International Journal of Community Medicine and Public Health
Panda PS et al. Int J Community Med Public Health. 2017 Sep;4(9):3279-3282
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20173828

Original Research Article

Prevalence of open air defecation and awareness and practices of sanitary latrine usage in a rural village of Raipur district

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Received: 21 June 2017
Accepted: 19 July 2017

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ABSTRACT

Background: The practice of open defecation is rampant in India and our country is home to the world's largest population of people who defecate in the open. Insanitary disposal of human excreta, along with unsafe drinking water and poor hygiene conditions, is a leading cause of morbidity and mortality in low-income countries. The study was conducted with objective to find sanitary latrine usage, prevalence of open air defecation and awareness related to diseases caused by open air defecation in the rural population of a village in Raipur district.
Methods: A total of 155 households were 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. A structured questionnaire was used to collect information regarding the background characteristics, awareness and practices about sanitary latrine usage.
Results: Majority of the study participants 109 (70.3%) had sanitary latrines in their houses. The prevalence of open air defecation in the study area was found to be 23.2%. Around 2/3rd (65.2%) of study subjects were not aware about spread of disease due to open air defecation.
Conclusions: Awareness regarding spread of diseases due to open air defecation is poor. Effective political commitment and administrative support will be the key points of success of the Swachha Bharat Abhiyaan program.

Keywords: Open air defecation, Sanitary latrine, Awareness, Rural

INTRODUCTION

The practice of open defecation is rampant in India and it is home to the world's largest population of people who defecate in the open and excrete close to 65,000 tones of faeces into the environment each day. Around 564 million people, which are nearly half of the population in India, defecate in the open. India accounts for 90% of the people in South Asia and 59% of the 1.1 billion people in the world who practise open defecation.[1]

Insanitary disposal of human excreta, along with unsafe drinking water and poor hygiene conditions, is a leading cause of morbidity and mortality in low-income countries.[2] Much of this disease burden consists of diarrheal disease, a leading cause of death in young children. In addition, inadequate sanitation is implicated in schistosomiasis, helminth infections, enteric fevers and trachoma.[3]

The government launched the Swachh Bharat Mission (SBM) in 2nd October 2014, which promises 110 million toilets built in the next five years in an effort to make India an "open defecation free country." In an added bonus, the waste collected would be converted to fertilizer and other forms of energy. Lauded as a "sacred mission" that would coincide with the 150th anniversary of Mahatma Gandhi's birth, this mission has gained approval from almost all sections of the government and society.[4]

The study was conducted with an objective to find sanitary latrine usage, prevalence of open air defecation and awareness related to diseases caused by open air defecation in the rural population of Khorpa village in Raipur district.

METHODS

The present study was a community based cross sectional study which was conducted among the rural population of Khorpa village of Raipur district from February 2017 to June 2017.

A total of 155 households were selected for the study using simple random sampling technique. One member from each household, preferably the head of the family was interviewed personally. A structured questionnaire was used to collect information regarding the background characteristics, awareness and practices about sanitary latrine usage.

The subjects who were staying in the village since last one year were included in the study. Refugees, nomads, brick kiln workers and other temporary residents were excluded from the study. The purpose of the study was explained to the participants and informed consent was obtained.

Data entry was done using Microsoft excel and analysis was done using the PSPP software. Descriptive statistics were calculated for background variables, prevalence of sanitary latrine usage and open air defecation. Association between factors responsible for open air defecation was found by using chi square test. P value also calculated to find out significance level.

RESULTS

Out of total 155 participants, 143 (92.3%) were male and 12 (7.7%) were female. The mean age of study participants was 46.3±11.2 years. Mostly belonged to Hindu (98.7%), and rest were others (1.3%). Among the study participants, 31.6% were illiterate and rests were literate. Almost two-third study subjects were employed (65.2%). Among interviewed subjects 86.5% belonged to nuclear family and 13.5% belonged to joint family. Out of total participants 6.5% belonged to upper class, 36.1% middle class and 57.4% lower class.

Majority of the study participants 109 (70.3%) had sanitary latrines in their houses and all their family members were using it. Public tap (92.7%) was the most common source of water supply for the toilets followed by well water. The usage of community toilets was 6.5%. Among the total 46 participants who had not sanitary latrine in their houses, 36 participants practiced open air defecation and rest used community toilet. The prevalence of open air defecation in the study area was found to be 23.2% (Table 1).

Table 1: Distribution of study participants according to place of defecation.

Place of defecation	No. of respondents	Percentage (%)
Sanitary latrine at own house	109	70.3
Community toilet	10	6.5
Open air defecation	36	23.2
Total	155	100

Lack of money, awareness, space and interest may be the contributing factors for non-construction of sanitary latrine at their houses (Table 2).

Table 2: Distribution of participants according to reason for non-construction of sanitary latrine at own house.

Reasons	No. of respondents	Percentage (%)
Lack of money	10	21.7
Lack of space	05	10.9
Lack of interest	27	58.7
Staying in rented house	04	8.7
Total	46	100

Around 2/3rd (65.2%) of study subjects were not aware about spread of disease due to open air defecation (Table 3).

Table 3: Distribution of study participants according to awareness about open air defecation.

Awareness	No. of respondents	Percentage (%)
Awareness about consequences of open air defecation		
Unaware	101	65.2
Aware	54	34.8
Total	155	100
Awareness about diseases transmitted due to open air defecation		
Diarrhea	40	74.1
Dysentry	06	11.1
Typhoid	02	3.7
Worm infestation	06	11.1
Total	54	100
Awareness about mode of spread of diseases due to open air defecation		
Flies	42	77.8
Contaminated water	06	11.1
Contaminated food	02	3.7
Unclean hands	04	7.4
Total	54	100

Table 4: Association between open air defecation and socio-demographic variables.

Socio-demographic Variables	Open air defecation practiced (%)	Open air defecation not practiced (%)
Sex (χ^2=13.765, *p=0.0002)		
Male	28	115
Female	08	04
Total	36	119
Religion (χ^2=0.613, p=0.4337)		
Hindu	36	117
Christian	0	02
Total	36	119
Educational status (χ^2=72.525, *p=0.0000)		
Illiterate	30	13
Primary School	03	72
Middle School	03	34
High school/Post High school/ Graduate/Post Graduate	00	00
Total	36	119
Occupational status (χ^2=36.325, *p=0.0000)		
Unemployed	28	26
Unskilled	07	29
Semiskilled	01	52
Skilled/ Semiprofessional/ Professional	00	12
Total	36	119
Socio-economic Status (χ^2=7.949, *p=0.0048)		
Upper	00	10
Middle	08	48
Lower	28	61
Total	36	119
Family Type (χ^2=0.389, p=0.5327)		
Nuclear	30	104
Joint	06	15
Total	36	119

* p<0.05= significant

DISCUSSION

The cross-sectional study was conducted in the rural village of Raipur district, Chhattisgarh to estimate the prevalence of open air defecation and to assess the association between open air defecation and social factors.

In spite of presence of community latrine, 23.2% of the population opted for open air defecation in the present study. Result was found to be comparable with the study conducted by Anuradha et al in Tamil Nadu where 33.1% of population opted for open air defecation.[5] Results were observed by another study conducted in Bangladesh, where open air defecation was practiced by 42% to 79% of the total population.[6] A study done in Maharashtra by Bhardwaj et al showed that 67% practiced open air defecation. The prevalence of open air defecation was found to be very high in this study.[7] A study conducted by Geetha in Tiruchirapalli in Tamil Nadu, the prevalence of open air defecation was found to be 90% which is very much high compared to our study.[8]

The proportion of the world population that practises open defecation declined by almost one third from 25% in 1990 to 17% in 2008. A decline in open defecation rates was recorded in all regions. In Sub-Saharan Africa, open defecation rates fell by 25 per cent.[9]

In this study significant association was found between socioeconomic status and open air defecation. (p=0.0048) Similar finding was obtained in the study conducted by Anuradha et al which also showed a significant association between between Socio-economic status and open air defecation. (p<0.0016).[5] Similar study conducted by Banerjee AB et al showed that there was significant association found between lower socioeconomic status and open air defecation practice (p<0.001).[10] Similarly significant association was found between open air defecation and sex, educational status, occupational status & socio-economic status.

The state of sanitation remains a powerful indicator of the state of human development in any community. Access to sanitation bestows benefits at many levels. Cross-country studies show that the method of disposing of excreta is one of the strongest determinants of child survival: the transition from unimproved to improved sanitation reduces overall child mortality by about a third.[10]

CONCLUSION

The prevalence of open air defecation is 23.2%. Factors contributing to non-construction of sanitary latrine are due to lack of money, interest, awareness, space. Awareness regarding spread of disease due to open air defecation is poor. A strong association was found between socioeconomic status and open air defecation. More than two-third subjects had sanitary latrine at their houses.

Recommendation

The study focuses on finding the open defecation rate and its attendant medical problems and with an intention to positively reform the awareness level and practices. Increasing awareness regarding spread of diseases and mode of spread will improve the good practices. Planning, Behavioral Change Communication and Attitude Correction are extremely necessary on this important issue. Effective political commitment and administrative support will be the key points of success of the Swachha Bharat Abhiyaan programme.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Panda PS, Chandrakar A, Soni GP. Prevalence of open air defecation and awareness and practices of sanitary latrine usage in a rural village of Raipur district. Int J Community Med Public Health 2017;4:3279-82.