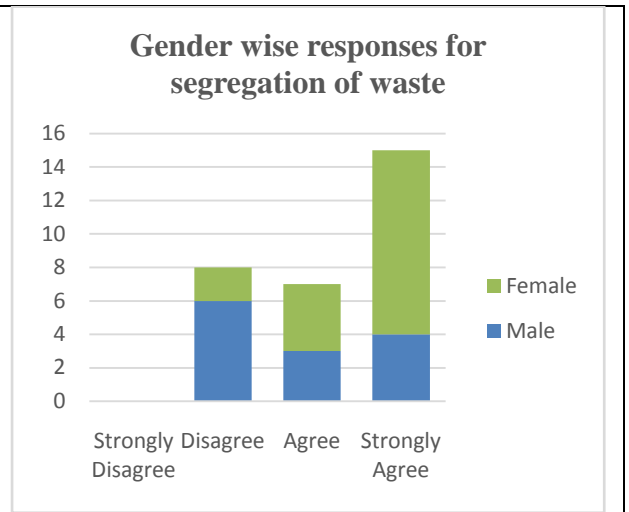
Collection of waste from household				
Gender	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
Male	0	4	9	0
Female	0	0	13	4



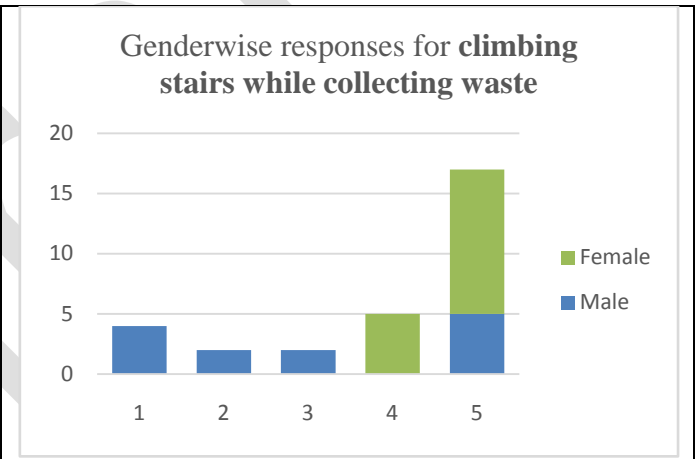
Segregation of wet and dry waste				
Gender	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
Male	0	6	3	4
Female	0	2	4	11



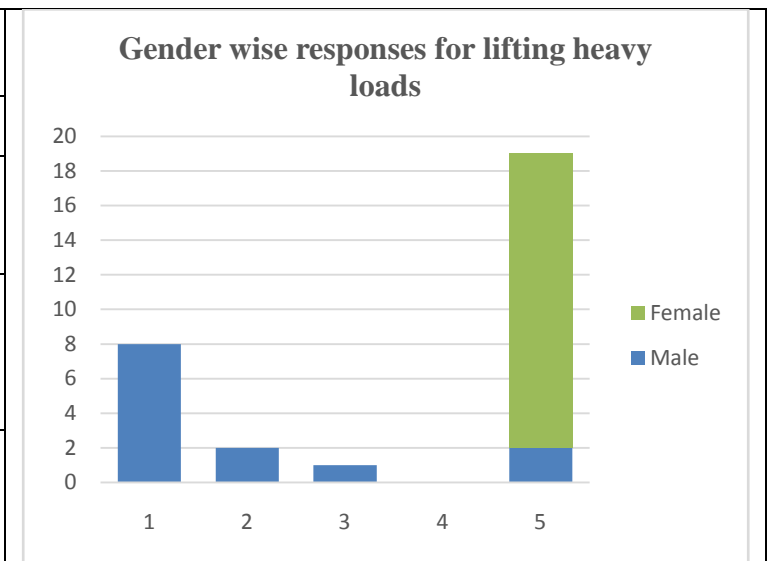
Handling of sanitary waste (Diapers, napkins)				
Gender	No of Responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
Male	0	0	0	13
Female	0	3	10	4



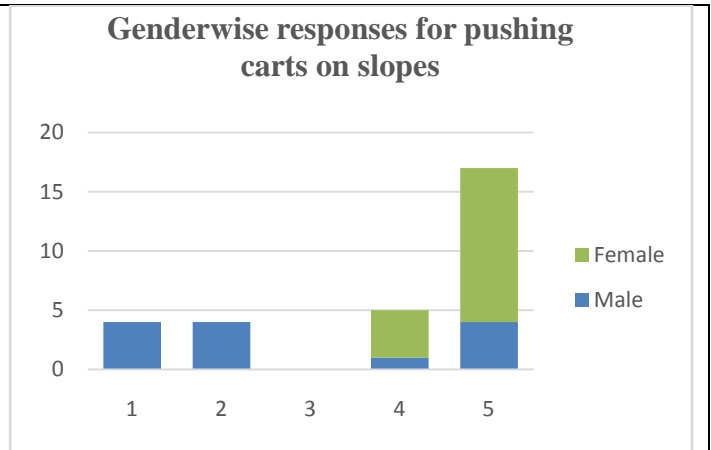
Climbing stairs while collecting waste					
Gender	No of Responses				
	1	2	3	4	5
Male	4	2	2	0	5
Female	0	0	0	5	12



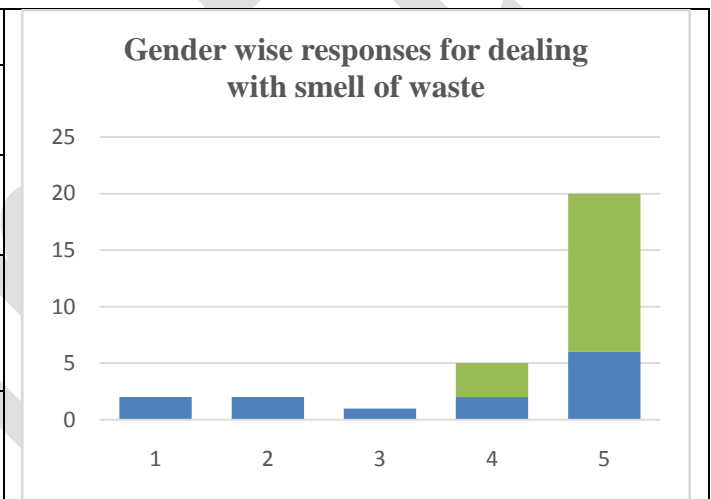
Lifting heavy loads while transferring into dumping vehicle					
Gender	No of Responses				
	1	2	3	4	5
Male	8	2	1	0	2
Female	0	0	0	0	17



Pushing carts on slopes					
Gender	No of Responses				
	1	2	3	4	5
Male	4	4	0	1	4
Female	0	0	0	4	13



Dealing with the smell of waste					
Gender	No of Responses				
	1	2	3	4	5
Male	2	2	1	2	6
Female	0	0	0	3	14



Statistical Analysis and Interpretations

The researcher has used the Chi Square test to test the correlation between the variables hypothesis 1 and two way ANOVA to test the correlation between variables for hypothesis 2. The level of significance alpha α is 0.05 and the chi square test for Likert scale analysis has been used.

Interpretations:

Parameters	df value	Calculated Chi square Value	Tabulated Chi square value
Task related stress	9	24.5	18.307

Comparison between calculated and tabulated chi square values

Since calculated values are higher than the tabulated values for chi square it is safe to conclude that the null hypothesis can be rejected and alternate hypothesis can be accepted.

ANOVA: Two-Factor Without Replication						
SUMMARY	Count	Sum	Average	Variance		
Row 1	5	30	6	39.5		
Row 2	5	30	6	62.5		
Row 3	5	30	6	72.5		
Row 4	5	30	6	41.5		
Row 5	5	30	6	63.5		
Column 1	5	20	4	6		
Column 2	5	14	2.8	1.2		
Column 3	5	4	0.8	0.7		
Column 4	5	18	3.6	4.8		
Column 5	5	94	18.8	3.2		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0	4	0	0	1	3.00
Columns	1054.4	4	263.6	66.31	9.37	3.00
Error	63.6	16	3.975			
Total	1118	24				

Summary statistics shows that all the averages of the scaled data revolve around 4 which indicate that most of the members experience physical stress and corresponding variances signifies this. ANOVA table shows that there is a significant effect physical stress on health of SwaCH members ($F = 66.31$ critical value=3.00). Hence, the null hypothesis is rejected and alternate hypothesis is accepted.

Major Conclusions

- Most waste collectors have agreed that they suffer from mental stress owing to the tasks that they have to perform. Age wise bifurcation of responses shows that the mental stress arising out of collection, manual segregation of waste, handling of high-risk waste and handling of sanitary waste is higher amongst the younger age groups and is seen to reduce as age progresses. This may be due to the habitualisation of the waste collectors to the nature of their work over the years.
- On the contrary gender wise bifurcation revealed that the women are seen to be more affected by collection, manual segregation of waste, handling of high-risk waste as compared to the male employees. Only in the parameter of dealing with sanitary waste women have recorded lower resistance as compared to the men. Interactions during data collection revealed that men find the tasks of handling diapers and sanitary napkins more stressful than all other tasks.
- For physical stress arising out of activities maximum responses have ratings at 4 and 5 thus underlining the fact that waste collection is a tiresome job both physically and mentally.
- Age wise responses have shown that the physical stress arising out of climbing stairs, lifting heavy loads, pushing carts and dealing with the smell of waste is higher amongst the younger members as compared the older ones. Interactions with the *Mukkadam* revealed that the younger members self-opt for physical activities considering the constrains of the older employees

however this observation may be restricted to Kothi no 19 and different findings may be revealed on a larger scale.

- Gender wise bifurcation has revealed that all ratings of 4 and 5 prima facie are by the female members while male members have given a combination of high and low ratings. Thus, suffice is to say that the female members find the physical activities tiresome and stressful.
- Most of the SwaCH members have also experienced stress due to ill treatment by people, manual collection of spilled over waste, non-packing of sanitary waste and extreme weather conditions affecting work.
- Most of the SwaCH members have also experienced health concerns such as attack by stray animals, injury because of hazardous waste, skin and eye infections, respiratory tract diseases, dehydration, nausea, body aches due to physical labour.
- While it is natural that almost all members of SwaCH have suffered from Covid -19 most of them have attributed their infection to the lack of PPE kits while handling Covid waste.
- The positive responses received for extra mural welfare facilities indicate that there is awareness amongst the members about the availability of facilities such as hospitals, health insurance, ambulance, training programs/ workshops, facility for washing and drying clothes. These facilities are offered to the members by SwaCH.
- On the contrary a complete lack of intra mural welfare facilities is indicated through the responses such as drinking water, lunch room/lunch area, latrine and urinals, gloves, masks and PPE kits to handle covid waste.

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