

A COMPARATIVE ANALYSIS OF WATER AND SANITATION PRACTICES IN PROJECT AND NON-PROJECT VILLAGES OF RAJASTHAN STATE, INDIA

ABSTRACT

Water & Sanitation scenario in Rajasthan state of India is quite alarming. This state can be improved with joint efforts of community and Non-Governmental Organisation (NGOs). An international NGO named “Save the Children” is working on this subject since 2009 to educate local villagers about water borne diseases and hygiene practices along with providing them with pure drinking water and construction of public toilets. The present study was conducted in collaboration with Save the Children, with the aim to comparatively analyse water and hygiene practices in these villages and their implication on prevention of water borne diseases. The study was based on interviews and questionnaires, target area being Project villages (Shyopura, Sadasukh, Gulpura, Lesssadi, Lambore Chipyan , Lambore Choti) which were within the project area and a Non-Project villages (Bas-Kanjan, Malwas & Dhyawat) which were outside the project area (with no intervention). During the study, an intensive door to door visit, face to face interaction and Focussed Group Discussions(FGDs) were carried out at House hold level. The aforementioned activities were carried out to analyse water and sanitation practices. During the field visit, utmost care was taken to collect the facts and figures with data from the beneficiaries concerned. As per the results obtained from the study, we were able to find significant difference between the Project village and Non-Project village in terms of awareness about waterborne diseases, hygiene practices, hand washing practices, toilet usage and water treatment.

Key words: Water, hygiene, sanitation practices, water borne diseases

INTRODUCTION

The alarming state of Water and Sanitation scenario in Rajasthan State of India has motivated the researchers, community and Non-Governmental Organisation (NGO) working in the field of community welfare. Little over 84% households in rural areas are covered by rural water supply, while 16% have no access to safe drinking water (Tewari, 2010). According to the census of 2011, 53.1% (63.6% in 2001) of the households in India do not have a toilet, with the percentage being as high as 69.3% (78.1% in 2001) in rural areas and 18.6% (26.3% in 2001) in urban areas (Khambete, 2012). An International NGO named Save the Children (SC), has implemented an integrated Health, Nutrition, Water and Sanitation project “Aapno Swasthya Aapne Haath” (Our health is in Our hands) from 2009 onwards in partnership with local NGOs, two technical resource agencies and with some local partners. The aim of the project was to achieve increased access and availability of quality Health, Nutrition, Water Supply, Sanitation services and improved health practices of the target population of Churu district, Rajasthan. It is estimated that around 37.7 million Indians are affected by waterborne diseases annually, 1.5 million children are estimated to die of diarrhoea alone (Khurana et al). The poor sanitary conditions in these areas are often linked with outbreaks of cholera and diarrhoea which disproportionately affect the children under age of 0-5 years.

In the present study we carried out a comparative study in nine villages of Rajgarh block of Churu district, Rajasthan. The comparative study was aimed at water and hygiene practices in Project and Non Project Villages. Similar studies have been previously carried out at National level in the state of Assam, Bihar, Jharkhand, Orissa, and West Bengal and at International level Bangladesh, Cameroon (west Central Africa). Such studies have been previously conducted by a number of workers like Jagals et al, (2004), Fewtrell et al, (2005), Ako et al, (2009), Kumar et al, (2010), Majra et al (2010). These studies indicated a significant improvement in health and sanitation after intervention. Continuous efforts have been made under the project to achieve its key objectives through community health structures to assess the reduction of water borne diseases and child mortality; ensure access and availability of quality services; improve health, hygiene and practices; expand access to safe water and sanitary toilets; and to monitor ways and means to improve the present condition.

MATERIALS AND METHOD

Study area

The study was conducted in nine villages in the state of Rajasthan, India. The Project villages were considered to be those where awareness programme was conducted and Non-Project villages were the ones with no intervention.

Project villages: Shyopura, Sadasukh, Gulpura, Lesssadi, Lambore Chipyan and Lambore Choti

Non-Project villages: Bas-Kanjan, Malwas and Dhyawat

During the field visit, utmost care was taken to collect the facts and figures with data from the beneficiaries concerned and to draw a comparison in the Project and the Non-Project villages.

Data Collection

During the collection of data the following methodology was adopted to maintain the accuracy on the part of the study:

Primary source of data:

- Interaction with community, frontline health worker (in the form of questionnaire(subjective & objective)
- Focussed Group Discussion (FGD)

Secondary source of data:

- Referring articles
- Brochures
- Relevant books
- Magazines
- Reports & electronic media (internet)

To collect data for the study, a door to door visit was carried out in the villages (both project and non-project) randomly at household level. The interaction was conducted with the help of structured questionnaires. Focussed Group Discussions were conducted to find out people's attitude towards sensitive issues like reduction of water borne diseases, safe and clean drinking water, sanitary practices, etc. The main aim behind the visit was to get a clear opinion of the concerned villagers about the project and its practices at individual and community level.

Statistical Analysis

To statistically analyse the successful implementation of the project, the results were represented in terms of mean percentage \pm SE (Standard Error) of villagers responding to the criteria. The significance of the study was drawn using student (t) test and significance levels were set at $p < 0.001$, 0.5, and 0.05.

RESULTS AND DISCUSSION

During our field visits we observed an appreciable level of awareness and knowledge about health, nutrition and water hygienic practices in the community of project area. During the visit of the Project villages and the Non-Project villages, following observation were made, which are given in the tabular form (Table 1, Table 2 and Fig. 1).

The results show a significant ($p < 0.001, 0.50, 0.05$) improvement in water and hygiene practices in Project villages as compared to the Non-Project villages.

The results obtained in the present study are in consensus with earlier studies (Jagalset al, (2004), Fewtrell et al, (2005), Ako et al, (2009), Kumar et al, (2010), Majra et al (2010) where the active interventions of NGOs have contributed widely to improve water and sanitation practices in the community.

After intervention cases of water borne diseases in the Project villages declined significantly. Similar results were also reported by Ako et al (2009) and Kumar et al (2010). They observed remarkable control on diarrhoea, Cholera, Typhoid, Hepatitis spread in the Cameroon; and Assam, Bihar, Jharkhand, Orissa and West Bengal respectively. In the present study, education to the community has also resulted in the development of hygiene practices. (Jagals et al (2004), Fewtrell et al (2005) and Majra et al (2010) have also reported improvement in hygiene practices after education to community.

CONCLUSION AND SIGNIFICANCE

This is a pioneer study of its kind to spread awareness about hygiene and sanitation practices amongst rural people. This remarkable effort of Save the Children and the researchers can be appreciated as it not only helped to educate the villagers about sanitation practices but also provided them with clean drinking water.

Such models can be implemented in every rural village by joint efforts of NGOs, community and researchers. All these efforts can help to control water borne diseases resulting in healthy children and youth. Furthermore, implementation of such health models can prevent excessive expenditure on the treatment of water borne diseases.

ACKNOWLEDGEMENT

We take this opportunity to thank Save the Children and their partners BCT, HARITIKA AND MARUDHARA ACADEMY and the Respondents, who helped us in gathering important information for the study. We also wish to thank The IIS University, Jaipur, for giving us a platform to carry out our research work smoothly.

REFERENCES

1. Ako AA, Nkeng GE, Takem GEE, Water quality and occurrence of water-borne diseases in the Douala 4th District, Cameroon. *Water Science & Technology* 2009; 59(12): 2321–2329.
2. Fewtrell LA, Kaufmann BR, Kay D, Enanoria W, Haller L, Colford JM, Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis. *The Lancet Infectious Diseases* 2005; 5(1): 42-52.
3. Jagals P, Nala NP, Tsubane TJ, Moabi M, Motaung KC, Measuring changes in water-related health and hygiene practices by developing-community households. *Water Science and Technology* 2004; 50(1):91-7.
4. Khambete AK, The sanitation crisis in India - An urgent need to look beyond toilet provision. *India Water Portal* 2012; 12:14.
5. Khurana I, Sen R, Drinking water quality in rural India: Issues and approaches. *Water Aid: Drinking water quality*.
6. Kumar JN, Chowdhury B, Sengupta A, Perception and Practice of Hygiene and Impact on Health in India 2010.
7. Majra JP, Gur A, School Environment and Sanitation in Rural India. *Journal of Global Infectious Diseases* 2010; 2(2): 109-111.
8. **Tewari R**, Rural drinking water supply efforts are inadequate: panel. *Live Mint and the Wall Street Journal* 2010.

Parameters Studied	Project Villages	Non-Project Villages
1. Awareness on Water Borne Diseases	92.5 ± 4.69 per cent population were aware of the terms like Malaria, Typhoid, Diarrhoea, Vomiting and Cholera.	11.66 ± 1.35 per cent population did not have any idea about the symptoms (like Vomiting, nausea) that lead to water borne diseases.
2. Hygiene Practices	89.16 ± 2.18 per cent population was aware of hygiene practices and followed them. During the visit it was observed that their houses were clean and the utensils used to cook food were also washed properly and their clothes were clean.	28.33 ± 8.28 per cent population was found wearing dirty clothes and had untidy hair. The drinking water pot and the food prepared were left uncovered. The utensils used for eating were not washed properly. The household things were scattered here and there.
3. Hand Washing with soap	97.50 ± 1.56 per cent villagers demonstrated hand washing practices with soap. It gave us a better understanding that the beneficiaries were aware of the hand washing practices. They practiced hand washing before preparing the food and eating, and after going to the toilet.	3.33 ± 1.92 per cent villagers did not wash hands with soap even after using toilets.
4. Use of Toilets	89.16 ± 6.52 per cent people were using toilet. It was observed that almost all villagers had toilets at their house premises. They knew about the open defecation and the diseases caused by the process. We observed that their toilets were clean and some of them even used toilet cleaner to clean their toilets.	61.66 ± 5.44 per cent people were using toilets but they were not clean and rest of the villagers followed open defecation.
5. Water Treatment	84.16 ± 3.62 per cent population treated the water before drinking. People used filter, alum, bleaching powder and red tablets to treat their drinking water and this process helped them to lead a healthy and disease free life.	63.33 ± 6.76 per cent population did not use any of the basic water treatment technologies to filter water before drinking.

Table 1: Comparison between Project and Non-Project villages:

Parameter studied	Before Project implementation	After Project implementation
Water Borne Diseases	Most of the villagers specially the children under the age of 0-5 years were suffering from diseases like Malaria, Cholera, vomiting and diarrhoea. Death was reported every month leading to increased child mortality rate.	90 ± 2.04 per cent reduction in water borne diseases were observed.

Table 2: Incidences of water borne diseases before and after the implementation of the project in the studied areas

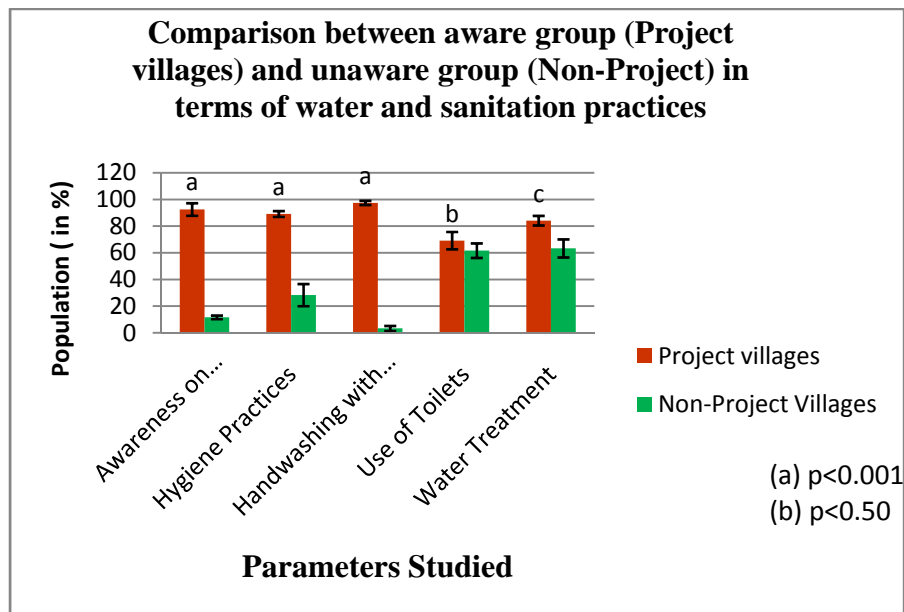


Figure 1: Comparison between aware group (Project villages) and unaware group (Non-Project) in terms of water and sanitation practices

Sonal Jain*, Ruchi Middha, Pallavi Kaushik, Shelja K Juneja

Department of Environmental sciences and Life Sciences, The IIS University, Jaipur

Email id:- sonaljain2189@gmail.com