pISSN: 0976 3325 eISSN: 2229 6816

ORIGINAL ARTICLE

ENVIRONMENTAL HEALTH AND GRAM PANCHAYAT MEMBERS OF WESTERN MAHARASHTRA, INDIA

Kadam Yugantara R[1], Samant Anuradha J[2], Gore Alka D[3]

[1]Professor, Department of Community Medicine, BVDU Medical College, Sangli [2]Lecturer (Sociology), Department of Environmental Science, Shivaji University, Kolhapur [3]Assistant Professor in Statistics, BVDU Medical College, Sangli

ABSTRACT

Background The purpose of environmental health is to create and maintain ecological conditions that will promote health and thus prevent disease. Gram Panchayat is a local government agency at village level. As community leaders, Gram Panchayat members (elected members of Gram Panchayat) have more responsibility towards maintaining environmental health. Their awareness, attitude and practices regarding environmental health will determine village environment.
Method: It is a cross-sectional study conducted in villages from talukas (administrative areas) of Kolhapur District. All Gram Panchayat members of six villages from three talukas were administered Self designed questionnaire.
Results In awareness 41.3% members scored above 75% and in attitude and practice 71.73% and 67.39% members scored above 50% respectively. *Only 6 (13.04%) members scored <50% in awareness.* Awareness, attitude & practices were independent of age, sex, experience, post & distance from urban area. Members' awareness improves attitude and practices regarding environmental health. Gram Swachhata Abhiyan (Rural Sanitation Drive) that helps in improving awareness.
Conclusion By improving environmental health awareness of Gram Panchayat members it is possible to improve attitude & practices.

Key Words: Attitude, Awareness, Environmental health, Panchayat member, Practices

INTRODUCTION

Our existence depends on the health and well being of the physical & living environment around us.[1] This is applicable to both rural and urban area. Many factors determine the health both of individuals & of the communities in which they live. One of the factors for this is access to & use of basic services, such as water supply & sanitation. Clean & safe physical environment is an important characteristic of a healthy community.[2] Some eighty percent of all human diseases are linked to unsafe water, poor sanitation & lack of basic knowledge of hygiene and disease mechanism.[1] Protecting the environment, making it safe for man is the requirement for healthful living.

The awareness of individuals about health is fundamental to promoting healthier villages. If people do not understand the causes of ill health & how they can improve their health, they cannot make decisions about investing resources & time to improve their village. Both community leaders & government play important roles in developing this awareness.[2]

Panchayati Raj institute is an agency of local government in India. Elected members of Gram Panchayat are better equipped with administrative powers, as well as transferring information and knowledge to the community for their better living. Being leaders of community more responsibility has to be shouldered by Gram Panchayat members. Maintaining the environmental health is the responsibility of both, Gram Panchayat & community. Ultimately the purpose of environmental health is to create and maintain ecological conditions that will promote health and thus prevent disease.[3]

This study was planned to know the awareness about environmental health among Gram

Panchayat members, their attitude, what they practice & to know the sources of their information.

METHOD

This study was conducted in Kolhapur District of Western Maharashtra, India. First the direction was selected by preparing the chits of four directions and picking one of them at random. Considering Kolhapur, a district place as a centre, three talukas were selected in a row in a selected direction. Two villages from each taluka were selected. The number of villages was decided purposefully to study the effect of distance from urban area on awareness, attitude and practices. A state highway Kolhapur – Ratnagiri passes through these three talukas. Considering it as a landmark two villages from each taluka, one from each side of highway was chosen by lottery method. In all six villages were selected. All the elected Gram Panchayat members from selected villages were included in the study. As per the location and distance from the state highway villages were put in three groups. Group A included 2 villages which were 4-5 kms away from urban area close to state highway. Group B included 2 Villages, village 3; a roadside village situated twenty four km from urban area. Village 4 was situated 30 Km away from urban area on the slope of hillock & nearly 12 km interior from the state highway. In Group C, village 5 was situated 38km from urban area, five km interior from state highway and village 6, 37 km from urban area, four km interior to state highway.

A semi structured, self designed questionnaire was developed & used for data collection, as a standardized questionnaire suitable for the study was not available. Information was collected on the role & responsibilities of Gram Panchayat members towards environmental sanitation & environmental health problems in rural area from gazetteer & experts in environmental science. With the help of this information questionnaire was developed. This was shown to experts to comment on the clarity & completeness of the questionnaire. There were total 53 questions, out of which 44 were close ended & 9 open ended. Thirty-eight questions were about awareness, 7 & 8 were about attitude & practice respectively. Awareness of Gram Panchayat members was assessed by asking various questions about environment and health, like what is environment, effects of man's activities on environment, effect of environment on man's health and the various factors affecting man's environment. Questionnaire included following questions also: which diseases are transmitted by water, source of water for village, quality of water provided to the village, purification methods used in village.

Information was collected about diseases transmitted by soil, name of these diseases, and importance& methods of sanitary disposal of excreta, use of sanitary latrines, availability of sanitary latrines, and use of latrines by children. Most hazardous substance to human health is nothing but human feces & it is the most serious source of water pollution.[4] Questions were also included on collection, disposal and diseases transmitted by solid waste and sullage.

Awareness about the role of mosquitoes and houseflies in disease transmission, about their breeding places, methods to control them was also assessed. It was also important to know whether gram panchayat members were aware about the role of domesticated animals in disease transmission and location of cattle shed. Information was also collected about Pesticides, a hazardous factor related with agriculture and its effect on health. Traditional chullha and its effect on health was another important aspect on which awareness was collected.

Pretesting of the questionnaire was done by conducting a pilot study in another village. After doing necessary changes, this questionnaire was used to collect the data. For the data collection a meeting was fixed after taking prior permission & appointment from head of the village, a Sarpanch (elected president of Gram Panchayat). Investigator herself conducted all the meetings. Purpose of meeting was explained to members and written informed consent was taken. Questionnaire was filled by members. Illiterate members were provided with help.

Observations were noted on various aspects of environmental conditions in a village by investigator by moving about on foot in the village.

Analysis was done by using trial version of SPSS 13. Mean & S.D. of awareness, attitude & practice score was calculated for villages individually & groups. Difference in scores of villages in each group was assessed by using Student's t-test. Comparison of awareness,

attitude & practice score among three groups of villages was done by using ANOVA. Association between various socio-demographic factors & awareness, attitude & practice score was calculated by using Chi - square & Fisher's exact test. Spearman's Rank Correlation Coefficient was used for testing association between the scores of awareness, attitude & practice

RESULTS AND DISCUSSION

There were total 51 members from six villages. Out of which 40 were male and 11 female. For the meetings, 46 members, 36 male and 10 female were present. Total five members were absent for various reasons like out of station, belongs to non ruling party, not feeling well etc.

All these six villages had Gram Panchayat elections held one to one & half months back. Some members were re-elected & had prior experience. Data collection was done between October to December 2007. Village health & sanitation committees were formed recently. Prior to this, villages were having village health committee.[5]

Answers were evaluated and each correct answer was given one mark. The allotted score for awareness was 70, for attitude 12 and practice 15 as some close ended questions were having multiple correct answers. Out of 46, 40 (86.95%) members scored above 50% in awareness. Members scoring above 50% in attitude were 33 (71.73%) & in practice 31 (67.39%). For further analysis members were divided into two groups on the basis of score. As the score of 'awareness' was less than 50%, in 6 members only, the members were grouped as, those scoring <75% and ≥75%, while for attitude & practice members were grouped as having score <50% & >50%.

Age wise distribution of awareness, attitude and practice score is presented in Table No 1. It reveals that awareness score was better in middle age group, attitude in younger age group closely followed by old age group, while practice score was better in young and middle age members. The difference was not significant. This observation suggests that combination of all age groups in Gram Panchayat will be facilitating achievement of healthy environment.

Table 1: Age, Sex and Education wise distribution of Awareness, Attitude & Practice score

	Awareness (%)		Attitude (%)		Practice (%)		Total (%)
	<75 %	>75%	<50%	>50%	< 50%	>50%	
Age (yrs)							
< 35	15(62.5)	9(37.5)	6(25.0)	18(75.0)	6(25.0)	18(75.0)	24(100.0)
35-45	4(50.0)	4(50.0)	3(37.5)	5(62.5)	2(25.0)	6(75.0)	8(100.0)
> 45	8(57.1)	6(42.9)	4(28.6)	10(71.4)	7(50.0)	7(50.0)	14(100.0)
x^2 (df), P value	0.407 (2), 0.816		0.463 (2), 0.793		2.770 (2) , 0.25		
Sex							
Male	21(58.3)	15(41.7)	9(25.0)	27(75.0)	11(30.6)	25(69.4)	36(100.0)
Female	6(60.0)	4(40.0)	4(40.0)	6(60.0)	4(40.0)	6(60.0)	10(100.0)
Fisher's exact P	p = 1.000		p=0.435		p=0.706		
Education							
Illiterate	3(60.0)	2(40.0)	3(60.0)	2(40.0)	2(40.0)	3(60.0)	5(100.0)
Primary	16(64.0)	9(36.0)	8(32.0)	17(68.0)	10(40.0)	15(60.0)	25(100.0)
Secondary	5(71.4)	2(28.6)	0(0.0)	7(100.0)	1(14.3)	6(85.7)	7(100.0)
Higher secondary	3(37.5)	5(62.5)	1(12.5)	7(87.5)	2(25.0)	6(75.0)	8(100.0)
Other	0(0.0)	1(100.0)	1(100.0)	0(0.0)	0(0.0)	1(100.0)	1(100.0)
Total	27(58.7)	19(41.3)	13(28.3)	33(71.7)	15(32.6)	31(67.4)	46(100.0)

Although the observed difference was not statistically significant, male members had better awareness, attitude and practice score than female members. It may be because male members usually have better exposure to media, with other society members and interaction with members of other Gram Panchayat members. This is possible for male members as they devote their spare time for above said activities, while females remain busy in their daily chores and play multiple roles. Usually there is no or very little support for women at their home to

share familial responsibilities. So they have very little or no spare time. Many times they are not allowed to work in their full capacity as a Gram Panchayat member as their roles are monitored by some male family member. Number of women members was also small to draw any conclusion. (Table No 1)

Education & its relation with awareness, attitude & practices are displayed in the Table no 1. There was only one member with professional diploma (agricultural) and he is included in the 'Other group'. Otherwise HSC (education up to 12th standard) was the highest education among the members. Awareness was best in members having education up to HSC. Attitude & practice was better in members with SSC (up to 10th standard) education. Illiterate members scored least in all three aspects. It explains the importance of education. Investigator observed that educated female members were enthusiastic about environmental issues like safe water supply, sanitary disposal of solid waste and sullage, construction of sanitary latrine etc.

There is one study about awareness regarding health hazards of indoor air pollution because of Kitchen fuel conducted in Bangladesh. Awareness about health hazards due to kitchen biomass fuel was assessed among women. They found that poorer, less literate women could not mention specific smoke related illnesses. Women with higher literacy level showed greater awareness.[6] In this study 42(91.3%) members were aware about health hazard. However this study includes panchayat members of both genders.

Out of 46 members, five were Sarpanch (elected members of a village choose their leader amongst them is known as Sarpanch). One Sarpanch was absent. Designation wise analysis shows that attitude and practice was better in Sarpanch than members. It may be due to the type of exposure they get because of their post. The awareness which leads to practice is always long lasting and important. Members were better in awareness than Sarpanch. But observed difference is not statistically significant (Table No 2).

When awareness, attitude & practice score was assessed on the basis of experience, it was found that experience improves awareness but deteriorates attitude and practice, but the observed difference is not statistically significant (Table No 2).

Table 2: Post and Experience wise distribution of Awareness, Attitude & Practice score

Variables	Awareness (%)		Attitude (%)		Practice (%)		Total (%)
	< 75%	> 75%	< 50%	> 50%	< 50%	>50%	
Post							
Sarpanch	4(80.0)	1(20.0)	1(20.0)	4(80.0)	1(20.0)	4(80.0)	5(100)
Member	23(56.1)	18(43.9)	9(22.0)	32(78.0)	14(34.1)	27(65.9)	41(100)
Fisher's exact P	P=1.000		P=0.435		P= 0.706		
Experience							
< 1 yr	8(61.5)	538.5)	1(7.69)	12(92.3)	2 (15.4)	11(84.6)	13(100)
1 -3 yrs	12(66. 6)	6(33.3)	6(33.3)	12(66.6)	5(27.7)	13 (72.2)	18 (100)
> 3 yrs	7(46.6)	853.3)	6(40.0)	9(60.0)	8(53.3)	7(46.7)	15(100)
Total	27(58.7)	19 (41.3)	13 (28.3)	33 (71.7)	15 (32.6)	31 (67.4)	46 (100)
x^2 (df), P value	1.410 (2), 0.494		3.961 (2), 0.138		4.878 (2), 0.087		

Table 3: Village wise Mean Score of Awareness Attitude & Practice of members

	Group A		**Group B**		**Group C**	
	I (n = 8)	**II (n = 6)**	**III (n= 7)**	**IV (n= 6)**	**V (n=13)**	**VI (n=6)**
Awareness	39.62 ± 7.67	42 ± 4.73	45.42 ± 8.94	28.33 ± 7.58	48.61 ± 8.07	43.83 ± 6.76
	p = 0.51		p = 0.004		p = 0.22	
Attitude	7.12 ± 1.96	7.33 ± 1.36	8 ± 1.91	4 ± 1.91	7.92 ± 1.03	5.66 ± 2.94
	p = 0.82		p = .005		p = 0.02	
Practice	5.37 ± 0.91	6.66 ± 2.06	6.14 ± 2.26	4.83 ± 1.32	7.15 ± 1.46	7.33± 1.21
	p =0.13		p =0.241		p = 0.79	

All figure shows mean±sd

People from the village nearer to urban area are usually better educated and informed as they have more exposure. To study the effect of distance of village from city on awareness, attitude & practice(three dimensions), first the separate average score for each dimension of village '1' compared with village '2' in group 'A', village '3' with village '4' in Group B and village '5' with village '6' in Group 'C', by using student's 't'-test. Then the separate average score of all three dimensions of Group 'A', Group 'B' and Group 'C' were compared with each other by using ANOVA test. (Table no. 4)

Table 4: Group wise Mean Score of Awareness, Attitude & Practice of members

	Combined score of groups (mean ± SD)				
	A (n = 14)	B (n = 13)	C (n = 19)	F- value	p - value
Awareness	40.64 ± 6.46	37.53 ± 11.94	47.10 ± 7.83	4.96	0.01
Attitude	7.21 ± 1.67	6.15 ± 2.85	7.21 ± 2.07	1.06	0.35
Practice	5.92 ± 1.59	5.53 ± 1.94	7.21 ± 1.35	4.85	0.01

Table No 3 shows separate average score of three dimensions of villages in three groups. In Group A, village '2' was better than village '1' in all three dimensions. The observed difference was not statistically significant. In Group B, average scores of village '3' were higher than village '4'in all dimensions. The observed difference in awareness and attitude score was statistically significant but not in practice. In Group C, village '5' scored higher than village '6'. Village '6' was better in practice score. Statistically significant difference was observed only in attitude. Out of all six villages performance of Village '4' was lowest in all three dimensions and this was the most interior village from Kolhapur –Ratnagiri highway with approach road in bad condition. Long distance of a village from the main road joining major urban settlement, i.e. the interior village and the poor condition of approach road, means a lack of easy accessibility, are some of the negative factors affecting members' awareness, attitude and practices as well as development and progress of any village.

Mean awareness and practice score was best in group C followed by group A and then Group B. Mean awareness and practice score of Group C (F = 4.93, p = 0.01 & F=4.85, p = 0.01) was significantly better than other two groups. Group 'B' scored least in all three dimensions. Attitude score was best in Group 'A' & least in Group 'B', but the difference was not significant (F=1.06, p = 0.35) (Table no 4). Even though the villages from Group A and B were nearer to urban area than Group C villages, performance of Group C was better. It reveals that distance from urban area has no effect on awareness, attitude and practices.

Spearman's Rank Correlation among scores of awareness, attitude and practice was tested. There was moderate correlation between, awareness and attitude as well as awareness and practice (R = 0.49); which is statistically highly significant (p = 0.000). The correlation between attitude and practice was of low degree (R= 0.12) and not significant (p = 0.421).

Observations by Investigator: Investigator noted observations on source of water supply and its condition, availability of gutters and its maintenance, condition and cleanliness of approach road and road inside the village, availability of school and other educational institutes. It was found that village '5' was best in all observed aspects, while village '4 'was in poor condition. This matches with their performance in awareness attitude & practice score, where Village 5 performed well & Village 4 poor (Table 3). It was observed that Sarpanch of village '4' was not staying in the village and was also absent for the meeting with the investigator. This shows the indifferent attitude of Sarpanch. Sarpanch of Village '5' was enthusiastic & shown keen interest in the survey. A Sarpanch, who is leader of elected of Gram Panchayat members & head of Gram Panchayat plays pivotal role in implementing developmental schemes. One of the job responsibilities of Sarpanch is looking after public health & hygiene by providing facilities for sanitation & drinking water.[7] Leadership, a critical management skill, is the ability to motivate a group of people toward common goal. Sarpanch as a leader should motivate other members. It shows that Sarpanch plays important role in maintaining healthy environment. So training of Sarpanch for better

leadership may help in improving Environmental health related practices.

Gram Swachhata Abhiyan was the source of information for all members. Executive summary of a project of establishing an environmentally friendly sewage disposal plant in Korea, states that, this programme was conducted by local NGOs, local government officials & students. Under this programme they conducted education sessions to community members. This project changed villagers view & attitude towards sewage disposal & environmental health & helped in developing leadership also.[8] It means implementation of programmes related with sanitation & public health help in improving awareness. Newspaper & radio as a source of information was mentioned by only 40% of members.

CONCLUSION

Majority of Gram Panchayat members were having better awareness, attitude & practice about environmental health. Awareness, attitude & practices were independent of age, sex, experience, post & distance from urban area. Interior village and poor approach road affects all three dimensions adversely. Awareness improves attitude & practice. Sarpanch plays important role in improving practices of panchayat members as well as community participation Gram Swachhata Abhiyan has played an important role in improving awareness.

By improving awareness about environmental health of Gram Panchayat members, it is possible to improve attitude & practices about the same. For this, issue based focused training will be useful. Improving leadership qualities of Sarpanch will be beneficial in improving practices. Improving road conditions and more supervision and guidance for interior village will be needed.

REFERENCES

1. Dr.Jay S. Samant, Environmental Studies, Shivaji University, Kolhapur, 2005; Page no.1.
2. Guy Howard, Claus Bogh, WHO. Healthy villages: A Guide for Communities & Community Health Workers, World Health Organisation Publication, 2002; Page1, 2, 9.
3. Park K. ; Environment & Health;Parks Textbook of Preventive and Social Medicine, 19th edition; Jabalpur: M/S Banarasidas Bhanot publishers, 2007: 566.
4. Walter H. Carson Beacon Press, Boston; The Global Ecology Handbook – What You Can Do About The Environmental Crisis, 1990; Page162.
5. Water Supply & Sanitation Department, Govt. Resolution, Ministry, Mumbai. Rural Water Supply,006. Mumbai: 6 Dec2006. P 369.
6. Executive Summary. Available at: http://envstudies.brown.edu/theses/03ahmed.pdf.
7. Gram panchayat. Available at: http://en.wiki/Gram-panchayat.
8. Chuncheongnam-do, Environmental Friendly Sewage disposal in Rural Area, Executive Summary. Available at http://www.agepp.net/files/egepp-korea6-chungnam-fullversion. Accessed on July 2007.

Correspondence:
Dr. Yugantara R. Kadam
Professor, Dept of Community Medicine,
Bharati Vidyapeeth University Medical College , Sangli, Maharashtra
Email: yugakadam2011@rediffmail.com
Mobile: 09890941745