International Journal of Advanced Community Medicine

E-ISSN: 2616-3594
P-ISSN: 2616-3586
IJACM 2020; 3(1): 75-80
Received: 04-11-2019
Accepted: 08-12-2019

Dr. Kritika Bansal
Senior Resident, Department of Community Medicine, FMHS, SGT University, Bhudera, Gurugram, Haryana, India

Corresponding Author:
Dr. Kritika Bansal
Senior Resident, Department of Community Medicine, FMHS, SGT University, Bhudera, Gurugram, Haryana, India

Assessment of knowledge and practices regarding drinking water and sanitation among residents of district Amritsar

Dr. Kritika Bansal

DOI: https://doi.org/10.33545/comed.2020.v3.i1b.117

Abstract
Introduction: Health risks are often exacerbated by poor sanitation. Sanitation is practically related to safe water and is a way of life. It is the quality of living that is expressed in the clean home, the clean farm, the clean business, the clean neighborhood and the clean community. Being a way of life it must come from within the people; it is nourished by knowledge and grows as an obligation and an ideal in human relation.
Aims and Objective: To study knowledge and practice of water and sanitation.
Material and Methods: It was cross sectional study conducted in field practice area of SGRD medical college. Residents who were available and willing to participate in study were included.
Statistical Analysis: Statistical analysis was done using SPSS 25 and valid conclusions were drawn Statistical analysis was done using SPSS 25 and valid conclusions were drawn.
Results: Most of the participants were females and belonged to Sikh religion. 99% of the participants had knowledge that drinking water should be stored in covered vessels. People had knowledge about washing hands before eating and after eating but very few of them are doing it in practice.
Conclusion: Most of the participants had right knowledge and practice about drinking water and sanitation. Knowledge and practice of drinking water and sanitation is increasing with educational status of the respondents.

Keywords: Water, sanitation, hygiene, knowledge, practice

Introduction
Adequate sanitation, together with good hygiene and safe water, are fundamental to good health and to social and economic development. That is why, in 2008, the Prime Minister of India quoted Mahatma Gandhi who said in 1923, "sanitation is more important than independence" [1]. Safe drinking water, sanitation and good hygiene are fundamental to health, survival, growth and development. Sanitation is practically related to safe water and is a way of life. It is the quality of living that is expressed in the clean home, the clean farm, the clean business, the clean neighborhood and the clean community [2]. Being a way of life it must come from within the people; it is nourished by knowledge and grows as an obligation and an ideal in human relations.

Health risks are often exacerbated by poor sanitation. Some 20% of the urban population still lacked access to improved sanitation in 2012 and 100 million city dwellers still practiced open defecation, although gains in access to improved sanitation have generally been much more rapid in cities than in rural areas over the past two decades [3].

27% of the global population (1.9 billion people) used private sanitation facilities connected to sewers from which wastewater was treated.13% of the global population (0.9 billion people) used toilets or latrines where excreta were disposed of in situ. 68% of the world's population (5.0 billion people) used at least a basic sanitation service. 2.3 billion People still do not have basic sanitation facilities such as toilets or latrines. Of these, 892 million still defecate in the open, for example in street gutters, behind bushes or into open bodies of water [4].

Absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks. Some 842,000 people are estimated to die each year from diarrhoea as a result of unsafe drinking water, sanitation and hand hygiene. Where water is not readily available, people may decide hand washing is not a priority, thereby

adding to the likelihood of diarrhoea and other diseases. Improved water supply and sanitation, and better management of water resources, can boost countries economic growth and can contribute greatly to poverty reduction [5].

Material and Methods

Cross sectional study conducted in the field practice area of the Department of Community Medicine, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar. Sample size was calculated as per last quarterly report (May- August2016)**;** total 7508 households were situated in rural and urban areas. As per CAWST (Center for Affordable Water and Sanitation Technology) training manual for large projects (>100 households) 5% of total sample should be taken [6]. It came out to be 375 which were rounded of to 400. Simple random sampling was done to select the number of households. Participants who were above 18 year, available and willing to participate were included in the study. Simple random sampling was done to select number of households. Socio-economic status was estimated according to their Standard of living (SLI) as per NFHS-2 [7]. Time period of study was 1 April 2017 to October 2018. The information was collected by holding the interview of households using the structured and pretested questionnaire. Informed consent was taken from the people who were willing to participate in the study and they were informed about the purpose of study and were also ensured about the confidentiality of their interview. Aim and objective was to assess the knowledge and practice regarding drinking water and sanitation.

Statistical analysis

Statistical analysis was done using SPSS 25 and valid conclusions were drawn.

Results

Table 1 shows sociodemographic characteristics of 400 households. It showed that 112 (28%) of participants belonged to age group 31-40 years followed by 97 (24.3%) belonged to 31- 40 years. Maximum number of participants i.e. 376 (94%) were females. Equal number of households was taken from rural and urban areas i.e. 200 from each. 91.5% of participants belonged to Sikh religion. In education wise distribution, 121 (30.3%) had studied up to high school, 82 (20.5%) had studied up to middle school. Majority of participants i.e. 233 (58.3%) belonged to general category. 255 (63.7%) of participants belonged to high socioeconomic status as per SLI (Standard of Living Index)

Table 1: Sociodemographic characteristics

Socio-demographic Characteristics		No.(n=400)	%
Age	<20	6	1.5
	21-30	69	17.2
	31-40	112	28
	41-50	97	24.3
	51-60	76	19
	61-70	40	10
Sex	Male	24	6
	Female	376	94
Area	Urban	200	50
	Rural	200	50
Religion	Sikh	366	91.5
	Hindu	33	8.2
	Christian	0	0
	Muslim	1	0.3
	Others	0	0
Education	Illiterate	73	18.3
	Can read only	11	2.8
	Can read & write	47	11.8
	Primary	34	8.5
	Middle	82	20.5
	High school	121	30.3
	Graduate	28	7
	Post graduate	4	1.0
Caste	ST	0	0
	SC	101	25.3
	OBC	66	16.4
	General	233	58.3
	Others	0	0
Socioecnomic status (SLI) Standard of Living Index	Low	29	7.2
	Medium	116	29
	High	255	63.7

Table 2: Background characteristics of households

Background characteristics		No.(n=400)	%
Type of House	Kutcha	22	5.5
	Pucca	326	81.5
	Semi Pucca	52	13
Households member	<10	393	98.2
	>10	7	1.8
Distance from shelter	<100 ft.	400	100
	>100 ft.	0	0
Availability of drinking water	Yes	400	100
	No	0	0
Presence of latrine	Yes	398	99.5
	No	2	0.5

Table 2 shows background characteristics of households. Among 400 households, 326 (81.5%) of participants had pucca house. 393 (98.2%) of households had family members <10. The distance of water source from the shelter was less than 100 ft. in all the 400 households. The water was available in all the seasons in all the 400 households. In 398 (99.5%) of households latrine was present.

Table 3: Knowledge among residents regarding drinking water and sanitation

Type of vessels used for storage water	No.(n=400)	%
Covered	399	99.75
Uncovered	0	0.00
Don't Know	1	0.25
Ever heard of water pollution	No.(n=400)	%
Yes	305	76.2
No	95	23.8
Source of information about water pollution	No.(n=305)	%
People	77	25.2
Newspaper	90	29.5
Television	89	29.2
Radio	13	4.3
Others	36	11.8
Polluted water causes disease	No.(n=400)	%
Yes	400	100
No	0	0.0
Heard of hardness of water	No.(n=400)	%
Yes	122	30.5
No	278	69.5
Type of drinking water consumed	No.(n=122)	%
Soft Water	41	33.6
Moderately Hard Water	20	16.4
Don't know	61	50
Hand washing before eating	No. (n=400)	%
Yes	398	99.5
No	2	0.5
Don't Know	0	0.0
Hand washing after eating	No.(n=400)	%
Yes	397	99.25
No	3	0.75
Don't Know	0	0.0
Cleaning of hands	No.(n=400)	%
By washing with sand	4	1
By washing with water	76	19
By washing with soap and water	320	80
Heard about Swachh Bharat Abhiyan	No.(n=400)	%
Yes	247	61.8%

Table 3 shows knowledge among households regarding drinking water and sanitation. Among 400 households, 399(99.75%) acknowledged that closed vessel should be used for storing drinking water. 305 (76.2%) of participants knew about the water pollution and among them source of information about water pollution was newspaper and television in most of the participants. All the participants acknowledge that polluted water causes diseases. 278 (69.5%) of participants knew about hardness of water and among them, 61 (50%) of the participants did not know about type of drinking water should be consumed. 398 (99.5%) participants had knowledge that hands should be washed before eating and 397 (99.25%) acknowledged that hand should be washed after eating as well. 320 (80%) of participants knew that hand should be washed with soap and water. 247 (61.8%) of participants knew about Swachh Bharat Abhiyan (SBA)

Table 4: Practice among households regarding drinking water and sanitation

Mouth of vessels used	No.(n=400)	%
Wide open	110	27.5
Narrow open	252	63.0
Both of above	38	9.5
Any other	0	0.0
Cleaning of vessels	No.(n=400)	%
Yes	214	53.5
No	12	3.0
Sometimes	174	43.5
Covering of drinking water	No.(n=400)	%
Covered	395	98.8
Uncovered	05	1.2
Waste water disposal	No.(n=400)	%
Open	380	95.0
Closed	20	5.0
Solid waste disposal	No.(n=400)	%
Dugged pits	7	1.8
Burn the waste	17	4.2
Other methods	376	94.0
Other methods of solid waste disposal	No.(n=376)	%
Open dumping	214	56.9
Community dustbins	86	22.9
Vehicle of municipal corporation	76	20.2
Washing Hands(Yes)	No.	%
Before eating(n=400)	263	65.8
After eating(n=400)	193	48.3
After defecating(n=400)	394	98.5
After disposal of waste(n=400)	273	68.2
Material used for hand washing	No. (n=400)	%
Water only	67	16.8
Water and soap	333	83.2
Others	0	0.0
Defecation practice	No. (n=400)	%
Open field	7	1.8
Near water source	0	0.0
Sanitary toilet	393	98.2

Table 4 shows practice among households regarding drinking water and sanitation. Among 400 households, 252 (63%) participants use narrow vessels to store drinking water. Majority 214 (53.5%) of participants cleaned vessels before storing water in it. Most of the participants i.e. 380 (95%) covered the vessels which is used for storing drinking water. 380 (95%) of households dispose waste water in open. Maximum number of households, 376 (94%) were disposing solid waste by other methods. Among 376 households, majority 214 (56.9%) were disposing in open. 263 (65.8%), 193 (48.3%), 394 (98.5%), 273 (68.2%) of participants were washing hands before eating, after eating, after defecating and after waste disposal respectively. 333 (83.2%) of participants were using water and soap for washing hands. Most of the participants, 393 (98.2%) were using sanitary latrine for defecation

Table 5: Distribution of households regarding practice of hand washing before eating in relation to educational status

Educational status	Practice of hand washing before eating(n=400)		Practice of hand washing after eating(n=400)	
	Yes	No	Yes	No
Illiterate	34 (46.6%) [12.9%]	39 (53.4%) [28.5%]	17 (23.3%) [8.8%]	56 (76.7%) [27.1%]
Can read only	10 (90.9%) [3.8%]	1 (9.1%) [0.7%]	7 (63.6%) [3.6%]	4 (36.4%) [1.9%]
Can read and write	28 (59.6%) [10.6%]	19 (40.4%) [13.9%]	10 (21.3%) [5.2%]	37 (78.7%) [17.9%]
Primary	14 (41.2%) [5.3%]	20 (58.8%) [14.6%]	6 (17.6%) [3.1%]	28 (82.4%) [13.5%]
Middle	58 (70.7%) [22.1%]	24 (29.3%) [17.5%]	57 (69.5%) [29.5%]	25 (30.5%) [12.1%]
High	87 (71.9%) [33.1%]	34 (28.1%) [24.8%]	72 (59.5%) [37.5%]	49 (40.5%) [23.7%]
Graduate	28 (100%) [10.6%]	0 (0.0%) [0.0%]	20 (71.4%) [10.4%]	8 (28.6%) [3.9%]
Postgraduate	4 (100%) [1.5%]	0 (0.0%) [0.0%]	4 (100%) [2.1%]	0 (0.0%) [0.0%]
Total	263 (65.8%) [100%]	137 (34.2%) [100%]	193 (48.3%) [100%]	207 (51.7%) [100%]
Chi square	$X^2 = 45.104$ df = 7 p = 0.000		$X^2 = 77.007$ df = 7 p = 0.000	

Table 5 shows relationship of educational status with practice regarding hand washing before eating and after eating. Among illiterate majority 39 (53.4%) and 56 (76.7%) were not washing hands before eating and after eating respectively. Among graduates and postgraduates all were washing hands before eating. Households having higher educational status had higher knowledge regarding practice of washing hands before and after eating. Educational status wise difference in practice of hand washing before and after eating was highly significant statistically.

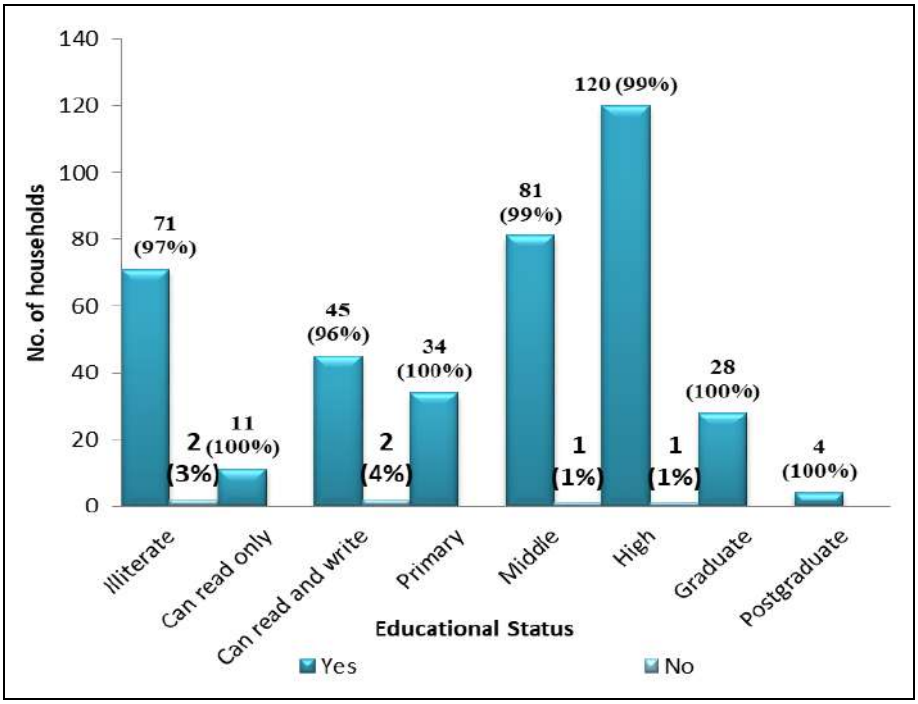

Fig 1: Bar diagram showing distribution of households regarding practice of hand washing after defecation in relation to their educational status

Figure 1 show of households regarding practice of hand washing after defecation in relation to their educational status. It shows that with increase in educational status, there is more practice of washing hands among households.

Discussion

Similar study conducted among 480 households in a rural block of Haryana by Bharti *et al*. showed the similar results i.e. most of participants were adult females (96.4%) [8].

As per NFHS-4, a large majority of households in Punjab have household heads who were Sikhs (60%) [7]. According to NFHS-4, more than two-fifths (43%) of Punjab's household heads do not belong to scheduled castes, scheduled tribes, or other backward classes, 38% belongs to schedule caste. This difference in caste wise distribution of households may be due to regional variation. More than two third of population of Punjab lives in pucca house as per NFHS 4 [9].

Similarly a study conducted in Udupi district by Reshma *et al*. showed that 297 (99%) households also had members less than 10 and Approx 95% of houses were having distance of water source from shelter less than 100 ft. and availability of water in all seasons respectively [10].

In our study 76% of households knew about water pollution and majority of them came to know from newspaper and television. Similar study conducted in Vhembe district, South Africa by Sibiya JE *et al*. showed that most of the respondents had knowledge about waterborne diseases which they got it from school, television and radio [11].

A similar study was conducted by Shah RB showed that majority of people (76.92%) had knowledge of usage of soap and water for hand washing before meal [12]. Our study showed practice of method of waste water disposal, 380 (95%) dispose water in open, 20 (0.5%) dispose water by kitchen garden. This is because in infield practice area open drains were present and participants had no knowledge regarding reuse of waste water. Similar study conducted in Ghaziabad district by Swain P showed that 64.15% had open drainage [13]. Similar study conducted in Saptari district and Tamil Nadu showed that 98.3% respondents wash their hands after defecation, 53.4% were washing hands before eating [14, 15].

Our study had shown distribution of households regarding practice of hand washing before eating and after eating respectively in relation to their educational status. In our study the results showed that households who could read only had higher practice of hand washing before eating and after eating than who could read and write. This might be due to the small sample size or they might be having higher knowledge. Results were found statistically significant. According to Global Hand washing partnership (international stakeholder) mentioned that hand washing with soap and educational achievement are closely linked [16].

Conclusion

Most of the participants had right knowledge and practice about drinking water and sanitation. Most of the participants had knowledge about hygiene and sanitation but some of them are doing it in actual practice. Awareness should be created about hardness of water so that people can consume moderately hard water. People should be educated about proper disposal of waste water and garbage so that to make it sanitary and useful.

Reference

1. Singh M. Opening address to the third South Asian conference on sanitation, New Delhi. [Internet] 2008 November. [Cited 2018 Oct 15]. Available from: http://pib.nic.in/release/release.asp?relid=44884.
2. Park K. Environment and health. In: Park's textbook of preventive and social medicine. 24th ed. Jabalpur, India: M/s Banarsidas Bhanot, 2017, 743.
3. World Health Organization. Unsafe drinking-water, sanitation and waste management. Health and Sustainable development, 2018, 1.

4. WHO/UNICEF JMP. Sanitation. Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines, 2017, 5.
5. World Health Organization. Drinking water. Key Facts, 2018, 7.
6. Center for Affordable Water and Sanitation Technology. A CAWST training manual. Introduction to drinking water quality testing, 2009, 26.
7. National family health survey-2. Background characteristics of households and villages, 1988, 40.
8. Bharti Malik M, Kumar V, Verma R, Chawla S, Sachdeva S. Knowledge attitude practices regarding water handling and quality assessment in rural block of Haryana. International Journal of Basic and Applied Medical Sciences. 2013; 3(2):3-4.
9. International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey (NFHS-4), India, 2015-16: Punjab. Mumbai: IIPS.
10. Reshma Pai, Manjula MS. A descriptive study to assess the knowledge and practice regarding water, sanitation and hygiene among women in selected villages of Udupi District. NUJHS. 2016; 6(1):1.
11. Sibiya JE, Gumbo JR. Knowledge, attitude and practices (KAP) survey on water, sanitation and hygiene in selected schools in Vhembe District, Limpopo, South Africa. Int. J of Env Res Public Health. 2013; 10(6):2282-95.
12. Shah RB, Baral D, Ghimire A, Pokahrel P. Study on knowledge and practice of water and sanitation application in Chandragadhi VDC of Jhapa District. Health Renaissance. 2013; 11(3):241-245.
13. Swain P, Pathela S. Status of sanitation and hygiene practices in the context of Swachhh Bharat Abhiyan in two districts of India. IJCMPH. 2016; 3(11):3140-5.
14. Mittal A, Dande Rajesekar V, Thirumal P, Murali S. A cross-sectional study to determine knowledge, attitude and practice of sanitation in rural areas of Tamil Nadu, India. IJCMPH. 2016; 3(7):1911-4.
15. Sah RK, Sah PK, Sah JK, Chiluwal S, Shah SK. Assessment of the knowledge, attitude and practice regarding water, sanitation and hygiene among mothers of under-five children in rural households of Saptari district, Nepal. American Journal of Public Health Research. 2017; 5(5):165-7.
16. WHO/UNICEF JMP. Basic services: Towards universal access. Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines, 2017, 11.