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Knowledge, Awareness and Practices of Sanitary Latrine Usage under Swachh Bharat Mission in a Rural Area of Ajmer District, Rajasthan: A Cross Sectional Study

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Abstract:
Background*: More than half of the total population of India was defecating in open air ahead of the year 2014. Open air defecation has affected the physical and cognitive development of surviving children and affect the health conditions of the whole population, responsible for spread of diseases, increase in pollution level, etc. This situation is under control since last five years as the government has launched "Swachha Bharat Mission" to accelerate sanitation coverage by accessing a toilet in all households and to eliminate defecation in open air. Due to better planning and monitoring of the mission, prevalence of defecation in open is over continuously decreasing trend. Thus, the objective of this study is to obtain the baseline information on existing knowledge, awareness level of defecating in open andpractices the usage of household latrine and to determine the prevalence of defecation in open in rural area of Ajmer district, Rajasthan.*
Materials and Methods*: Study participants included 150 households using simple random sampling by computer generated random method. Information on socio-demographic characteristics, knowledge and awareness regarding sanitation and open air defecation was gathered using structured questionnaire. The Head of the family or the person who is the decision maker in the family, answered the questionnaire.*
Results*: Most of the households (86.67%) had sanitary latrines in their houses, members of 10 household were found to be using public toilets and members of only 10 households were found to defecate in open, i.e., prevalence is around 6.67%. Majority of study participates had adequate knowledge and were aware about the negative aspect of defecting in open. A significant association between lower standards of living and defecation in open air practice was found with p-value as 0.0001.*
Conclusion: *In our study, we found that knowledge and awareness about the spread of diseases due to defecation in open air has improved because of information, education and communication (IEC) activities by the print, electronic and social media and regular health talks by the staff and faculty of Department of Community Medicine during their Rural Health Training Centre (RHTC) visit. The inhabitants are motivated under Swachha Bharat Mission regarding the use of sanitary latrines and know the drawbacks of defecation in open.Hence, this is successfully executed in this study area. An effective political and administrative support is needed to scale up the sanitation program and cease the remaining open air defecation, Pan India.*
Key Word*: Open air defecation; Sanitation and hygiene; Knowledge; Awareness; Practices.*

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I. Introduction

Based on sustainable development goals, safe drinking water, proper disposal of sanitary waste and healthy hygiene condition is must to ensure long and healthy life of a human. The improper information about sanitation and hygiene practices may causes water pollution, soil pollution, contamination of foods and propagation of flies that results in spread of diseases like typhoid, diarrheas, cholera, dysenteries and similar other infections of the faeco oral route. So, there is a fundamental requirement to assess the knowledge regarding sanitation and hygiene in current situation. Before the government launched the Swachh Bharat Mission (SBM), defecation in open air was a major reason to influence the health of human life as 600 million people were defecating in open, out of which 69.3% belongs to rural areas and 18.6% belongs to urban areas[1]. The Swachh Bharat Mission (SBM) was launched by Indian government on 2nd October 2014 that assured to make India an "open air defecation free country" in the next five years by making 110 million toilets in countrywide[2,3]. Gupta et al conducted a survey to determine open defecation prevalence rate of the rural area of northern India and found that most of the study states had not achieved the open defecation free status, with 53% of individuals in rural area still defecating in open[4]. So, the objective of the present study is to determine

the current prevalence rate of defecation in open air in the rural area of Ajmer district. For this study, we recorded the quantitative data on usage of sanitary latrine, defecation in open air and its consequences on health as well as studied the awareness level about the positive or negative impact of defecation in open.

II. Material And Methods

In the present study, community based quantitative cross-sectional study design was considered for data collection at RHTC, Srinagar which has a total 1496 households. It comes under Rural Primary Health Centre, which is the field practice area of Department of Community Medicine, J.L.N. Medical College, Ajmer, Rajasthan. The study was conducted during October, 2018 to September, 2019. Observations were embedded to the quantitative cross sectional of this study.

Anganwadis of this area have documentation of serially listed households. Also, the Department of Community Medicine, J.L.N. Medical College, Ajmer is carrying out family surveys and the information is recorded in family folder. A total of 150 households were selected for the study using simple random sampling technique by computer generated random table method. For each selected household, one person (head of the family) was selected and interviewed personally.A structured questionnaire was developed to collect information which includes various questions regarding the background characteristics, awareness and practices about sanitary latrine usage was obtained. The questionnaire included four sections, namely socio-demographic characteristics of the study subjects, awareness aspects, knowledge aspects and practice aspects regarding sanitary latrines.

Data was entered using Microsoft excel and analysis was done using the R software with 3.6.1 version. Descriptive statistics were calculated for background variables, prevalence of sanitary latrine usage and open air defecation were recorded in terms of frequency and percentages. Chi-square test and its p-value were calculated to know the significant association between factors responsible for open air defecation at 5% level of significance.

III. Result

Among the 150 study subjects, majority of study participants (55.33%) were males and remaining (44.67%) were females. Most of the study participants were aged between 45 to 65 years. Majority of household 140 (93.33%) belonged to Hindu religion and rest 10 households (6.67%) belonged to other religions. Most of the study participants were literate(68%) and belonged to nuclear families (81.33%). More than a half of the study participants were employed. 90 (60%) participants had medium standard of living while 30 participants (20%) each had low and high standard of living respectively.

Table no 1: Place of defecation.

Place of defecation	Number of households	Percentage
Sanitary latrines at home	130	86.67%
Community toilets	10	6.67%
Open air defecation	10	6.67%
Total	150	100.00%

From Table no 1, it was recorded that almost 130 (86.67%) study participants had sanitary latrines in their houses and all family members were using it in a proper hygienic manner. The most common source of water supply for the toilets was public tap followed by well water. Only 20 participants out of 150 had no sanitary latrine in their house. Of these 20 participants, 10 (6.67%) practiced open air defecation and rest were using community toilet. Members of household using the community toilets werefacing problems likeirregular cleanliness and no proper water supply etc. In this study, we also found that maximum household members were using toilets as under Swachh Bharat Mission, government provided a platform to build the toilets at their houses and provided assured money incurred during the construction of the toilets. This is one of the reasons that open air defecation is somehow very much controlled in study area.

Table no 2 describes reasons for non-construction of sanitary latrine in their houses. These reasons are lack of money, space, interest, no proper water supply and staying in a rented house.

Table no2: Reasons for non construction of sanitary latrines at home.

Reasons for non construction of sanitary latrines at home	Number of households	Percentage
Lack of money	4	20.00%
Lack of space	3	15.00%
No proper & consistent water supply	5	25.00%
Lack of interest	4	20.00%
Staying in rented house	4	20.00%
Total	20	100.00%

Table no 3 provides the knowledge and awarenessabout defecation in open air among members of household of study area. Around 68 (45.33%) of study subjects were not aware about spread of disease due to open air defecation. Almost 82 (54.67%) study participants had proper knowledge about different diseases due to defecation in open. Of these aware participants, more than a half (58.54%) noticed that flies are the most common vector for spread of disease when defecation in open was practiced.

Table no3: Knowledge and Awareness about defecation in open air.

	Number of households	Percentage
Awareness about spread of disease due to defecation in open air		
Unaware	68	45.33%
Aware	82	54.67%
Total	150	100.00%
Awareness about diseases transmitted due to defecation in open air		
Diarrohea	50	60.98%
Dysentery	12	14.63%
Typhoid	15	18.29%
Worm infection	5	6.10%
Total	82	100.00%
Awareness about mode of spread of disease due to defecation in open air		
Flies	48	58.54%
Unclean hands	16	19.51%
Contaminated water	10	12.20%
Contaminated food	8	9.76%
Total	82	100.00%

Table no 4 association between open air defecation practices with socio-demographic factors. There is significant association was between standard of living and practice of defecating in open (p=0.0001) while no significant association was found with other socio-demographic factors like sex, religion, educational status, occupational status and family types.

Table no 4: Association between open air defecation and socio-demographic profile.

	Open Air Defecation	Open Air Defecation Not	Total N(%)	Chi square	p-value
Sex					
Male	5(6.02%)	78(93.98%)	83 (100.00%)	0.0004	0.9825
Female	5 (7.46%)	62(92.53%)	67 (100.00%)		
Total	10(6.67%)	140 (93.33%)	150 (100.00%)		
Religion					
Hindu	8(5.71%)	132 (94.29%)	140 (100.00%)	1.1958	0.2742
Others	2(20.00%)	8 (80.00%)	10 (100.00%)		
Total	10(6.67%)	140 (93.33%)	150 (100.00%)		
Educational Status					
Illiterate	6(12.5%)	42(87.50%)	48(100.00%)	4.0845	0.2525
Primary	3(4.41%)	65 (95.59%)	68(100.00%)		
Secondary/Senior Secondary	1(3.85%)	25 (96.15%)	26(100.00%)		
Graduate/Higher Degree	0(0.00%)	8 (100.00%)	8(100.00%)		
Total	10(6.67%)	140 (93.33%)	150(100.00%)		
Occupational Status					
Unemployed	4 (5.80%)	65 (94.20%)	69 (100.00%)	1.4847	0.6858
Unskilled	3(7.89%)	35(92.11%)	38(100.00%)		
Skilled	3 (9.68%)	28(90.32%)	31(100.00%)		
Professional	0(0.00%)	12 (100.00%)	12(100.00%)		
Total	10(6.67%)	140 (93.33%)	150(100.00%)		
Standard of Living Index					
Low	8(26.67%)	22(73.33%)	30(100.00%)	24.286	0.0001
Medium	2(2.22%)	88(97.78%)	90(100.00%)		
High	0(0.00%)	30 (100.00%)	30(100.00%)		
Total	10(6.67%)	140 (93.33%)	150(100.00%)		
Family Type					
Nuclear Family	7 (5.74%)	115(94.26%)	122(100.00%)	1.0617	0.5881
Joint Family	3(10.71%)	25(89.29%)	28(100.00%)		
Total	10(6.67%)	140 (93.33%)	150(100.00%)		

IV. Discussion

A cross-sectional study was conducted to assess knowledge, awareness and practice aspect regarding usage of sanitary latrines among residents of RHTC Srinagar area of Ajmer District, Rajasthan. The prevalence of defecating in open was determined (6.67%) and significant association between open air defecation and

variables like social factors, sex, educational status, occupational status etc. was estimated. We also recorded the knowledge and awareness of open air defecation among residents of study area and its effects on human health conditions.

In our study, we found only 6.67% of the population were defecating in open. This has happened because the government has taken a greatinitiative under Swachh Bharat Mission to make India Open Defecation Free (ODF) by providing financial support to construct toilet in their houses and by putting enormous efforts to make people aware by various media. Results found to be comparable with the studiesconducted by Panda et al in Chhattisgarh and Anuradha et al in Tamil Nadu, where 23.2% and 33.1% of population were found to be defecating in open air respectively[5,6]. A study done in Maharashtra by Bhardwaj et al showed that 67% population were practicing open air defecation[7].

Another study conducted in Venkateswarlu where open air defecation prevalence was very high around 80%[8].Exum et al studied the impact of Swachh Bharat Mission after declaration of open defecation free status by Govt. of India[10]. This study was conducted in Rajasthan state[9]. They found that most of the areas have not achieved the open defecation free status and there is a need to continuous focus on constructing toilets that are affordable with low water requirements during the next phase of Swachh Bharat Mission. The prevalence ofdefecation in open declined in all states from 52% in 2014-2015 to 20% in 2018-2019 as per report generated by national statistical commission[11,12].

In this study significant association was found between socioeconomic status and open air defecation ($p=0.0001$) which is similar to the finding obtained in the study conducted by Pandya et al and Anuradha et al[5,6]. Similarly, no significant association was found between defecation in open and sex ($p=0.9825$), educational status ($p=0.2525$), occupational status ($p=0.6858$) & family type ($p=0.5881$). The variations in our findings from the previous studies are due to the different study setting.

V. Conclusion

The present study observed that study participants had good knowledge, were aware about defecation in open and had healthy practices about usage of sanitary toilet in this region. Rest of the study participants from households went outside because no proper water supply was available in their houses and were having low income so could not built toilets in spite of subsidiary scheme from the government. Most of the households are aware with the consequence of defecation in open in terms of health and disease. To achieve the goal of Swachh Bharat Mission, health education extension programs at primary health care should be regularly carried out to improve knowledge of sanitary latrines and awareness of hazards about the open air defecation. Increasing awareness regarding health hazards and concept of observing privacy might improve these practices. Form the part of administrative support, subsidiary given by the government should be continued so that the incentive and use of sanitary toilets can be accelerated.

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