

## Original Research Article

# Socio-demographic factors affecting utilization of toilet among peoples attending tertiary care hospital at Bilaspur, Chhattisgarh

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## ABSTRACT

**Background:** By the end of 2011 there were 2.5 billion people, over one third of the world's population, living without safe, adequate sanitation and hygiene. The government of India is working towards making an open defecation free communities all over the India through Swachh Bharat Mission. So present study was conducted with the objective to find out toilet utilisation and its associated socio-demographic factors among study population.

**Methods:** A cross sectional, hospital based study was conducted among peoples attending tertiary care hospital of our medical college CIMS, Bilaspur. Total 384 individuals were interviewed during June 2017 to November 2017 by using predesigned and pretested questionnaire after taking written informed consent.

**Results:** Among the total 384 study participants 75.8% were male, maximum participants were in age group 30-49 years (i.e. 44.5%), 72.4% were married and 88.4% were literate. 62.8% study participants were residing in rural area, 55.4% were having kuccha house, 56.5% were having more than 5 members in their family and 27.6% were having under 5 year children in their family. Among study participants 83.9% were utilize toilet. Gender of study participant, residence, marital status, presence of under 5 years child in family and type of house of study participants are significantly associated with toilet utilization ( $p < 0.05$ ).

**Conclusions:** Though overall toilet utilization is good but focus should be given to male population and especially peoples residing in rural area to achieve open defecation free India under Swachh Bharat Mission.

**Keywords:** Toilet, Utilization, Socio-demographic factors, Tertiary care hospital

## INTRODUCTION

By the end of 2011 there were 2.5 billion people, over one third of the world's population, living without safe, adequate sanitation and hygiene. The lack of access to this essential service holds back social and economic development through its negative impacts on health, education and livelihoods. It is the principal cause of diarrhea, the second biggest killer of the children worldwide and it contributes significantly to malnutrition, stunting and overall global burden of disease.<sup>1</sup>

World nations have been working for the past two decades to double the number of people who have access to improved sanitation by 2015.<sup>2</sup> The progress in sanitation has witnessed a spurt, since the launch of the Swachh Bharat Mission. In the first year of the Mission i.e. from 2.10.2014 to 2.10.2015, 8.8 million toilets were constructed, against an expected outcome of 6 million. Since the launch of Swachh Bharat Mission more than 11.5 million toilets have already been constructed in the rural areas. The sanitation coverage, which stood at 40.60% as per the National Sample Survey Organization (NSSO) has increased to around 48.3%. There is a focus

on village sanitation and achievement of open defecation free (ODF) communities. Despite the comprehensive measures more than 50% of Indians, especially in the rural areas peoples continue to go for open field defecation.<sup>3</sup>

Having a latrine at home is found to be protective factor for communicable diseases.<sup>4,5</sup> But only construction of latrine will not assure their utilization. Utilization of latrine is dependent on complex nature of individual, social and environmental factors.<sup>6</sup> Also to implement nationwide programme in developing countries where resource are limited you need to decide the priorities to get maximum output in limited inputs. This type of priority factors for toilet utilisation can be found out through research studies. So, present study was conducted with the objectives to estimate the percentage of toilet utilisation and its associated socio-demographic factors among study population.

## METHODS

A cross sectional study was conducted among peoples attending tertiary care hospital of our medical college CIMS, Bilaspur. This tertiary care hospital is situated in the heart of city which is the only government referral centre in nearby 100 km distance, so peoples also come from nearby rural and tribal area. The study was conducted during June 2017 to November 2017 for a total period of 6 months. Sample size of 384 was calculated by taking expected probability of toilet utilization as 86.8% which was observed in study conducted by Yimam et al with 95% confidence interval, 2 as a design effect and 10% non-response rate.<sup>7</sup> The sample of 384 individuals were selected from the hospital randomly those who are willing to participate in study and age more than 18 years. They were interviewed to collect information by using predesigned and pretested questionnaire after taking written informed consent.

Questionnaire consist of demographic information of respondent (age, sex, marital status, residence, education and occupation), family details (family size, presence of under 5 year children and old age person in family) and information regarding regular utilization of toilet by informant.

Data was entered in Microsoft Excel software and analysed using Epi Info 7 version 7.2.2.2. The latrine utilization was expressed using descriptive data analysis. The odds ratio was utilized to determine the strength of association of latrine utilization with the independent variables.

## RESULTS

In the present study total 384 participants were interviewed, among which 3/4<sup>th</sup> were male (i.e. 75.8%) and only 1/4<sup>th</sup> were female (i.e. 24.2%). The mean age of the respondents was 36.2±12.8 with range from 18 to 72

years. Maximum study participants were from age group 30 to 49 years. Among the study participants majority were literate and only 11.5% were illiterate. Illiteracy is more among the head of family, 30.5% families were having illiterate person as family head. Among the study participants 72.4% were married and 55.4% were living in kuccha house. 62.8% participants were reside in rural area, 56.5% were living in a family having more than 5 members and only 27.6% families were having under 5 year child in their family (Table 1).

**Table 1: Socio-demographic characteristics of the study participants.**

Socio-demographic characteristics	Categories	Number (n)	Percentage (%)
<b>Gender of study participants</b>	Male	291	75.8
	Female	93	24.2
<b>Age of study participants (in years)</b>	<30	146	38.0
	30-49	171	44.5
	>50	67	17.5
<b>Education of study participants</b>	Illiterate	44	11.5
	Literate	340	88.5
<b>Residence</b>	Rural	241	62.8
	Urban	143	37.2
<b>Marital status</b>	Married	278	72.4
	Unmarried	106	27.6
<b>Education of head of family</b>	Illiterate	117	30.5
	Literate	267	69.5
<b>Family size</b>	≤5	167	43.5
	>5	217	56.5
<b>House type</b>	Kuccha	213	55.4
	Pucca	171	44.6
<b>Under 5 year children in family</b>	Present	106	27.6
	Absent	278	72.4

In this study, 83.9% were utilizing toilet for defecation while 16.1% were not utilize the toilet and go for open field defecation (Table 2).

**Table 2: Utilization of toilet by the study participants.**

Utilization of toilet	Number (n)	Percentage (%)
<b>Yes</b>	322	83.9
<b>No</b>	62	16.1
<b>Total</b>	384	100

Utilization of toilet was more among females (OR 3.45, 95% CI 1.43–8.30), among younger age group i.e. less than 30 years (OR 2.05, 95% CI 0.89–4.73), among literate participants (OR 2.17, 95% CI 1.05–4.50) and family headed by literate person (OR 2.53, 95% CI 1.45–4.41). Peoples living in urban area (OR 11.01, 95% CI

3.90–31.06), peoples who are unmarried (OR 2.20, 95% CI 1.07–4.52), people living in a family having more than 5 members (OR 1.08, 95% CI 0.62–1.87), living in a pucca house (OR 6.91, 95% CI 3.19–15.00) and family not having under 5 year children (OR 2.18, 95% CI 1.24–3.84) were having more toilet utilization.

Gender, literacy status of individual, literacy status of head of family, residential status, marital status of individual, type of house and not having under 5 year child in family were found to be significant factors associated with the utilization of toilet. Age of the individual and family size was not associated with the utilization of toilet.

**Table 3: Association of toilet utilization with socio-demographic factors of study participants.**

Socio-demographic characteristics	Categories	Utilization of toilet		Odds ratio (95% CI)
		Yes (%)	No (%)	
<b>Gender of study participants</b>	Male	235 (80.7)	56 (19.3)	1.0
	Female	87 (93.5)	6 (6.5)	3.45* (1.43 – 8.30)
<b>Age of study participants (in years)</b>	<30	132 (90.4)	14 (9.6)	2.05 (0.89 – 4.73)
	30-49	135 (78.9)	36 (21.1)	0.81 (0.39 – 1.68)
	>50	55 (82.0)	12 (18.0)	1.0
<b>Education of study participants</b>	Illiterate	32 (72.7)	12 (27.3)	1.0
	Literate	290 (85.2)	50 (14.8)	2.17* (1.05 – 4.50)
<b>Residence</b>	Rural	183 (75.9)	58 (24.1)	1.0
	Urban	139 (97.2)	4 (2.8)	11.01* (3.90 – 31.06)
<b>Marital status</b>	Married	226 (81.2)	52 (18.8)	1.0
	Unmarried	96 (90.5)	10 (9.5)	2.20* (1.07 – 4.52)
<b>Education of head of family</b>	Illiterate	87 (74.3)	30 (25.7)	1.0
	Literate	235 (88.0)	32 (12.0)	2.53* (1.45 – 4.41)
<b>Family size</b>	≤5	139 (83.2)	28 (16.8)	1.0
	>5	183 (84.3)	34 (15.7)	1.08 (0.62 – 1.87)
<b>House type</b>	Kuccha	159 (74.6)	54 (25.4)	1.0
	Pucca	163 (95.3)	8 (4.2)	6.91* (3.19 – 15.00)
<b>Under 5 year children in family</b>	Present	80 (75.4)	26 (24.6)	1.0
	Absent	242 (87.0)	36 (13.0)	2.18* (1.24 – 3.84)

\* Significant association

Females were 3.45 times more likely utilize toilet than male. Literate people were 2.17 times more likely utilized toilet than illiterate similar findings were found with families headed by literate person, as they were 2.53 times more likely utilized toilet than illiterate. Peoples living in urban area were 11.01 times more likely utilized toilet than rural. Unmarried people were 2.20 times more likely utilized toilet than married. People living in pucca house were 6.91 times more likely utilized toilet than people living in kaccha house (Table 3).

## DISCUSSION

Present study was conducted with the objectives to find the magnitude of toilet utilization and associated socio-demographic factors among peoples of Bilaspur, Chhattisgarh.

The finding in present study revealed that the rate of toilet utilization in Bilaspur district was 83.9%, similar finding of 94.3% toilet utilization in Budhathoki et al, 92.1% toilet utilization was found in study conducted by Kema et al in Mtwara district of Tanzania, while found higher than the findings of Gedefaw et al community study having 51.7% toilet utilization and Yimam et al having 61.2% toilet utilization among rural people.<sup>7-10</sup>

This higher rate in present study may be due to difference in residential status. The study findings also coincide with the finding in Swachhta status report 2016, published by national sample survey office (NSSO) regarding toilet utilization of 98.7% in urban area.<sup>11</sup>

Toilet were found to be utilized more by females as compare to male in present study which is similar with finding of study conducted by Biran et al and may be because of concerned privacy.<sup>12</sup> Toilet utilization is more among younger age group peoples which is also seen in study done by Biran et al as this might be because of younger peoples aware about proper utilization and ready to change behaviour which is quite difficult in old age person.<sup>12</sup> In present study literate participant and literate family head utilized toilet more significantly as compare to illiterate participant and similar findings were seen in study conducted by Yimam et al, Debesay et al and Koyra et al while this association of education with toilet utilization was not found in study conducted by Budhathoki et al.<sup>7,8,13,14</sup> Toilet utilization was significantly higher among the urban population as compare to rural population. This difference in toilet utilization may be because of higher socio-economic status and higher educational status of urban population. Unmarried people significantly more utilize toilet than married in present study but reverse findings were seen in

study done by Yimam et al where married utilize toilet more than unmarried people.<sup>7</sup> People living in pucca house utilize toilet significantly more than people of kuccha house, this may be because of socioeconomic difference of these peoples.

Families not having under 5 year child, utilize toilet significantly more than those family having under 5 children in their family, such type of similar finding were also find out in study conducted by Biran et al and study conducted by Yimam et al.<sup>7,12</sup>

Regarding the association of family size with toilet utilization, this family size was not found associated with toilet utilization in present study and similar finding is also seen in study conducted by Budhathoki et al and study conducted by Koyra et al.<sup>8,14</sup>

## CONCLUSION

Based on the finding of this hospital based study conducted at tertiary care hospital, overall toilet utilization rate was satisfactory and is 83.9%. This toilet utilization is poor among male, illiterate and old age person. Toilets were less commonly utilized by people who were living in rural area, living in kuccha house and having under 5 year children in their family. These are the significant factors for utilization of toilet. Age of person and family size were not significant associated factors for utilization of toilet.

## Recommendations

Based on the study findings, attention should be given to males, old age peoples, peoples living in rural area and in kuccha houses to improve the rate of toilet utilization which will finally help to make India free from open defecation and to reach ultimate goal of Swachh Bharat Mission.

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