

A Comparative Study on Water, Sanitation and Hygienic Practices of Elderly People in a Selected Old Home and Community, Gazipur, Bangladesh

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Abstract

Background: The number of elderly people has been increasing worldwide and Bangladesh is not immune to this demographic reality. Adequate safe water and basic sanitation are precursor for personal hygiene and good health among elderly people. This study was carried out to determine the water, sanitation and hygienic practices of elderly people from a selected old home and nearest community, Gazipur, Bangladesh.

Methods: The study was descriptive type of cross sectional study. Data were collected from 133 elderly people from a selected old home (n=68) and nearest community (n=65) using purposive sampling technique, conducted from November 2017 to April, 2018. A closed ended questionnaire was used to collect data. Data were analyzed using Statistical Package for Social Science (SPSS) version 20.0.

Results: Mean age for old home and community elderly was 70.97(±6.67) and 67.86(±5.88) respectively. Sanitation and Hygiene knowledge found that old home elderly had better knowledge. Age and education were associated with it. There was significant difference regarding water sources($X^2=52.83$, $p<.001$), water treatment($X^2=4.31$, $p=.038$), washing hand after defecation ($X^2=38.69$, $p=.000$), using shoes before going to toilet ($X^2=6.385$, $p=.041$), bath ($X^2=7.78$, $p=.005$), brush($X^2=4.46$, $p=.035$) washing cloth ($X^2=3.91$, $p=.048$) between old home and community elderly people.

Conclusion: Water, sanitation and hygiene practices for old home elderly was better than community elderly. Easily accessible and uninterrupted safe water supply, in house or attached sanitation facility, filtration by available, scientifically sound method need to be provided.

Key words: Elderly people, Water, Sanitation, Hygiene, Old home

I. BACKGROUND

Access to safe water, basic sanitation and good hygiene are pre-condition for elderly people to achieve good health, well-being and even benefit from economic development[1,2]. Elderly people are very respectable and honorable. The number of elderly people are increasing and Bangladesh is also not immune to this demographic reality[3]. People are living longer; average life expectancy at birth in Bangladesh has increased to over 60 years[4]. In Bangladesh, persons aged 60 or above are considered to be elderly[5]. According to NIPORT, 1.13 million are above 60 years old,

which is 7.1% of total population in Bangladesh. By 2025 along with other four Asian countries, Bangladesh will account about half of the world's elderly population[6]. The growth of aged people will continue and that has laid down several issues related to their status and roles, care and living, health, social support and well-being[7].

Ageing from 60 years and onwards is characterized by critical changes such as the death of a partner or a child, increasing health problems, the increasing need for care and possibly the move into an old people's home or a nursing home[8]. The WHO has predicted that ageing populations will present challenges to health care. The health of the elderly will be an important issue defining the health status of a population[9]. Elderly people tend to have reduced incomes, and in many countries may not have access to old age pension which can lead to affordability problems in accessing many services including water and sanitation[10].

Access to sanitation infrastructure, including toilets, showers and hand washing facilities, has long been identified as a precursor for personal hygiene and good health [11]. Difficulty in access to safe drinking water and good sanitation facilities and poor hygienic practices associated with some diseases like, skin diseases, ARIs, and diarrheal diseases, the leading diseases in Bangladesh[12]. Without adequate quantities of safe water for personal hygiene, skin and eye diseases spread easily among elderly people. Unless proper sanitation facilities are in use complemented with the right types of hygiene behaviors, elderly people will be vulnerable to recurrent incidences of water and sanitation related diseases[13]. Hygiene behavior are effected by demographic variables[14]. The global burden of disease and mortality rates could be reduced by about 9.1% and 6.3% respectively, if rapid success is attained in facilitating access to water, sanitation, and hygiene facilities[15]. As senior citizen are golden people of any country, proper health care infrastructure need to be provided them. They have knowledge, wisdom, experience that will help us in designing and developing our country.

Previous study on elderly related in Bangladesh mostly focused on psychological and physical health behavior but not on water, sanitation and hygiene. Consequently, Present study assessed information on water, sanitation and hygienic

practices of elderly people living in a selected old home and nearby community to fill the gap. Also socio-demographic effect on hygiene practices, knowledge regarding sanitation and hygiene were also concern.

II. METHODS

Participants and Procedure: This was a descriptive cross-sectional study. Study area was a selected old home and nearest community, Gazipur, Bangladesh. The Study population was ≥60 year old elderly people, conducted from November 2017 to April, 2018. A total of 133 elderly people studied using purposive sampling technique.

Statistical Procedures: Data were analyzed using Statistical Package for Social Science (SPSS) version 20.0. Final analyses included descriptive statistics (e.g., frequencies, percentages, mean, standard deviation, chi-square test etc.).

III. MEASURES

Socio-demographic measures: Socio-demographic information was collected concerning age, gender, marital status (currently married, divorced, widow and widower), educational status (No formal education, Primary level of education, SSC etc.). Age was asked and confirmed by National Identity Card (NID).

Water related measures: Water related information was collected regarding water sources, treatment, water procurement time, knowledge of water safety etc.

Sanitation related measures: Sanitation information were collected by toilet facility (sanitary, pit latrine with slab), location of toilet (attached to dwelling, inside the yard, outside the yard), soap availability, accessibility and waste disposal.

Hygiene related measures: Hygiene information were collected by bath, brush, washing cloth, using shoes before going to toilet, hand washing with soap after using toilet questions.

IV. RESULTS

Socio-demographic characteristics

Table-1: Socio-demographic characteristics of the respondents

Variables	Category	Old home		Nearest Community	
		Frequency	Percentage	Frequency	Percentage
Sex	Male	33	48.5	33	50.8
	Female	35	51.5	32	49.2
Religion	Islam	59	86.8	63	96.9
	Hindu	9	13.2	2	3.1
Age	60-69	27	39.7	40	61.5
	70-79	33	48.5	20	30.8
	80-89	7	10.3	5	7.7
	≥90	1	1.5	0	0

Marital status	Never married	4	5.9	0	0
	Currently Married	22	32.4	41	63.1
	Separated	2	2.9	0	0
	Divorced	7	10.3	0	0
	Widow/Widower	33	48.5	24	36.9
Educational status	Illiterate	32	47.1	43	66.2
	Primary	22	32.4	14	21.5
	Secondary	8	11.8	5	7.7
	Higher secondary	1	1.5	2	3.1
	Above higher secondary	5	7.4	1	1.5

Among 133 respondents, 48.5% respondents in old home belonged to 70-79 years age group. In community, 61.5% respondents belonged to 60-69 age groups. Mean age for old home and community elderly was 70.97 (±6.67) and 67.86(±5.88) respectively. Among 68 respondents in old home, 33 (48.5 %) were widow/widower and 22(32.4%) were currently married. Whereas in community, 24(36.9%) were widow/widower and 41(63.1%) were currently married. In old home, 32(47.1%) were illiterate, 22(32.4%) had primary level of education. In community, 43(66.2%) were illiterate and 14(21.5%) had primary level of education.

Sanitation and Hygiene knowledge comparison

Table-2: Distribution of the respondent’s sanitation and hygiene knowledge comparison

Category	Old home			Nearest Community		
	Male	Female	Frequency (percentage)	Male	Female	Frequency (percentage)
Sanitation and hygiene knowledge						
Poor	9	14	23(33.8%)	16	22	38(58.5%)
Good	14	13	27(39.7%)	10	6	16(24.6%)
Excellent	10	8	18(26.5%)	7	4	11(16.9%)
Total	33	35	68(100%)	33	32	65(100%)

There were 10 multiple choice questions for each section. A score of “1” (one) was given for correct response and “0” (zero) score was given for wrong or don’t know response. Knowledge score was arbitrarily classified as excellent knowledge (>7/10), good (4-7/10) and poor knowledge (<4/10) [16–18]. Table shows that, 26.5% elderly people had excellent knowledge in old home, whereas it was 16.9% in community regarding sanitation and hygiene knowledge. Also 33.8% in old home and 58.5% in community elderly people had poor knowledge.

Socio-demography and knowledge

Table-3: Distribution of the respondents by socio-demography and knowledge

Variables	Knowledge			Total	X ² (df)	P- value
	Poor	Good	Excellent			
Sex						
Male	25(37.9%)	24(36.4%)	17(25.8%)	66(49.6%)	3.42(2)	.181
Female	36(53.7%)	19(28.4%)	12(17.9%)	67(50.4%)		
Age						
60-69	26(38.8%)	23(34.3%)	18(26.9%)	67(50.4%)	6.95(4)	.012
70-79	25(47.2%)	18(34%)	10(18.9)	53(39.4%)		
≥80	10(76.9%)	2(15.4%)	1(7.7%)	13(9.8%)		
Marital status						
Currently married	25(39.7%)	21(33.3%)	17(27%)	63(47.4%)	2.51(2)	.068
Others(never married, divorced, separated, widow/widower)	36(51.4%)	22(31.4%)	12(17.2%)	70(52.6%)		
Educational status						
Illiterate	59(78.7%)	16(21.3%)	0(0%)	75(56.4%)	148.75	<.05
Primary	2(5.6%)	27(75%)	7(19.4%)	36(27.1%)		
Secondary	0(0%)	0(0%)	13(100%)	13(9.8%)		
Higher secondary	0(0%)	0(0%)	3(100%)	3(2.3%)		
Above higher secondary	0(0%)	0(0%)	6(100%)	6(4.5%)		

Table shows that, age($X^2=6.95$, $P=.012$) and education($X^2=148.75$, $P<.05$) were significantly associated with sanitation and hygiene knowledge. *Water, sanitation and hygiene findings*

Table-4: Distribution of the respondents by water, sanitation and hygiene practice

Variables	Category	Old home		Nearest Community		X ² (df)	P- value
		Frequency	Percentage	Frequency	Percentage		
Water sources	Supply water	68	100	27	41.5	52.83(1)	<.05
	Tube well	0	0	38	58.5		
Water treatment	Yes(filtration)	0	0	4	6.2	4.31(1)	.038
	No	68	100	61	93.8		
Water collection time from sources	Within minute	68	100	12	18.5		
	2-3minutes	0	0	46	70.7		
	>3 minutes	0	0	7	10.8		
Perception of water safety	Safe	62	91.2	55	84.6	1.35(1)	.245
	Not safe	6	8.8	10	15.6		
Kids of defecation practice	Sanitary latrine	68	100	54	83.1	10.41(1)	.001
	Insanitary latrine	0	0	11	16.9		
Location of toilet	Attached to dwelling	68	100	12	18.5		
	Elsewhere inside yard	0	0	43	66.2		
	Outside yard	0	0	10	15.4		
Number of people using per toilet	1-5	24	35.3	50	76.9		
	6 -10	44	64.7	15	23.1		

Waste disposal(solid waste)	Dustbin	68	100	28	43.1		
	Open place	0	0	15	23.1		
	Community drainage	0	0	22	33.8		
Presence of soap in hand washing facility	Yes	55	80.9	29	44.6	18.79(1)	<.05
	No	13	19.1	36	55.4		
Bathing practice	Regular	54	79.4	37	56.9	7.78(1)	.005
	Irregular	14	20.6	28	43.1		
Brushing of teeth	Regular	55	80.9	42	64.6	4.46(1)	.035
	Irregular	13	19.1	23	35.4		
Washing cloth	Regular	44	64.7	31	47.7	3.91(1)	.048
	Irregular	24	35.3	34	52.3		
Using shoes before going to toilet	Yes	60	88.2	46	70.8	6.38(2)	.041
	No	4	5.9	8	12.3		
	Sometimes	4	5.9	11	16.9		
Hand washing after defecation	Only water	7	10.3	35	53.8	38.69(2)	.000
	Soap	61	89.7	25	38.5		
	Ash	0	0	5	7.7		

Old home water source was supplied water. In community, more than half of the respondent's water sources were tube well. Old home respondents didn't use any water treatment method. In community, 6.2% respondents treated water by filtration. Old home had improved inside sanitary toilet facility. But in community, 16.9% respondents had pit latrine with slab. Also 43(66.2%) respondents' toilet were elsewhere inside the yard and 10(15.4%) respondents' toilet were attached to dwelling. Old home elderly disposed their solid waste in dustbin. In community, 15(23.1%) respondents in open place and 22(33.8%) respondents in community drainage. From observation, it was found that, in old home 50(73.5%) respondents had soap in hand washing facility and 13(19.2%) had nothing. Whereas in community, 29(44.6%) respondent's had soap. 54(79.4%) respondents in old home used to bath regular. In community, it was 37(56.9%). In old home and community, 55(80.9%) and 42(64.6%) respondents used to brush regularly respectively. 44(64.7%) respondents in old home used to wash their cloth regularly and is was 31(47.7%) for community. 60(88.2%) respondents in old home used shoes before going to toilet and it was 46(70.8%) for community. 61(89.7%) respondents in old home used soap with water and 7(10.3%) used only water to wash their hands after defecation. On the contrary, in community, 25(38.5%) used soap with water, 35(53.8%) used only water.

V. DISCUSSION

Although, there are a lot of WASH related study in Bangladesh, elderly focused study are rare. Elderly people are increasing rapidly so their water facility, sanitation condition and hygiene status becoming a growing concern. Affordable and safe water and basic sanitation facilities can prevent the occurrence of various infectious diseases and help in curbing

the associated morbidity and mortality[19,20].The study provides cross sectional data on water sanitation and hygienic practices and associated factors among selected old home and community elderly people.

The present study found elderly people in old home has higher mean age than community. This is similar with other studies done previously[21,22].One probable reason for this elderly people in community get better facility than family setting. Also their educational status are more than community[23]. Elderly people in old home get opportunity to share their knowledge among other unlike family where elderly people remain alone without care. Institutional setting in old home, they had to maintain health and hygiene practices. As a result, they face few health related problems. So their life expectancy increases.

Study revealed that old home elderly had better knowledge compare to community elderly people regarding sanitation and hygiene. Socio-demography was associated with it. Age distribution indicates that, it has effect on bath, brush and washing cloth practices in both groups' elderly people. Prior studies also relevant with it indicating increase in age reduces practice regarding hygiene[24]. Older ages associated with health problems also related with poor hygiene practices[25,26].Common colloquial that increases in ages reduces people ability in maintain good health and personal hygiene regarding bath, oral and dress hygiene. Marital status also had an effect on hygiene practices supported previous studies[14].It is believed and true among people that elderly people who are divorced, separated, widow or widower feel themselves always in mental stress, depression and psychological problems. This may reduce their ability in maintaining good personal hygiene. Moreover men or women

who are widow/widower, separated, divorced aren't treated well in our society. Study also found education had effect on hygiene practices. Many studies found it that literate people practices good hygiene compared to illiterate[27].

The source of water in old home was supplied water compare to community. According to Ricard Gine, 94% of urban people have improved sources of drinking water[28]. This may due to old home is institution; they may raise several funds from donation or govt. subsidies. Supply water already reached all over the country in urban setting also somewhere in rural area, Bangladesh. A small number of respondents did so by filtration. A study done by WE Consult Lda for UNICEF Mozambique in 18 district of Mozambique in 2009, had found that only 19% of the respondents have practices some form of water treatment practices[29]. Old home and community elderly people thought their water was safe and no need to treat it before using.

Study revealed that, all the elderly people in old home and about half of the community elderly people disposed their solid waste in dustbin which was similar with another study that revealed that 98% respondents disposed solid waste in community dustbin[30]. Old home was in urban area and the urban management team manages waste by taking everyday waste from household. Old home elderly people used to bath, brush and wash their cloth more frequently than community elderly people. This is consistent with previous other study[31]. This was due elderly people need easily accessible bathroom facility so that they can easily access water mostly if attached to room. As old home provide attached and sanitary bathroom facility, elder people in old home had good hygiene practices. Study revealed more elderly people in old home used soap after using toilet. The percentage is very for both group compare to a study conducted by Global Public Privet Partnership for hand washing(PPPHW) which included several sub-Saharan African countries(i.e.; Kenya, Senegal, Tanzania and Uganda) reported that 17% of participants wash their hands after using toilet, while 45% used only water[32]. This was due in availability of soap in toilet. Old home provide soap all elderly people and elderly in old home were more awareness regarding hygiene. Knowledge for sanitation and hygiene among old home elderly was more so their percentage was also more.

Chi-square test also indicates that there is significant difference between old home and community regarding sanitation and hygiene knowledge and practices of elderly people (washing hand after defecation, using shoes before going to toilet, bath regularly, brush regularly and washing cloth regularly). It is true that, old home provide better facility regarding sanitation, hygiene and water accessibility, so to better practices regarding WASH. Elderly people in community don't get such facilities. They are treated as burden for family and they don't get proper love and affection also. As a result, they have very limited access in practicing good WASH.

VI. LIMITATIONS

Due to the cross-sectional nature of the study, no conclusions can be drawn regarding causality. The study is also limited by the relatively small sample size and study location (Gazipur), so the generalization of the whole country (and other countries) is highly limited. Elder people are intellectually impairment, so there may information bias. Future studies need to overcome such limitations by employing longitudinal designs with larger and more representative samples.

VII. CONCLUSION

From this study, it can be concluded that, water, sanitation and hygienic practices was better in old home than community elderly people. Old home elderly people had better knowledge regarding sanitation and hygiene practices. Age and education were associated with it. This findings suggest that for the betterment of the elderly people, old age friendly, easily accessible and safe water facility, proper hygiene education and logistics, and affordable and resilient sanitation should be provided.

DECLARATIONS

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Self

Conflict of interest

No conflict of interest.

Ethical issues

The study was confirmed by department of Public Health and Informatics, Jahangirnagar University, Bangladesh. Inform consent was taken from the participants prior to data collection. Anonymity and confidentiality of data were ensured and all participants were provided with the information about the nature and purpose of the study, procedures, and the right to withdraw their data any time.

Author's contributions

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