

Original article

Knowledge and Practice towards hygiene and sanitation amongst residents of Dhankuta Municipality

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Abstract

Background: Poor hygiene practices and inadequate sanitary conditions play major roles in the increased burden of communicable diseases within developing countries. **Objectives:** To know knowledge and practice regarding hygiene and sanitation of households and to find out the hygienic practices with selected variables. **Methods:** This cross-sectional study was conducted from 30th April to 13th May 2012 in Dhankuta Municipality where 300 households were taken as subjects. Among 9 wards, 3 wards were randomly selected and equal number of households (100) from each ward was selected on the basis of simple random sampling. Semi-structured questionnaire was used and face to face interview was conducted. Chi-square test was applied to find out the hygienic practices with selected variables. Results: Most of respondents believed that hand washing reduces diseases (71.3%). They knew that diarrhoea is spread by dirty environment (55.7%) and drinking unsafe water (46.3%) and unhygienic food (43.3%). Majority of respondents (95.3%) washing hands with soap and water after defecation. Almost (30%) respondents used burning as a management of solid waste. The ladies were found to have better hygienic practices (92%) than gents (61.6%) and Brahmin/Chhetri (70%) were more hygienic than other ethnic groups. **Conclusion:** The knowledge and practice on hygiene and sanitation among the households of Dhankuta municipality was found to be fair.

Keywords: knowledge, practice, personal hygiene, sanitation

Introduction

Hygiene Practices and sanitation are amongst the most challenging development sectors for one to work. This is partly because effective sanitation requires development of public policy in an arena that is intensely private and where results are only achieved when the household makes appropriate choices.¹

It is estimated by World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) that 1.1 billion people lack access to improved water supplies and 2.6 billion people lack adequate sanitation.²

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One of the quotes stated by UNICEF highlighted that "Deaths from diarrhea in 2004 were six times greater than the average annual deaths in armed conflicts." Recognized by UNICEF, WHO and many other organizations, as being one of the major causes of deaths of under 5 years children, diarrhoea is a burden in Nepalese communities as well.³

The world is still on track for reaching the Millennium Development Goal drinking water target, but the trend appears to be deteriorating. On current trends, the world will miss the sanitation target by more than half a billion people.⁴ This study is designed to assess the knowledge and practices regarding hygiene and sanitation of households and to find out the hygienic practices with selected variables in a hilly district of eastern Nepal.

Methods

This cross-sectional study was conducted from 30th April to 13th May 2012 in Dhankuta Municipality. The data was collected from 300 households of mixed ages, above 18 years. Among 9 wards of the municipality, 3 wards were randomly selected. The list of households of three selected wards was prepared and equal number of households (100) from each ward was selected on the basis of simple random sampling. Individual respondent was taken as the sample unit. The tool for data collection was a pretested semi-structured questionnaire where face to face interview was conducted.

An informed and understood verbal consent was taken from the participants of the study. Those individuals who were available after three visits and willing to give verbal consents were included in the study.

The collected data was entered in MS Excel 2000. The quantitative data obtained was analyzed using statistical package for the social sciences (SPSS) software package. Chi-square test was used to measure the hygienic practices associated with selected variables. The probability of occurrence by chance is significant if $P < 0.05$ with 95% Confidence Interval.

Results

Table 1: Study population by different knowledge assessment (N=300)

Characteristics	Frequency	Percent
Knowledge of hand washing steps		
Yes	107	35.7
No	193	64.3
Reasons for not construction of latrine		
No money	19	86.4
Others (not necessary, no place)	3	13.6
*Importance of latrine		
To keep the village clean	246	82.0
Free from odour	126	42.0
Safe from diseases	157	52.3

*Reasons for washing hands	199	66.3
To be clean	214	71.3
To reduce diseases	117	39.0
To be healthy	32	10.7
To reduce foul odour		
*Methods of spread of diarrhoea	167	55.7
Dirty environment	94	31.3
Pathogens from stool	130	43.3
Use of unhygienic food	139	46.3
Drinking of unsafe water	23	7.7
Don't know		

*Percentages are based on multiple responses

Majority of respondents expressed that hand washing was needed to reduce the diseases and reported diarrhoea is spread due to dirty environment.

Table 2: Study population by personal hygiene and sanitation practices (N=300)

Characteristics	Frequency	Percent
Source of drinking water		
Tap	178	59.3
River/stream	61	20.3
Tube well	5	1.7
Others (spring, well, pond)	56	18.7
Water treatment before drinking		
Yes	171	57.0
No	129	43.0
Washing hands before meal		
Soap water	227	75.7
Water only	73	24.3
Latrine facilities		
Yes	278	92.7
No	22	7.3
Washing hands after defecation		
Soap water	286	95.3
Water only	14	4.7
Management of liquid waste		
Use in kitchen garden	139	46.3
Feed to cattle	45	15.0
Surrounding home	107	35.7
Others (pond, soaked pit system)	9	3.0
Management of solid waste		
Burn	90	30.0
Bury	87	29.0
Prepare compost	75	25.0
Others (landfills, open land, dumping)	48	16.0
Total	300	100.0

Table 2 shows personal hygiene and sanitation practices in which the washing hands before meal and washing hands after defecation with soap was higher than Water only. The

management of solid waste by burning and burying was found to be primary method of solid waste management.

Table 3: Association between selected variables with personal hygiene (N=300)

Characteristics	Hygiene practices		Total	P-value
	Yes	No		
Gender				
Male	77 (61.6)	48 (38.4)	125	<0.001
Female	161 (92.0)	14 (8.0)	175	
Religion				
Hindu	207 (75.0)	69 (25.0)	276	0.805
Others (Buddhist, Christian, Muslim)	18 (75.0)	6 (25.0)	24	
Ethnicity				
Brahmin/Chhetri	105 (70%)	45 (30%)	150	0.001
Janajati/Kerati	56 (42.1%)	77(57.9%)	133	
Others (Dalit, Terai caste)	12 (70.6)	5 (29.4)	17	
Education of households				
Illiterate	91 (69.0)	41 (31.0)	132	0.010
Below SLC	112 (80.6)	27 (19.4)	139	
Above SLC	25 (86.2)	4 (13.8)	29	
Occupation of households				
Housewife	21 (75.0)	7 (25.0)	28	0.05
Farmer	134 (75.7)	43 (24.3)	177	
Service	9 (64.3)	5 (35.7)	14	
Student	52 (77.6)	15 (22.4)	67	
Labour	7 (77.8)	2 (22.2)	9	
Other (Business, Unemployed, Retired)	5 (100.0)	0 (0.0)	5	
Total	228 (76.0)	72 (24.0)	300	

Unhygienic practices included not taking bath, cleaning body parts or changing their clothes, and caring their hair for at least 14 days.

Table 3 shows the relationship between associated variables and hygiene practices of respondents in which female were seen to have better hygienic practices than males and Brahmin/Chhetri were more hygienic than other ethnic groups.

Discussion

Everybody knows that water is a vital community and has no substitute. According to Global Corruption Report (GCR) 2008, there are nearly 1.2 billion people in the world without access to water and more than 2.6 billion without adequate sanitation. In developing countries, about 80

per cent of health problems can be linked back to inadequate water and sanitation, claiming the lives of nearly 1.8 million children every year and leading to the loss of an estimated 443 million school days for the children who suffer from water related ailments.⁴

In this study people reasoned washing of hands to reduce diseases (71.3%), to be clean (66.3%), to be healthy (39%) and to reduce foul odour (10.7%). A study conducted by Vivas A et al in Ethiopia showed the importance of and the preference for hand washing before eating were 99.7% and 98.8%, respectively.⁵ Other studies from the Philippines and Colombia indicated that 75.9% and 46.9% of respondents reported washing hands before meals. Considerably higher frequency of hand washing before

meals in those studies may be due, in part, to the Ethiopian cultural tradition and ceremonial practice of washing hands before meals⁶ or the desire for clean, fresh hands before eating⁷.

In our study 46.3% respondents believed unsafe water to be responsible for spread of diarrhoea WHO has attributed 88% of diarrhoeal disease to unsafe water supply.⁸ It has been estimated that diarrheal morbidity can be reduced by an average of 6-20 percent with improvements in water supply.⁹

This study showed 59.3% of the respondents use tap water as the source of drinking water followed by river/stream (20.3%), tube well (1.7%), and others including spring, pond and well water (18.7%). According to the report of Central Bureau of Statistics, 53.4% of the total population has access to piped water, 1.5% relies on river/ stream and 45.1% rely on other sources. In Eastern development region of Nepal, 35.6% has access to piped water and 1% use water from river/stream which is contrasting to the findings of our study.¹⁰

Almost 7.3% households had no latrine in their house in the present study which is a better figure if we compare but, 32% and 40% of the respondents having no latrine facilities in Ethiopia.^{11,12}

Most of the respondents (75.7%) wash hands with soap and water before meal. A study conducted by Vivas AP et al in Angol ela, Ethiopia showed only 36.2% of respondents washed their hands using soap and water which is lower than our study.⁵ Similarly the studies in Philippines and Turkey showed an average of 37.7% and 42.4% of respondents, respectively, washing their hands with soap and water which are lower than our study.^{13,14}

Most of the respondents (95.3%) wash hands with soap and water after defecation. The study conducted by Vivas AP et al showed 14.8% respondents wash their hands with soap and

water after defecation which is lower than our study.⁵ In contrast, studies conducted in Colombia and India reported that 82.5% and 86.4% of respondents, respectively, wash their hands with soap and water after using the toilet which are also lower than our study.^{15,16}

This study showed 61.6% male and 92% female have proper practice of hygiene but a study conducted by Lopez-Quintero C et al in Bogota, Colombia showed 52% of respondents were classified as having proper practice of hygiene. Overall our findings are consistent with other studies that have documented practices of hygiene among households.¹⁵ Another reason that can influence hygiene practice among households is the low level of literacy. In our study the households's literacy rate was higher (86.2%) than a study conducted by Nematian J et al in Tehran (39.7%).¹⁷ Illiterate or uneducated households may be less knowledgeable about teaching their family member about proper hygiene practices, subsequently leading to increased rates of infection and disease amongst their family member particularly in children.¹⁷

Conclusion

The knowledge and practice on hygiene and sanitation among the households of Dhankuta municipality was found to be fair. Most of the people believed that washing of hands reduces diseases and diarrhoea is spread by dirty environment. Majority of people used soap and water for hand washing before meal and after defecation. The female in gender, Brahmin/ Chhetri in ethnic groups and above SLC in education of households were found to have better hygienic practices.

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References

1. Sanitation and Hygiene Promotion: Programming guidance. Water Supply and Sanitation Collaborative Council and World Health organization, 2005.
2. Moe CL, Rheingans RD. Global challenges in water, sanitation and health. *J Water Health* 2006; 4: 41-57.
3. Human Development Report, Beyond Scarcity Power poverty and the global water crisis, UNDP, 2006.
4. World Health Organization, Meeting the MDG drinking water and sanitation target the urban and rural Challenge of the decade, Report by WHO and UNICEF, 2006.
5. Vivas AP, Gelaye B, Abost N, Kumie A, Berhane Y, Williams MA. Knowledge, attitudes and practices (KAP) of hygiene among school children in Angolela, Ethiopia. *J prev med hyg* 2010; 51: 73-79.
6. Intercultural Communication Specialists Ethiopia: Language, Culture, Customs and Etiquette. Available at: <http://www.Kwintessential.co.uk/resources/global-etiquette/ethiopia.html>. (Accessed 6 December 2012)
7. Scott B, Curtis C, Rabie T. Health in our hands but not in our heads: understanding hygiene motivation in Ghana. *Health Policy and Planning* 2007; 22:225-233.
8. Water, sanitation and health, facts and figures updated nov 2004, World Health Organization WHO, http://www.who.int/water_sanitation_health/publications/facts2004/en/ (Accessed 6 December 2012)
9. World Health Organization. Water Sanitation and Hygiene Links to Health Facts and Figures. Geneva, World Health Organization; 2004. Available from: http://www.who.int/water_sanitation_health/factsfigures2005.pdf. (Accessed 6 December 2012)
10. Environment statistics of Nepal 2008. <http://cbs.gov.np/>. (Accessed 6 December 2012)
11. Ali I, Mekete G, Wodajo N. Intestinal parasitism and related risk factors among students of Asendabo elementary and junior secondary school, south western Ethiopia. *Ethiop J Health Dev* 1999; 13:157- 161.
12. Assefa T, Woldemicheal T, Dejene A. Intestinal parasitism among students in three localities in south Wello, Ethiopia. *Ethiop J Health Dev* 1998; 12:231- 235.
13. Department of Health, Republic of the Philippines. Personal hygiene 2009. <http://www.Doh.gov.ph/h1n1/images/dm2009-0113.pdf>. (Accessed 6 December 2012)
14. Yalcin SS, Yalcin S, Altin S. Hand washing and adolescents. A study from seven schools in Konya, Turkey. *Int J Adolesc Med Health* 2004; 16:371-6.
15. Lopez-Quintero C, Freeman P, Neumark Y. Hand washing among school children in Bogota, Colombia. *Am J Public Health* 2009; 99:94-101
16. Banda K, Sarkar R, Gopal S et al. Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Trans R Soc Trop Med Hyg* 2007; 101:1124-30.
17. Nematian J, Nematian E, Gholamrezanezhad A, Asgari AA. Prevalence of intestinal parasitic infections and their relation with socio-economic factors and hygienic habits in Tehran primary school students. *Acta Trop* 2004; 92:179-86.