Knowledge, attitude and practice of sanitation and use of sanitary latrine in a village of north Karnataka

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Abstract

Background: As improvement in sanitation is one of the Sustainable Development Goals, awareness about and lack of sanitary toilet in rural areas is still a major hurdle. Poor water quality and sanitation are leading causes of mortality and disease in developing countries. However, interventions to provide toilets in rural areas have not substantially improved health, likely because of incomplete coverage and low usage.

Objectives: 1. To assess the proportion of households with sanitary latrines and their utilization. 2.To assess the knowledge, attitude, and practice of benefits of sanitary latrines.

Methods: A cross sectional study was conducted among 88 houses in Kon-melkunda (village) in North Karnataka from 13 April,2020 to 10 May, 2020.A semi-structured pilot tested questionnaire was used to collect data.

Results: The proportion of the of the study participants practicing open air defecation is 31.8%. Among those not using sanitary latrine, 57.14% were unskilled workers, 50% were illiterate, 36% were belonged to class II of modified BG Prasad classification, 64.28% were living in three generation family. 90.7% of those having good knowledge of sanitation were using sanitary latrine. 83.67% of those having positive attitude towards sanitation were using sanitary latrine. 94.4% of those having good practice of sanitation were using sanitary latrine.

Conclusion: In the study, 69% of the participants have sanitary latrine in their house and almost all use the same. 48.9% of the study participants had good knowledge, 61.4% had positive attitude and 55.7% had good practice related to the use of sanitary latrine. Good knowledge, positive attitude and good practices of sanitation were all found to be statistically significantly associated with the use of sanitary latrines

Key words: Open air defecation, sanitary latrines, magnitude

Introduction

According to 2012 update report of UNICEF and WHO, out of 2.4 lakh Gram Panchayats in India only 29000 are free of open air defecation. According to 11th five-year plan of India, rural sanitation coverage was only 1% in the 1980s. With the launch of central rural sanitation program in 1986, the coverage improved to 4% in 1988 and then increased to 22% in 20019[1]. According to the NFHS 4 data, "The percentage of households practicing open defecation decreased from 55 percent in 2005-06 to 39 percent in 2015-16"[2].

Nearly 60 per cent of the people in the world who defecate in the open belong to India[3]. Unsanitary disposal of human excreta, along with unsafe drinking water and poor hygienic conditions, is the leading cause of morbidity and mortality in low-income countries, much of this disease burden consists of diarrheal diseases, a leading cause of death in young children[3].

The hazards of improper excreta disposal are soil pollution, water pollution, contamination of foods and propagation of flies thus resulting in the spread of a wide range of diseases like typhoid, cholera, dysentery, diarrhoea, hookworm diseases, ascariasis, viral hepatitis and similar other intestinal infections. As majority (about 70%) of Indian population live in villages, the health of the rural population reflects general health of our country[1].

The effects of poor sanitation seep into every aspect of life - health, nutrition, development, economy, dignity and empowerment[4].

Diarrhea is one of the leading causes of under nutrition in children with diarrheal disorders causing 12.6%

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of total deaths in children under the age group five years. 1.9 billion people gained access to improved sanitation facility over a period of two decades (1990 to 2011) with an average rate of 240,000 individuals gaining access every day[5].

Globally, water and sanitation hygiene practice are responsible for 90% of diarrhea related mortality, which is much higher than combined mortality from malaria and HIV/AIDS[4].

Recent studies estimate a possible 6-25% decrease in diarrhoea morbidity by improving water supply, 32% reduction by improving sanitation, 47% reduction by hand washing with soap[6].

Three key hygiene practices i.e. safe disposal of faeces, hand washing with soap at critical times along with safe treatment and storage of drinking water are the most effective ways in reducing water borne disease prevalence. Sanitation and hygiene practices are heavily influenced by people's knowledge and attitudes towards it[7]. Swachh Bharat Abhiyan is one the campaigns started by Government of India to improve the basic sanitation in the rural as well as the urban areas throughout the country. But the success of the Swachh Bharat Abhiyanis completely dependent on the rural population and their practices. When it comes to the northern part of Karnataka, the knowledge regarding the practices of sanitation is very limited.

So, the present study is an attempt to assess the proportion of households with sanitary latrines and to assess the knowledge, attitude and practice of their use in a village of North Karnataka.

Objectives:

1. To assess the proportion of households with sanitary latrines and their utilisation.
2. To assess the knowledge, attitude and practice of benefits of sanitary latrines.

Material and methods

Study design.-**Cross sectional study**

A community based cross sectional study was conducted in a selected rural area Kon-melkunda, in Bidar district, Karnataka, India, over a period of 1 month, April-May 2020. The village comprised of about 350-375 houses at the time of the study.

A pre-designed and pretested questionnaire was applied to collect the data which included various questions regarding socio-demographic data, knowledge, attitudes and practices related to sanitation and the use of sanitary latrine.

Before using the questionnaire, the purpose of the study was explained to the participants and verbal informed consent was obtained. The selected respondents were asked a set of questions from the semi structured questionnaire mentioned in the given tables.

Sample size calculation

According to the NFHS 4 data, "39%" of the households have no facility of improved sanitation, which means that the household members practice open defecation.

p= prevalence of open defecation = 0.39

q= (1-p) = (1-39) =0.61

d=permissible error = 10% =0.10

$$n = \frac{4pq}{d^2}$$

$$n = \frac{(4 \times 0.39 \times 0.61)}{(0.10)^2}$$

= 96

The sample size obtained is 96 but we could collect the data from 88 households only.

A sample of 88 households was selected for the study using simple random sampling technique by lottery method. One member from each household, preferably the head of the family (if not available, any elder person in the family), was interviewed personally.

Data was entered in MS-Excel and was analysed using SPSS version 26 software.

Descriptive statistics were calculated for socio-demographic data, prevalence of sanitary latrine usage and open air defecation was detected. The data was analysed and represented by tables and scatter plots. **Chi-square test** was used to find the association between important socio-demographic variables and knowledge, attitude and practices of sanitation. **Pearson correlation** was done to find the correlation between two quantitative variables.

Results

Out of 88 participants, 61 (69%) have sanitary latrine in their household and almost all of them use the sanitary latrine for defecation. But still 21% of the households still engage in Open air defecation which is an issue of concern. (Figure 1)

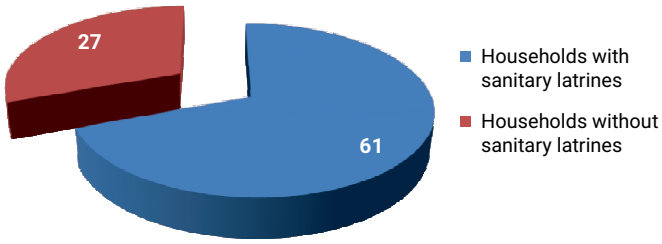

Figure 1: Figure showing the presence and use of sanitary latrines in the household.

The proportion of the study participants having sanitary latrine in their house was 69%and almost all use the same.

Among those not using sanitary latrine, 57.14% were unskilled workers, 50% were illiterate, 36% were belonging to class II of modified BG Prasad classification, 64.28% were living in three generation family. (Table 1)

Table 1: Table showing the effect of socio-demographic factors on the use of sanitary latrine in the household of study participants

Socio-demographic factor	Sanitary latrine		Chi-square value	P-value
	Using (%)	Not using (%)		
Occupation				
Unskilled	12(20)	16(57.14)	12.14	**0.0005**
Semiskilled	14(23.33)	8(28.57)		
Skilled/ professional	34(56.67)	4(14.28)		
Education				
Nil	5(8.33)	14(50)	22.63	**0.0001**
Middleschool	7(11.67)	5(17.85)		
SSLC	9(15)	4(14.28)		
Graduate	22(36.67)	3(10.71)		
Post graduate	17(28.33)	2(7.14)		
Socio-economic status				
I	32(53.33)	7(25)	6.58	**0.037**
II	18(30)	9(36)		
III	4(6.67)	6(21.42)		
IV	5(8.33)	3(10.71)		
V	1(1.67)	3(10.71)		
Type of family				
Nuclear	25(41.67)	5(17.85)	4.52	**0.033**
Joint	13(21.67)	4(14.28)		
Three generatiom	20(33.33)	18(64.28)		
Broken	2(3.33)	1(0.03)		

In the above table we can see that there is a statistically significant association between the occupation, education, socio-economic status according to modified BG Prasad classification[8] and type of family with the use of sanitary latrine in the household.

The mean knowledge score was 7.38 with a standard deviation of 1.75, the mean practice score was 6.07 with a standard deviation of 2.28 and the mean attitude score was 3.37 with a standard deviation of 0.998.

Table 2: Table showing the knowledge, attitude and practices related open air defecation among the study participants.

Knowledge	Good(>7)	43(48.9)
	Bad(<7)	45(51.1)
Attitude	Positive(>6)	54(61.4)
	Negative(<6)	34(38.6)
Practice	Good(>3)	49(55.7)
	Bad(<3)	39(44.3)

In the above table we can see that 48.9% of the study participants had good knowledge, 61.4% had positive attitude and 55.7% had good practice related to the use of sanitary latrine. (Table 2)

Table 3: Table showing the association of knowledge, attitude and practice related to open air defecation with the use of sanitary latrines.

Knowledge, Attitude and Practices related to open air defecation	Sanitary latrine		Chi-square value	P-value
	using	Not using		
Knowledge				
Good	39(90.7)	4(9.3)	19.65	**<0.00001**
Bad	21(46.7)	24(53.3)		
Attitude				
Positive	41(83.67)	8(16.33)	12.23	**0.0004**
Negative	19(48.7)	20(51.3)		
Practice				
Good	51(94.4)	3(5.6)	44.44	**<0.00001**
Bad	9(26.47)	25(73.53)		

In the above table we can see that knowledge, attitude and practice related to sanitation, all have statistically significant association with the use of sanitary latrines.

- 90.7% of those having good knowledge of sanitation were using sanitary latrine whereas only 46.7% of those having bad knowledge of sanitation were using sanitary latrine. (Table 3)
- 83.67% of those having positive attitude of sanitation were using sanitary latrine whereas only 48.7% of those having negative attitude of sanitation were using sanitary latrine. (Table 3)
- 94.4% of those having good practice of sanitation were using sanitary latrine whereas only 26.47% of those having bad practice of sanitation were using sanitary latrine. (Table 3)

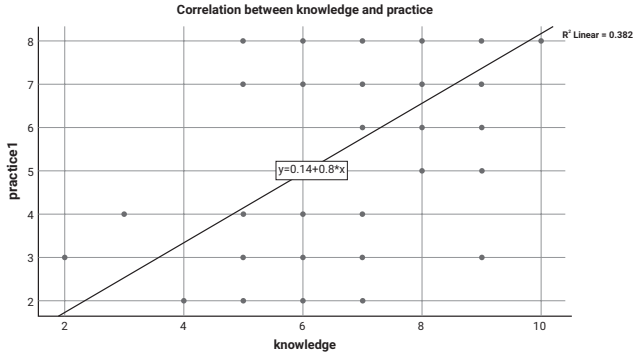

Figure 2: Figure showing correlation between the knowledge score and practice score related to open air defecation.

In the above figure we can see that there is a positive correlation between the knowledge score and the practice score i.e. with increase in the knowledge there is an improvement in the practice related to open air defecation. (r=0.618 and p-value=0.000) (Figure 2).

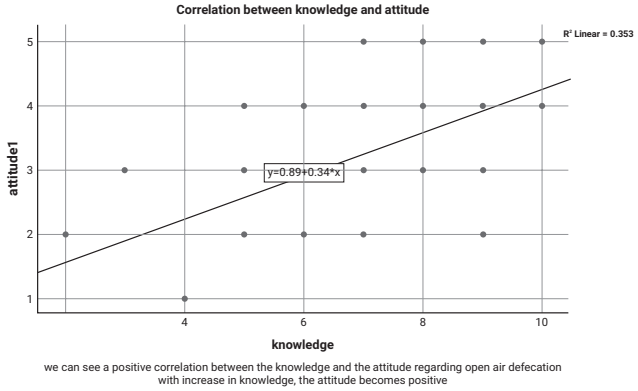

Figure 3: Figure showing correlation between the knowledge score and attitude score related to open air defecation.

the above figure we can see that there is a positive correlation between the knowledge score and the attitude score i.e. with increase in the knowledge there is an improvement in the attitude related to open air defecation.(r=0.594 and p-value=0.000) (Figure 3).

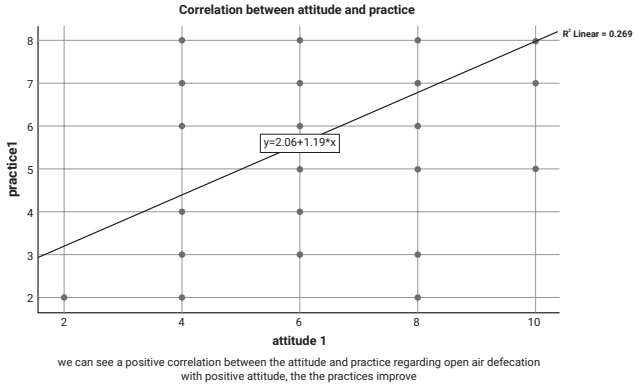

Figure 4: Figure showing correlation between the attitude score and practice score related to open air defecation.

In the above figure we can see that there is a positive correlation between the attitude score and the practice score i.e. with improvement in the attitude there is a positive impact on the practices related to open air defecation. (r=0.518 and p-value=0.000) (Figure 4)

Discussion

In our study it was found that 69.3% of the study participants have sanitary latrine in their household whereas in a study conducted by Arshiya Taranum et al[9] in a rural field practice of Navodaya Medical College, it was found that 52.5% of the study participants have sanitary latrine in their household.

In our study we found that 31.8% of the study participants practice open air defecation and in a study conducted by R Anuradha et al[3] it was found that 33.1% practiced open air defecation which is almost in line with our study.

In the above mentioned study by Arshiya Taranum et al[9], it was found that 66.29% of the illiterates, 84.6% of the participants belonging to Class V,70% belonging to joint family and 71.45% belonging to three generation family practiced Open air defecation whereas in our study we found that 50% of the illiterates, 36% belong to class II and 25% belong to class I of modified BG Prasad Classification, 64.28% belonging to three generation family practiced open air defecation and in a study conducted by Swarnapriya Vasudevan et al[10] 87.03% of the participants who lived in nuclear family practiced open air defecation.

In a study conducted by Sidharaj Jeratagi et al[1],18% of the study population had poor knowledge, 22.8%of the study participants had negative attitude, 29.7% of the study participants had poor practices related to sanitary toilet. Whereas in our study 51.1% of the study population had poor knowledge, 38.6% of the study participants had negative attitude, 44.3% of the study participants had poor practices related to sanitary toilet.

Conclusions

- The proportion of study participants practicing open air defecation is 31.8%.
- Education of the head of the family, occupation of the head of the family, socio-economic status, and type of family were all found to be statistically significantly associated with the use of sanitary latrines.
- The Knowledge, attitude and practices status regarding sanitation and the use of sanitary latrine is as follows. 48.9% of the study participants had good knowledge, 61.4% had positive attitude and 55.7% had good practice related to the use of sanitary latrine.

- Good knowledge, positive attitude and good practices of sanitation were all found to be statistically significantly associated with the use of sanitary latrines

Limitations:

1. Limited duration of study.
2. The study was conducted in only one village of Bidar district so the results cannot be generalized to the whole district or state.

Recommendation

To plan regular IEC campaigns with respect to sanitation and to motivate people for use of sanitary latrines.

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