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Knowledge And Practice Regarding Sanitation and Hygiene Among Inhabitants of FAP Village of a Tertiary Care Centre in Kanpur District, UP, India: A Cross-Sectional Study

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ABSTRACT

Introduction: Sanitation is very important for wellbeing and good health of the society. Unless there are proper and functional sanitation facilities that are compounded with right type of hygienic practices, recurrent incidences of water and sanitation related diseases are bound to reoccur.(1)

Aim and Objectives: To assess the knowledge and practice of inhabitants of a village regarding sanitation and hygiene in Kanpur district, UP, India.

Material and methods: A community-based cross-sectional study was conducted in a rural area of Kanpur district UP, India during 20thDecember 2025to 20thJanuary 2026 in individuals aged more than equal to 18 years. The households were selected by purposive sampling and either head or next to head or the available family member was interviewed face to face in door to door survey, using a semi structured Questionnaire.

Results: this study shows that 17% of participants practice open defecation due to non usage and discomfort using sanitary latrine.

Keywords: *Sanitation, Hygiene practices, Rural population, Open defecation*

INTRODUCTION

Sanitation and hygiene are fundamental determinants of health and play a crucial role in preventing infectious diseases, particularly in rural communities. Understanding community-level knowledge and practices is essential for designing effective interventions. In many areas, factors such as socioeconomic status, literacy levels, and infrastructure availability influence sanitation behavior and hygiene compliance. Assessing the current status of sanitary latrine use, reasons for open defecation, and handwashing practices provides insight into existing barriers and opportunities for improvement. The effects of poor sanitation seep into every aspect of life — health, nutrition, development, economy, dignity and empowerment. Although government agencies are providing the infrastructural support to improve sanitation condition in the developing countries, nevertheless there is a need for collateral personal hygiene and sanitary education to achieve improved outcomes**.(2)**On October 2, 2019, all the villages in the 36 States and Union Territories of India were declared open defecation-free (ODF). However, recently published data from the National Family Health Survey (NFHS-5) show that none of the 30 States surveyed are open defecation-free. The survey results show that residents in over 25% of rural households defecated in the open**.(3)**

AIMS AND OBJECTIVES

1. To determine the prevalence of sanitary latrine use and identify reasons for open defecation in study participants.
2. To assess handwashing practices.
3. To determine the association between sociodemographic factors, and sanitation/hygiene practices.

MATERIAL AND METHODS

Study design: A Community based cross sectional analytical study.

Study setting and study population: The study was carried out in Shivdeenpurwa,a Family Adoption Programme village of Dr.B.S.Kushwaha Institute of Medical Sciences, ,Kanpur,UP,India, with a total population of 1510 consisting of 304 households.

Study duration: One month from 20th December 2025 to 20th January 2026

Sampling technique: Purposive sampling was used to collect data for the study.

Inclusion criteria:Persons above 18 years of age residing in the village for at least 10 years.

Exclusion criteria:Those who were not willing,orlocked houses.

Sample size: A total of 100 households were selected for the study ,starting from the first street and first household of the village and further households were selected in a consecutive right direction.Only one adult was interviewed per household.

Data collection:Face-to-face interviews were conducted by the investigator after obtaining informed consent from participants.A pre-tested, semi -structured questionnaire was used to collect information on Sociodemographic details ,Latrine availability and usage,its type,reasons for open defecation,knowledge and practices related to handwashing. Data was collected with the help of epicollect 5.

Data analysis:Data were compiled and analyzed using Microsoft Excel and jamovi 2.4.8, descriptive statistics such as frequencies and percentages were used to explain demographic and other details.Chi square test was used to describe the association between sanitation and demographic characterstics of study participants.

Ethical consideration:Informed consent was obtained from all participants. Privacy and confidentiality were ensured throughout the study.Permission was obtained from Institutional Ethical Committee of college, as well as Gram Pradhan of village.

RESULTS

Table 1: Demographic distribution of study participants (N=100)

Variable	Category	Number	Percentage
Age group	<20	2	2.0
	20-29	26	26.0
	30-39	34	34.0
	40-49	21	21.0
	50-59	13	13.0
	>/=60	4	4.0
Total		100	100
Gender	Male	5	5.0
	Female	95	95.0
Total		100	100
Religion	Hindu	100	100
Marital status	Married	89	89.0
	Unmarried	11	11.0
Total		100	100

Education	No formal schooling	38	38.0
	Primary	14	14.0

	Middle	15	15.0
	High school	13	13.0
	Intermediate	11	11.0
	Graduate and above	9	9.0
Type of family	Nuclear	67	67.0
	Joint	26	26.0
	Three generation	7	7.0
Total		100	100
SES	Lower class	19	19.0
	Lower middle	50	50.0
	Middle class	17	17.0
	Upper middle class	14	14.0
Total		100	100

The majority of study participants were in the 30–39 age group (34%), followed by those aged 20–29 years (26%) and 40–49 years (21%). Participants under 20 years and those aged 60 years or older made up only 2% and 2%, respectively. Females represented a significant majority of the study population at 95%, while males accounted for just 5%,as females were available in houses at the time of interview while males were out for work. All participants were Hindus. A significant portion of participants were married, comprising 89%, while only 11% were unmarried. Regarding educational attainment, 38% had no formal schooling. Following this group, 15% had completed middle school, 14% had reached the primary level, and 13% had graduated from high school. A mere 9% of participants were graduates or had pursued higher education, indicating a relatively low level of education among the group. About family structure, the majority of participants lived in nuclear families (67%), followed by those in joint families (26%) and three-generation families (7%). An assessment of socioeconomic status revealed that half of the participants (50%) belonged to the lower-middle class, while 19% were from lower class. The middle class accounted for 17%, and the upper-middle class comprised 14% of the participants. (See Table 1)

Table 2: Knowledge and practices regarding sanitation (N=100) :

Variable	Category	Number	Percentage
Usage of sanitary latrine	Yes	83	83.0
	No	17	17.0
Type of latrine	Pour flush to sewer	83	83.0
	Open defecation	17	17.0
Frequency of open defecation	Never	77	77.0
	Sometimes	6	6.0
	Regularly	17	17.0
Reason for open defecation	Non functional latrine	17	17.0
	uncomfortable	6	6.0
	N/A	77	77.0

Out of the 100 participants, 83% reported usage of sanitary latrine , while 17% did not use sanitary latrine. Regarding the type of latrine used, 83% of participants utilized pour-flush latrines connected to a sewer system, whereas 17% still engaged in open defecation. In terms of the frequency of open defecation, the majority of participants (77%) stated that they never practiced open defecation. However, 6% admitted to practicing it occasionally, and 17% reported doing so regularly. Out of total 17% households do not possess functional sanitary latrine,6% participants admit that they are not comfortable in using sanitary latrine.(See Table 2)

Table 3: Knowledge and practice regarding hygiene (N=100) :

Variable	Category	Number	Percentage
Washing hands before eating	Yes	100	100.0
	No	0	0
Total		100	100

Washing hands before cooking	Always	94	94.0
	sometimes	6	6.0
Total		100	100
Washing hands after defecation	Always	100	100.0
	Sometimes	0	0
Total		100	100
Material used for handwashing	Soap and water	100	100.0
	Water only	0	0
	Mud/ash	0	0
Total		100	100

All participants (100%) reported washing their hands before eating, indicating universal awareness of this hygienic practice. With regard to handwashing before cooking, the majority (94%) reported always washingtheir hands, while 6% practiced it sometimes. Similarly, 100% of participants reported always washing their hands after defecation, reflecting excellent adherence to this critical hygiene behavior. Concerning the material used for handwashing, all participants (100%) used soap andwater. None reported using water alone, mud, or ash.

Table 4:Association of sanitation with demographic factors(N=100)

Variable	category	Use of sanitary latrine		Chi square	P value
		Yes	No		
Age Group	<20	1	1	14.1	*0.015
	20-29	16	10		
	30-39	31	3		
	40-49	19	2		
	50-59	12	1		
	>/=60	4	0		
Gender	Female	81	14	6.90	*0.009
	Male	2	3		
Total		83	17		
Socioeconomic status	Lower class	14	5	9.25	*0.026
	Lower middle	38	12		
	middle	17	0		
	Upper middle	14	0		

*P value</=0.05 is statistically significant

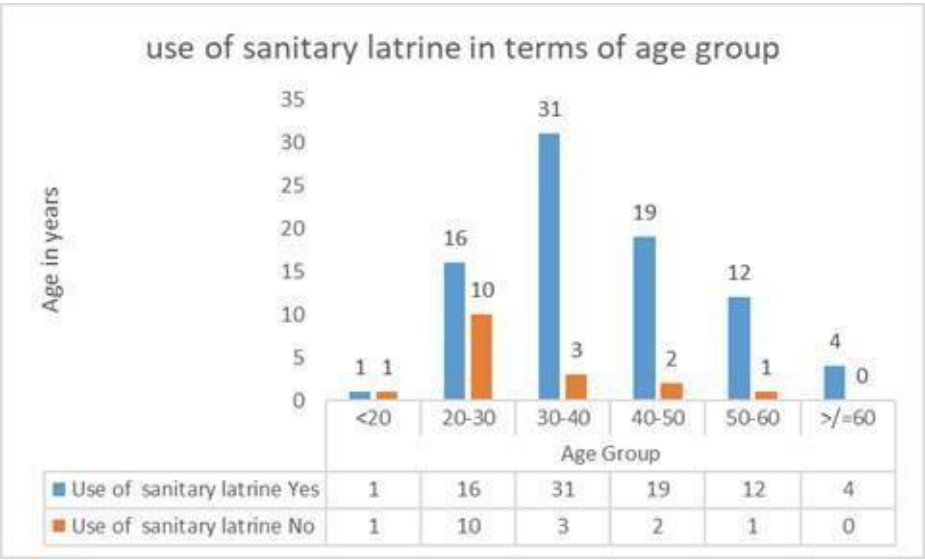

Fig:1 use of sanitary latrine in terms of age group

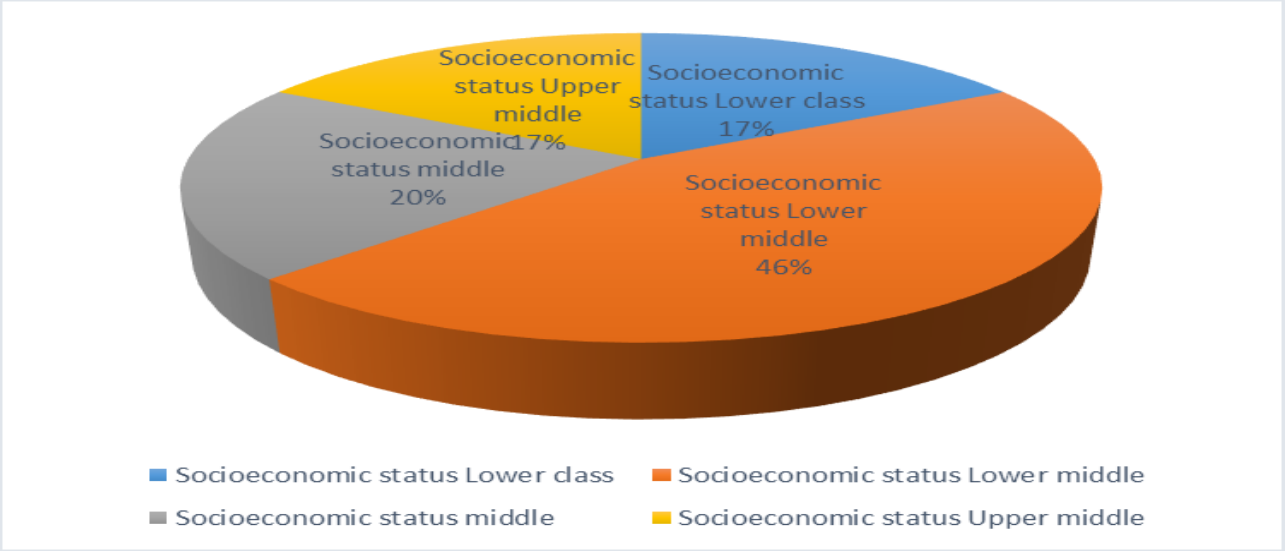

Fig 2:use of sanitary latrine in terms of socioeconomic status (N=100)

A statistically significant association was observed between genderand the practice of sanitary latrine. A higher proportion of females (81 out of 95) reported usage of sanitary latrines compared to males (2 out of 5)**.** This association was found to be statistically significant($\chi^2 = 6.90$, $p = 0.009$).A statistically significant association was also found between socioeconomic status and the use of sanitary latrine ($\chi^2 = 9.25$, $p = 0.026$). Participants belonging to the middle andupper- middle socioeconomic classes had 100% usage of sanitary latrines, whereas comparatively lower usage was observed from lower and lower-middle classes.

DISCUSSION

In a study by Rekha hothuretal majority of study population interviewed belongs to age group of 18-29 years (36.9%) and majority interviewed were females 169(71.6%)likewise in this study majority 95% are female reason being at the time of interview mostly females were available at home while males were at workplace.(4)According to Sheethal MP etal in their study Sanitary latrine was present in 213 houses (82%) and rest 18% practiced open air defecation,similarly in our study 83% houses posess functional sanitary latrine while 17% practiced open air defecation.(5)In a study by Ravi Pachori households washed their hands after toilet with soap 198 (66%) and remaining by others like as Ash, Mud, Plain Water 102 (34%)in contrast 100 % households in our study practiced handwashing with soap and water.(6) in a study byVenkateswarlu M among the people practicing open air defecation 115 (26.1%) belong to lower class, 226 (51.2%) belong to upper lower class, 94 (21.3%) belong to lower middle class, and 6 (1.4%) belong to upper middle class while in our study half of the participants (50%) belonged to the lower-middle class, while 19% were from the lower class. The middle class and upper-middle class constituted 17% and 14%, respectively.(7)

It is essential to implement targeted educational programs aimed at improving awareness of water, sanitation, and hygiene practices, enhancing access to hygiene facilities, and involving community leaders in promoting behavioral change. Additionally, improving the availability of clean water and sanitation services in Internally Displaced Persons camps is crucial for improving health outcomes and overall well-being among this population (8).

CONCLUSION

The study highlights a high level of sanitation and hand-hygiene practices among the study participants, with 83% households having access to sanitary latrines and universal use of soap and water for handwashing before eating, before cooking, and after defecation. Despite this, 17% of participants still practiced open defecation, either regularly or occasionally, indicating a persistent gap between infrastructure availability and actual utilization.The presence of sanitary latrines was found to be significantly associated with gender**,** socioeconomic status. Higher socioeconomic status was associated with universal latrine usage, whereas lower and lower-middle classes showed comparatively poorer usage. The significant association with gender suggests differences in sanitation access or reporting within households.

Overall, while the findings reflect the positive impact of sanitation initiatives such as theSwachh Bharat Mission, targeted efforts are still required to address open defecation practices, particularly among lower socioeconomic groups. Continued behavior change communication, & community engagement, are essential to achieve sustained improvements in sanitation and hygiene practices.

Limitations of the Study:

1. As this was a cross-sectional study, a cause–effect relationship between sociodemographic factors and sanitation practices could not be established.
2. Data on sanitation and hand-hygiene practices were based on self-reporting, which may be subject to social desirability and recall bias, especially for behaviors such as handwashing and open defecation.
3. The study included only 100 participants, which may limit the generalizability of the findings to the wider population.
4. The majority of participants were females (95%), which may have influenced responses related to household sanitation practices and may not fully represent male perspectives.
5. The study was conducted in a single rural area, and findings may not be applicable to other rural or urban settings with different cultural or socioeconomic contexts.

DECLARATION

Conflicts of interests: The authors declare no conflicts of interest.
Author contribution: All authors have contributed in the manuscript.
Author funding: Nill

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