Family Adoption Programme – Community Diagnosis

Phase II

The Family Adoption Programme is a methodological strategy designed to fully integrate students into the complex web of community-based health care. Every student is assigned to perform an organised evaluation of a selected family unit, carefully examining the various factors affecting their state of health and providing evidence-based advice in response. Located in the topographical environment of **Pizhala,** an isolated village in the **Kadamakkudy grampanchayat, Kanayannur Taluk, Ernakulam district**, the programme takes place in the meeting point of several rivers that flow into the Periyar River. But this idyllic setting conceals the harsh fact that the population suffers from increased vulnerability to water-borne illnesses due to its island location. The drainage system's structural shortcomings compound the need for focused healthcare interventions, which is highlighted by the need for addressing these challenges.

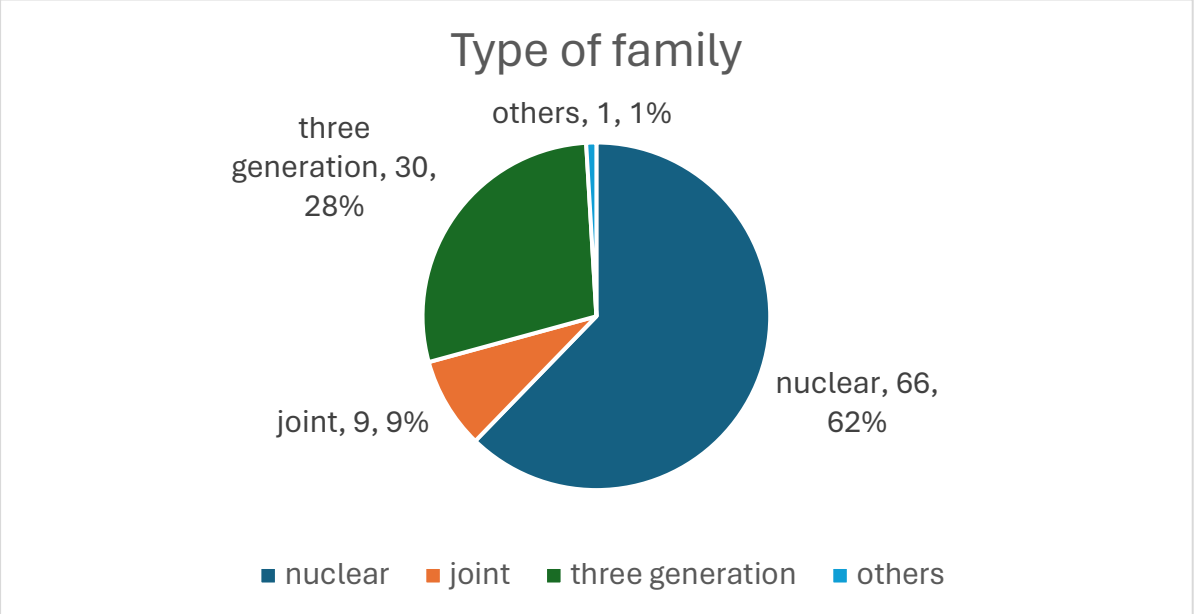
Ward XI was designated as the focal point for data collection efforts. Phase 1 of the process entailed gathering comprehensive family profiles, documenting individual members' particulars, and identifying any prevalent comorbidities. Subsequently, in Phase 2, a thorough evaluation encompassed an analysis of housing conditions, dietary patterns, and various environmental factors contributing to the community's health landscape.

The total number of families visited amounted to 106 households, encompassing a comprehensive survey of their inhabitants. In total, 408 residents were included in the data collection process, reflecting a broad representation of the community's demographic composition.

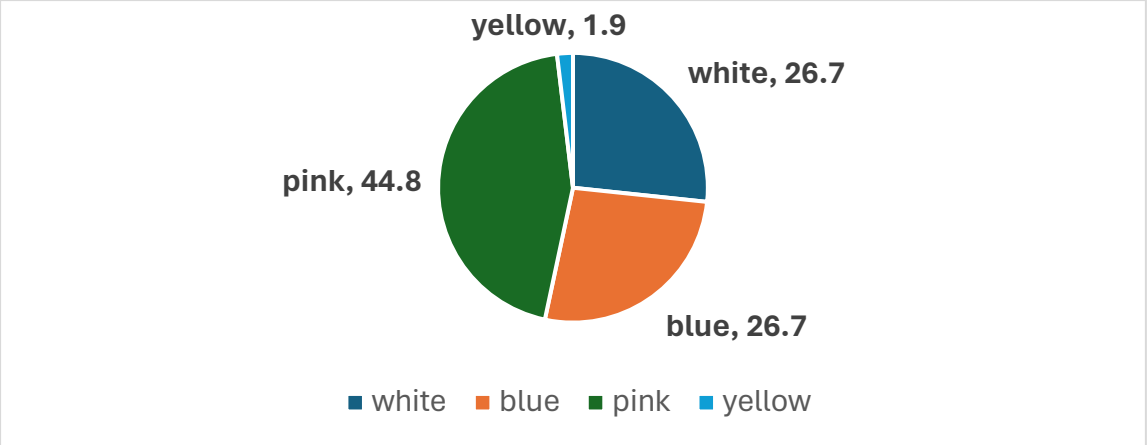
Basic demographic characteristics

Type of Family Distribution:

Nuclear families constitute the majority at 62%, followed by three-generation families at 28%, joint families at 9%, and others at % as shown in the figure given below. In Kerala, 68.45% of couples reside in single family homes, indicating a prevalent nuclear family structure based on the 2011 census.

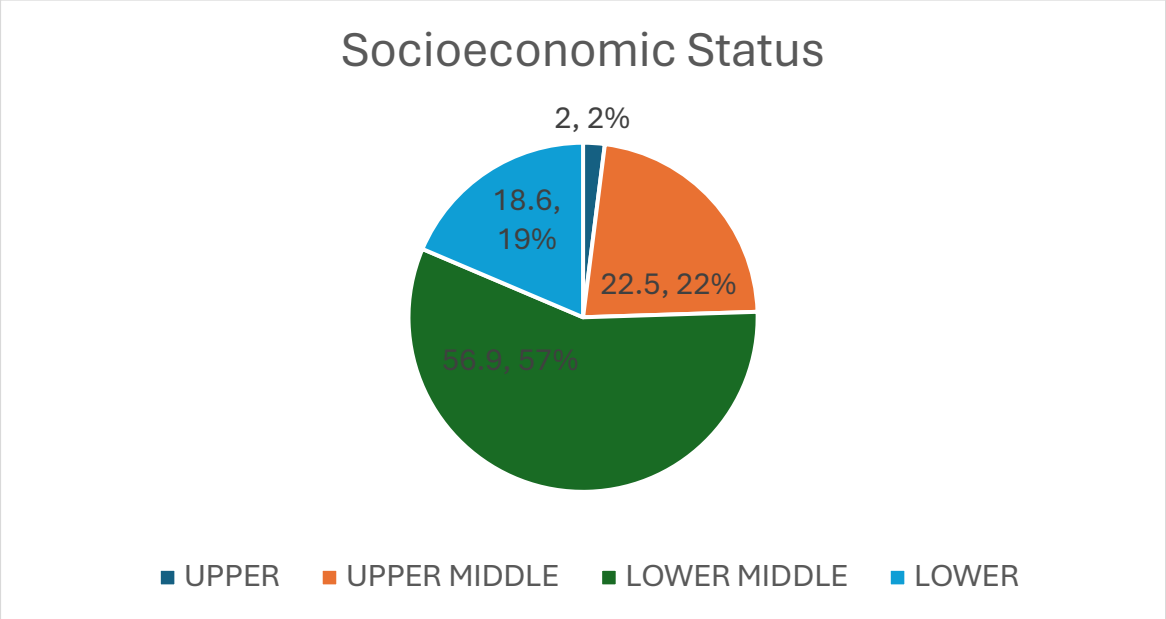


Ration Card and Insurance Scheme Utilization:
Families with white ration cards have a higher percentage of availing insurance schemes at 80.2% compared to those with blue, pink, or yellow cards at 19.8%.



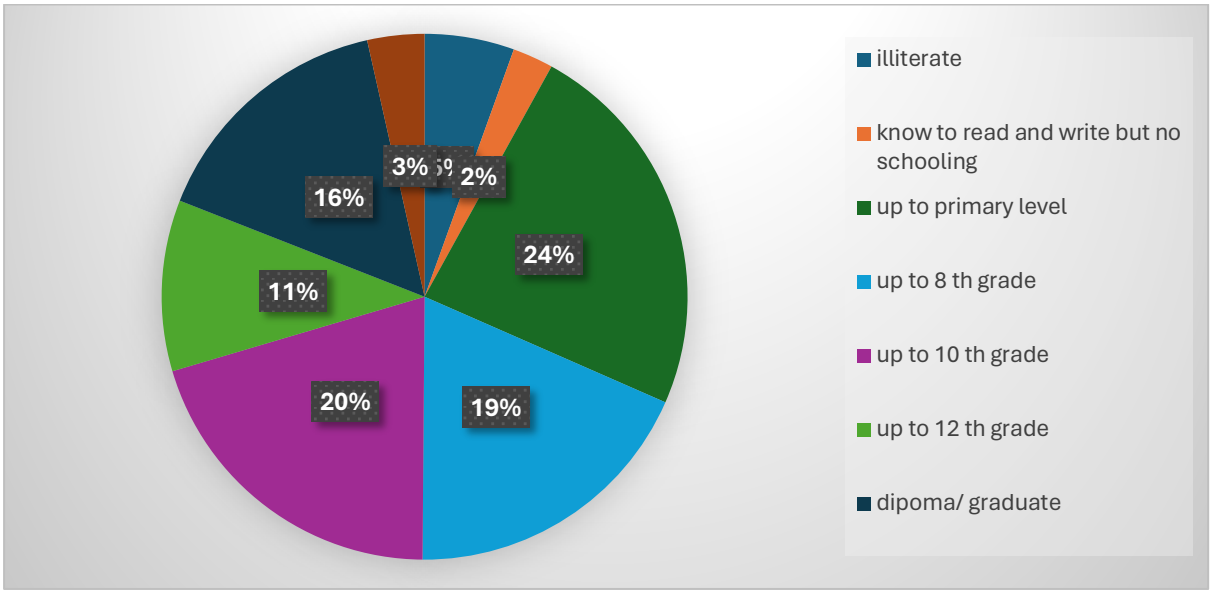
AVAILING INSURANCE SCHEMES	COUNT	PERCENTAGE
YES	21	19.8%
NO	85	80.2%

Socioeconomic Status Based on Kuppusamy Scale:



Education status
The population's education status in Pizhala ranges from illiteracy at 5.5% to postgraduates at 3.5%, with variations across different educational levels compared to the 2014 Kerala census. The education

status among the population of Pizhala was assessed by categorizing them into various groups like illiterate,those who know to read and write but had no schooling, those attended upto primary level, upto 8th grade, upto 10th grade, upto 12th grade, graduates, and postgraduates. The findings are compared with census done on 'Education in Kerala' by Government of Kerala in 2014.
The percentage of illiteracy in Pizhala is 5.5% comparable to 5.25% obtained in Kerala census. 2.5% were literate but didn't go for schooling. Majority had educational level upto primary school(23%) similar to Kerala census. 20.3% completed 10th grade(Kerala census-15.5%), 10.5% completed 12th grade (Kerala census-12%), diploma/ graduates 15.5%(Kerala census-13%) , all being comparable to 2014 Kerala census. There is an increase in postgraduates to 3.5% than Kerala census report of 1%.



Per capita income and expenditure

	PER CAPITA INCOME(Rs)	TOTAL EXPENDITURE PER MONTH (Rs)
MEAN	1400	1654
MAXIMUM	7500	6000
MINIMUM	333	100

Family size

The data provided in the sources outlines the distribution of family members and age groups within a population. Most families consist of 4 members, representing 28.3% of the total, followed by families with 3 members at 18.9%.

The provided tables outline the distribution of family sizes in the Kerala Census and the Pizhala Survey. In the Kerala Census, the data indicates that single-member households represent 3.66% of the total, while those with two members constitute 10.5%. The percentage gradually increases with larger family

sizes, reaching 30% for households with four members. Conversely, families with six or more members constitute 20% of the total.

Comparatively, the Pizhala Survey depicts slightly different proportions. Single-member households are reported at 2.8%, while those with two members rise to 14.2%. The trend of increasing percentages with larger family sizes is consistent, with 18.9% for three-member households and 28.3% for those with four members. The percentage of larger families decreases, with 19.5% for five-member households and 16.03% for households with six or more members.

In essence, while both datasets reflect a similar trend of larger families being less prevalent than smaller ones, there are notable differences in the specific percentages reported for each family size category between the Kerala Census and the Pizhala Survey.

SNO.	NO. OF FAMILY MEMBERS	KERALA CENSUS	PIZHALA SURVEY
1	1	3.66%	2.8%
2	2	10.5%	14.2%
3	3	17.35%	18.9%
4	4	30%	28.3%
5	5	18.5%	19.5%
6	6 OR MORE	20%	16.03%

Age distribution

The table provides a breakdown of age groups and sexes along with the corresponding counts and percentages of the total population. In the age group of 1-5 years, there are 11 males, comprising 2.7% of the total, and 16 females, accounting for 3.9%. Similarly, in the 6-12 years age bracket, there are 8 males (2% of the total) and 11 females (2.7% of the total). The 13-18 years age range includes 13 males (3.2%) and 12 females (2.9%).

Moving to the adult age groups, the 19-45 years category encompasses 75 males (18.4%) and 66 females (16.2%), along with 32 individuals (7.8%) whose sex is not specified. The 46-65 years age group consists of 63 males (15.4%) and 63 females (15.4%).

Additionally, there is a separate category for infants, with 1 male (0.2%) and 3 females (0.7%), and for the elderly, with 34 males (8.3%) and 32 females (7.8%).

Overall, the table illustrates the distribution of sexes across various age groups, indicating the relative population percentages for each demographic segment.

AGE GROUPS	SEX	COUNT	% OF TOTAL
1-5 Years	M	11	2.7%

	F	16	3.9%
6-12 Years	M	8	2%
	F	11	2.7%
13-18 Years	M	13	3.2%
	F	12	2.9%
19-45	M	75	18.4%
	F	66	16.2%
46-65	M	63	15.4%
	F	63	15.4%
INFANTS	M	1	0.2%
	F	3	0.7%
ELDERLY	M	34	8.3%
	F	32	7.8%

Sex Distribution

Sex	**Count**	**% of Total**
Male	205	50.2
Female	203	49.8

The sources reveal a near-equal distribution between males and females, with males representing 50.2% and females 49.8% of the population.

The provided sex distribution indicates that out of a total count of 408 individuals, there are 205 males and 203 females, accounting for 50.2% and 49.8% of the total population, respectively. This shows a nearly equal distribution of sexes in the sample population.

Comparing this with the sex ratio in Kerala, which is typically calculated as the number of females per 1000 males, the ratio in the provided data can be calculated as follows:

Sex Ratio = (Number of Females / Number of Males) * 1000

= (203 / 205) * 1000

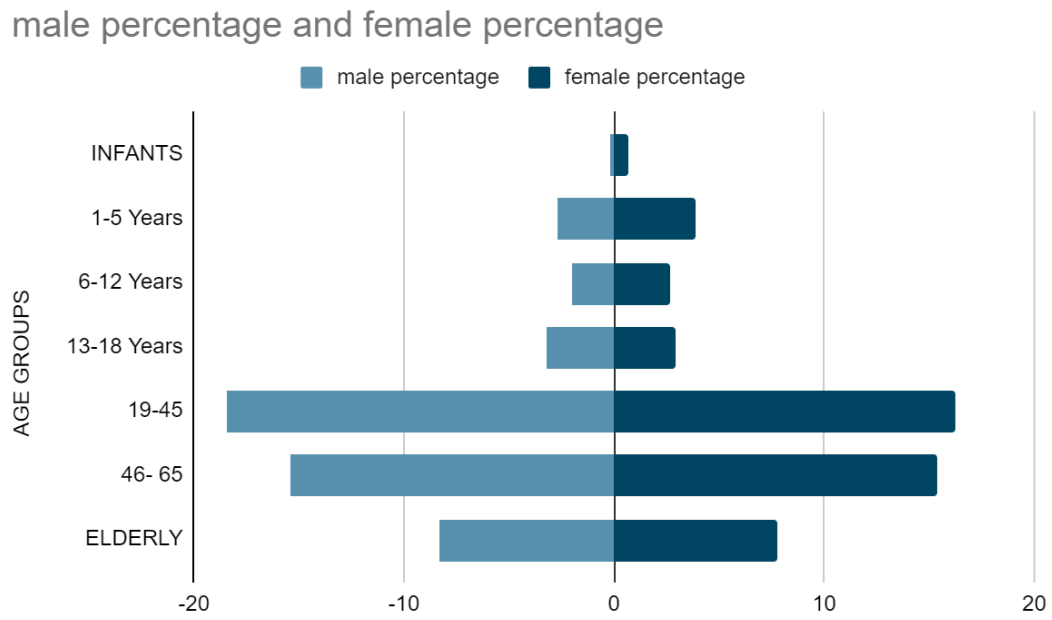
≈ 990

This suggests that there are approximately 990 females for every 1000 males in the sample population.

When comparing this to the sex ratio in Kerala, which historically tends to be higher due to various socio-cultural factors, this sample shows a relatively balanced sex ratio. Kerala's sex ratio has often been reported as higher than the national average, reflecting better gender parity in the state. In Kerala,

the adult sex ratio is reported as 1084 females per 1000 males, indicating a higher number of females in the adult population compared to males. However, it's essential to consider that this sample may not be representative of the entire population of Kerala, so further analysis with broader data sets would be necessary to draw more definitive conclusions about the sex ratio in Kerala.

Age – Sex Pyramid



This pyramid illustrates the distribution of age groups and sexes in the population based on the provided data. Each horizontal bar represents an age group, with males on the left side and females on the right side. The width of each bar corresponds to the percentage of the total population in that age-sex group.

Comparing the age-sex pyramid for the provided data and a generalized representation for Kerala:

1. Overall Structure:

- Both pyramids likely exhibit a broader base, indicating a higher proportion of younger individuals compared to older ones. However, Kerala's pyramid might have a slightly narrower base due to factors such as lower birth rates and better healthcare leading to lower infant mortality.

2. Elderly Population:

- Both pyramids show a bulge in the elderly population (65+ years). However, in Kerala, this bulge might be more pronounced due to factors such as higher life expectancy and better healthcare infrastructure.

3. Middle-Aged Population:

- The middle-aged population (46-65 years and 19-45 years) may have significant representation in both pyramids, though Kerala's pyramid might show a more even distribution across these age groups due to factors like emigration for work opportunities.

4. Youth Population:

- Both pyramids likely show a considerable representation of youth (13-18 years and 6-12 years), but Kerala's pyramid might reflect a higher emphasis on education and literacy, potentially leading to a more balanced distribution in these age groups.

5. Infants and Young Children:

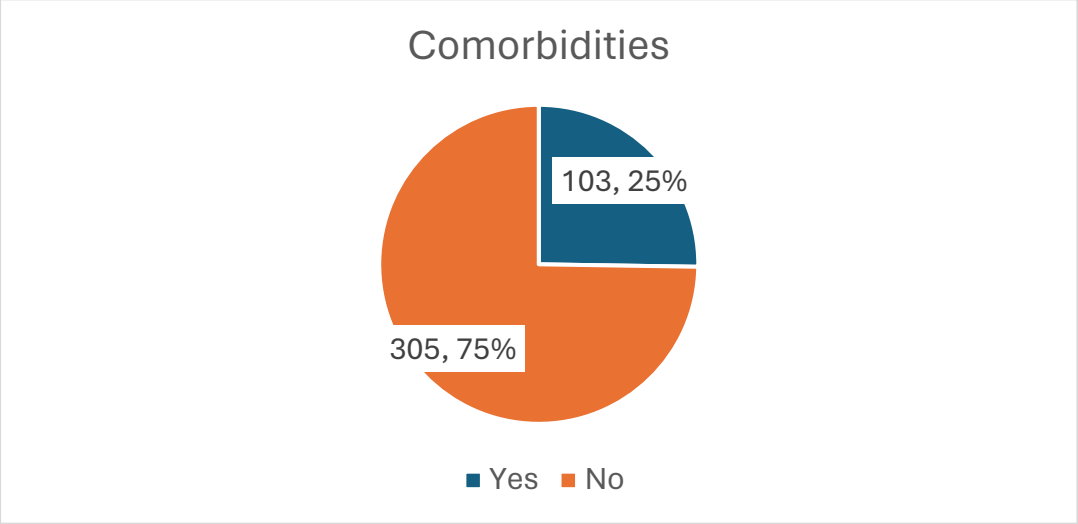
- The representation of infants and young children (1-5 years) might be relatively lower in both pyramids, with Kerala potentially showing a slightly higher proportion due to better healthcare and social services.

6. Sex Distribution:

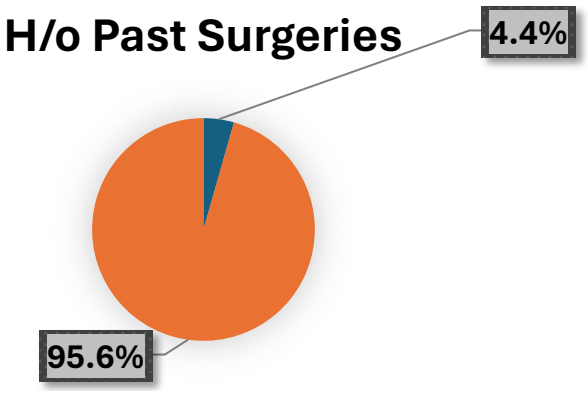
- The distribution of males and females within each age group may vary slightly between the two pyramids but is likely to follow similar trends, with Kerala possibly exhibiting a more balanced sex ratio across all age groups due to its social development indicators.

Disease profile

Prevalence of Comorbidities:
25.2% of the surveyed population in Pizhala reported having comorbidities, with hypertension at 18.0% (73 individuals), diabetes mellitus at (49 individuals) 12.2%, and coronary artery disease (CAD) at 4.4% (18 individuals).



Past Surgical Status:
- Only 4.4% of the study participants in Pizhala had undergone surgeries, indicating a low prevalence of past surgical interventions in the community.



Other health related statistics

Moreover, the health-related statistics provided indicate low rates of antenatal and postnatal care utilization, with only 0.5% of individuals receiving these services. In terms of immunization status, most of the population, 97.1%, is fully immunized, highlighting a positive trend in preventive healthcare practices. However, a small percentage, 2.9%, are only partially immunized, indicating room for improvement in vaccination coverage

SANITATION AND ENVIRONMENT

Types of House Structures:

Pucca houses are predominant in Pizhala at 96.2%, indicating a shift towards more durable and long-lasting housing structures.

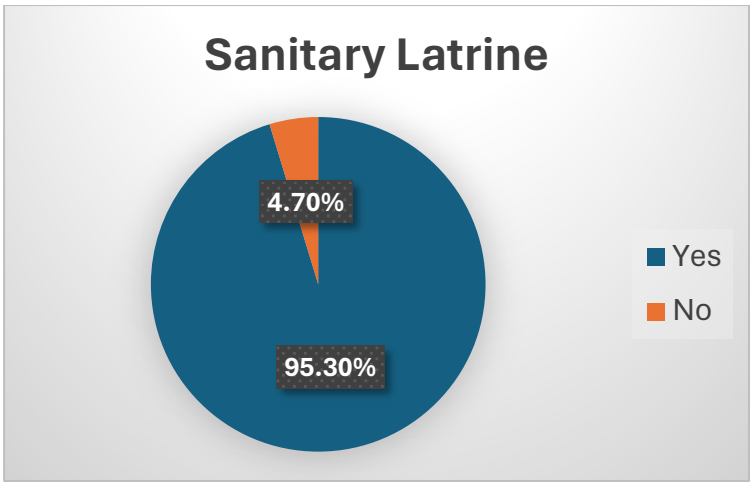
Types of house	kerala	pizhala
pucca	48%	96.2%
semipucca	9.0%	3.8%

Household Amenities and Conditions:

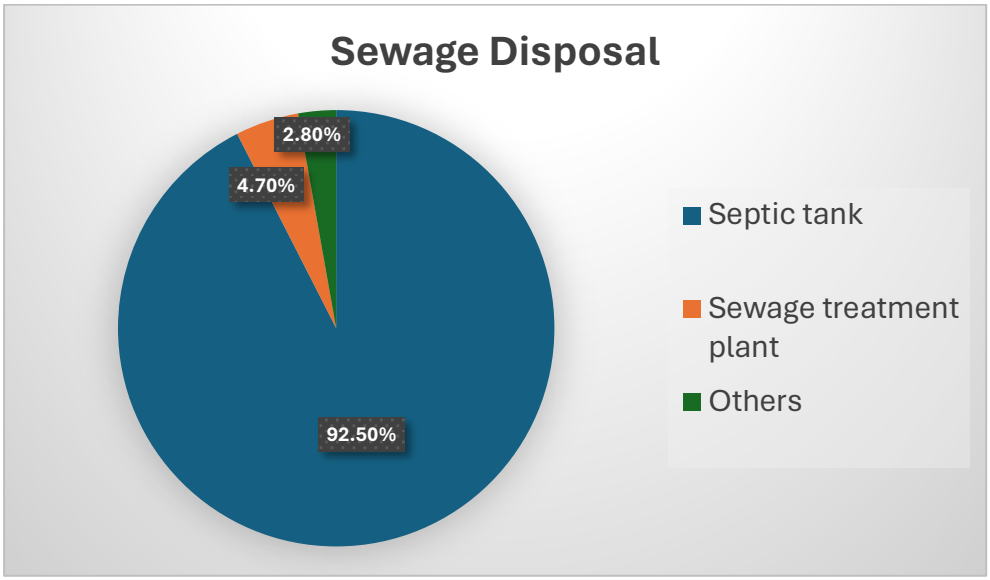
- Most households have separate kitchens, proper uncooked food storage, and covered cooked food storage.
- Smoke ventilation is present in 86.8% of households, while 13.2% lack this feature.
- LPG is the primary cooking fuel for 89.6% of households, with some using a combination of LPG with electricity or firewood.
- Most households (86.8%) rely on shared wells for water supply.
- The majority (97.2%) have proper uncooked food storage, and 99.1% store cooked food covered.
- 97% of households have proper uncooked food storage, while 3% have improper storage.
- 86.8% of households have smoke ventilation, while 13.2% do not.
- 97.2% of households have a separate kitchen, while 2.8% do not.
- 99.1% of households store cooked food covered, with only 0.9% leaving it uncovered.
- 92% use shared well, 12% use own well and 2% use public well.

Disposal of wastes

Among the households, 101 households (95.30%) reported having access to sanitary latrines, indicating a relatively high level of sanitation infrastructure. However, it's concerning that 5 households (4.70%) lacked access to sanitary latrines, which may pose health risks and highlight potential disparities in sanitation infrastructure. Efforts to ensure universal access to adequate sanitation facilities are crucial for safeguarding public health and promoting overall well-being within the community.

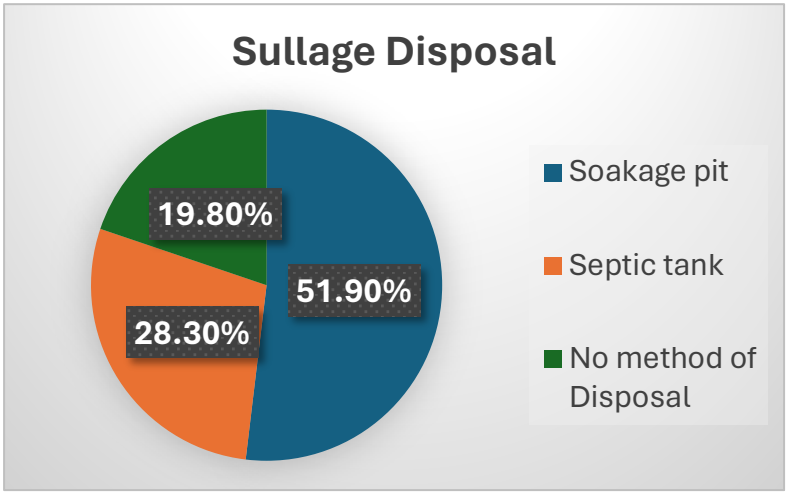


Most households (98, 92.50%) reported utilizing septic tanks for sewage disposal, indicating a prevalent practice within the community. However, a smaller proportion (5, 4.70%) reported using sewage treatment plants, suggesting a more advanced infrastructure in some areas. Additionally, a few households (3, 2.80%) employed other methods for sewage disposal, indicating a diverse range of practices within the population. Efforts to ensure proper maintenance and expansion of sewage infrastructure are essential for mitigating environmental contamination and safeguarding public health.

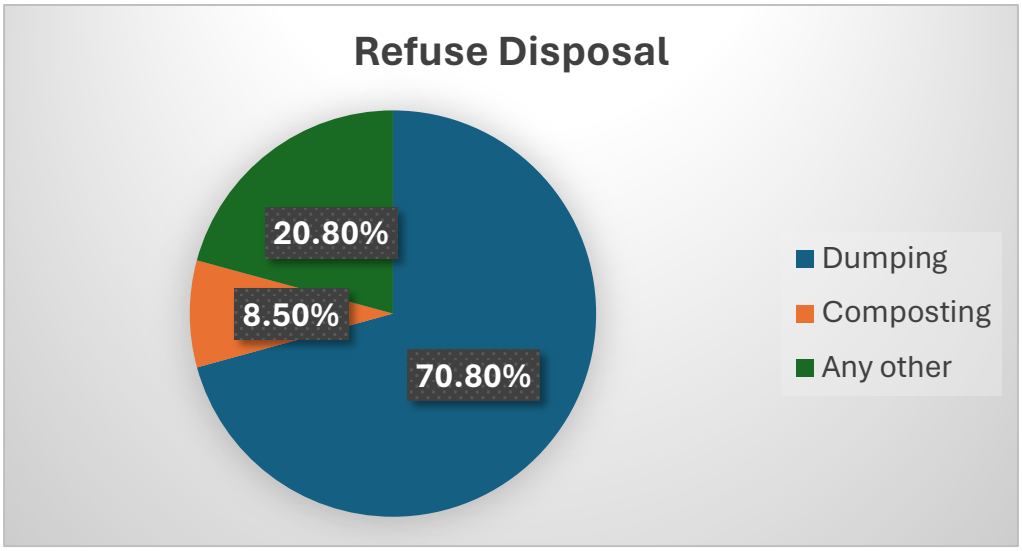


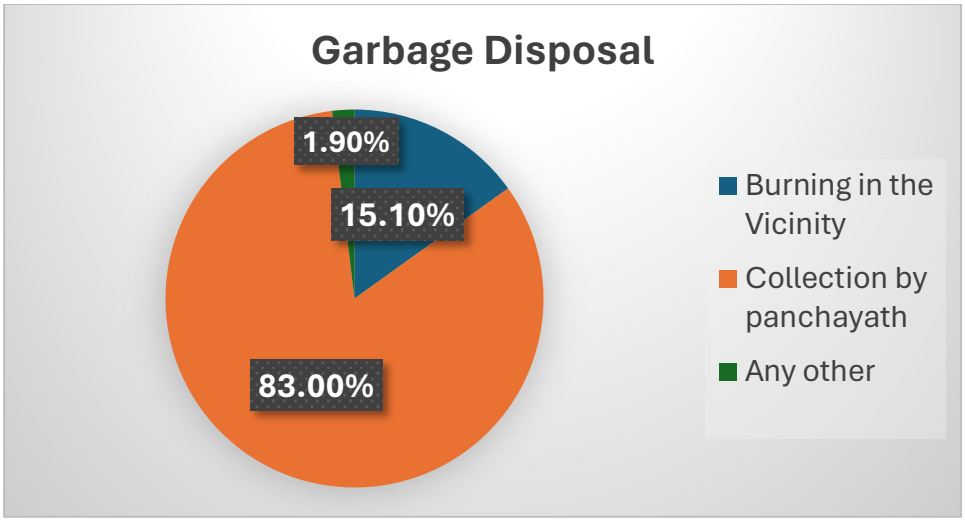
Among the respondents, the most common method reported was the use of soakage pits, with 55 households (51.90%) utilizing this approach. Additionally, a significant proportion (30 households, 28.30%) reported using septic tanks for sullage disposal. However, it's concerning that a notable portion of households (21, 19.80%) indicated not having any method of sullage disposal, which could potentially lead to environmental contamination and health risks. Ensuring access to proper sullage

disposal methods for all households is essential for maintaining environmental hygiene and public health standards within the community.



Among the respondents, the most prevalent method reported was dumping, with 75 households (70.80%) indicating this approach. Additionally, a smaller proportion (9 households, 8.50%) reported composting as their method of refuse disposal. It's notable that a significant portion of households (22, 20.80%) reported using other methods for refuse disposal, highlighting a diverse range of practices within the community. Efforts to promote sustainable waste management practices, such as composting, could contribute to environmental conservation and public health improvement within the community.





Breeding of mosquitoes and flies

Among the respondents, 76 households (71.70%) reported having environments conducive to mosquito breeding. Conversely, 30 households (28.30%) reported not having such environments. Given the potential health risks associated with mosquito-borne diseases, efforts to mitigate mosquito breeding sites and promote effective vector control measures are essential for safeguarding public health within the community.

Among the respondents, 35 households (33.00%) reported having environments favorable for fly breeding, while 71 households (67.00%) reported not having such environments. Given the potential health hazards associated with flies as vectors for disease transmission, it's crucial to implement measures to mitigate fly breeding sites and promote hygienic practices within the community to safeguard public health.

Community Diagnosis - Conclusion

The programme encompassed a sample of 106 families, revealing a diverse range of living conditions and health-related practices. Most of these families (62.3%) were nuclear, reflecting a prevalent household structure. Notably, 19.8% of families availed insurance schemes, indicating a degree of financial planning for health emergencies. However, concerning sanitation, a significant portion (33%) of households had environments conducive to fly breeding, while an even larger proportion (71.7%) harbored conditions suitable for mosquito breeding, potentially posing health risks.

Sanitation practices varied among households, with 98% utilizing septic tanks for sewage disposal. Yet, concerning was the finding that 19.8% lacked proper sullage disposal methods, which could contribute to environmental contamination. While the majority (83%) relied on panchayat services for garbage disposal, a concerning 15.1% resorted to burning waste nearby, potentially contributing to air pollution.

Health indicators within the population revealed a mixed picture. While a high percentage (95.3%) had access to sanitary latrines, some households lacked basic hygiene practices such as improper food storage (2.8%) and uncovered cooked food (0.9%). Additionally, a notable proportion lacked essential household features like smoke ventilation (13.2%), separate kitchens (2.8%), and natural lighting (1.7%), potentially impacting overall health and well-being.

The socioeconomic profile of the population showed a significant proportion of unemployment (42.5%) and homemakers (15.7%). Furthermore, a concerning 25.2% had comorbidities, with hypertension (18%), diabetes mellitus (12.2%), and coronary artery disease (CAD) (4.4%) being prevalent. Childhood immunization coverage was relatively high, with only two children (1.9%) partially immunized.

Comparatively, the literacy rate within the study population (5.5%) aligned closely with the Kerala average (6%) but stood significantly lower than the national average (26%), indicating the influence of regional education initiatives. These findings underscore the importance of targeted interventions to address sanitation challenges, improve health literacy, and mitigate the burden of chronic diseases within the community.