

DRY TOILET – A BOON TO RURAL COMMUNITY

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This retrospective study done at village BASNI, in RAJASTHAN, as a community health project of Hindustan Chamber Chikitsalaya and Sufiyan Hospital and research center, BASNI.

The records of outpatient department attending medical cases, during 1998 and 2001, were studied and compares with medical ailments during 2001 to 2007. The DRY-TOILET PROJECT was adopted as community health's project in 2001 for this rural village under community welfare project of SINGLE PIT DRY TOILET PROJECT. By end of year 2007 about 81% of house-holder were having SINGLE PIT DRY TOILET in front of their houses.

Total householders with population of 1011 people (80%) females, majority (93%) were Muslim and belongs to low socio-economic status (grade III and IV), the level of education was less than eight standard (91%).

The medical cases were analyzed of both the groups in relation to mainly Respiratory, GIT, Skin disorder, Helminthes infections, infectious diseases and insect bites.

This study shows that there was remarkable improvement in reducing overall incidences of RESPIRATORY TRACT INFECTION (32%), GIT INFECTIONS INCLUDING DIDRRHOOEAL (32%), Skin disorder like scabies and pyoderma (25%), Intestinal infestations (44%), this study revealed a very striking observation that the incidences of DRACUNCULOSIS (guinea worm) has gone down to less than 3%, the incidence of snake bite and scorpion bites were also reduced by 28%.

It is observed that being a low socio-economic, low education, rural setup and orthodox Muslim community, the success of this project was well accepted in this rural community. The core success of this project was also because of health education during school health programme. Now this village is entering into phase II of safe water and RAIN WATER HARVESTING PROJECT in 2008. We need to further evaluate the over all reduction in morbidity and mortality as acceptance of DRY TOILET PROJECT INCREASES.

KEY words;

Community health project
Dry- Toilet Project
Infectious diseases

INTRODUCTION;

Poor sanitation is known to increase the risk of morbidity and mortality because of various infections and infestations. Several studies have found a high co-relation between childhood morbidity and availability of sanitation services. It has been estimated that 1.7 million deaths each year or 3.1% of all deaths are attributable to inadequate access to water, proper sanitation and hygiene.

One third of the world population, about 2.5 million people lacks basic sanitation. The developing world , including India, bears the burden of neglected sanitation services because of various social, Ecological and demographic reasons. The Governments across the globe have understood the need for providing improved sanitation and have committed themselves at the Millennium Declaration to understand measures to provide sanitation services.

India is a developing country, its 70-78% population lives in rural areas with prevalence of various preventable communicable diseases. As far as rural sanitation ,it was only 1% of rural household ,which improved to 22% in 2001 because of state/local government implementing various sanitation projects in partnership with various NGOs ,such as SULABH, and Rajasthan Institute of Local Self government. The ministry of rural development has taken initiative in this direction by launching total sanitation campaign, but there is a need to have an effective measuring tool for assessing the efficiency of the program. For example when the sanitation system improves, the health status of the people also improves..

In the same contests Hindustan chambers chikitsalaya and Sufian hospital came together to study the impact of Dry-Toilet Project in a small rural village, Basni, in Rajasthan in respect to various health parameters specially various infections and infestations in the rural ,with low socio-economic ,low literacy community.

In keeping about the fact that , Rajasthan is a state with low rain fall , dry weather with scarcity of clean water. And with the under-standing that Dry toilet saves clean water,we have taken this initiative of this study.. A normal water closet uses from 5 to 15 liters of water per flush. Dry toilet doesn't need water to function. Most of the nutrients found in regular waste water come from the water toilet. When dry toilet is used, the remaining waste waters are much more easier to manage. Dry toilet has even less odors than a water toilet because of the ventilation systems.

METHOD AND MATERIALS;

This retrospective study was done and conducted at a rural village ,with about 311 household and population of 1011 habitants .The population belongs to low socio-economic status, low income group ,low literacy rate, mainly Muslims community with strong religious followers.

The village has adopted, through its community welfare and health project, Single-pit Dry-Toilet Project in 2001. By the end of year 2006 , 86% of the household were provided ith Dry-toilet facility.

The OPD records of patients with various medical ailments, attending the Sufian Hospital were analyzed and studied .The cases were divided into two groups , First- the cases attending during the period between year 1996 and 2001 and Second –group of cases between 2001 and 2006. The cut-off year was 2001, when this project was adopted and implemented.

Comparative case study were done in incidences of Respiratory tract infections, e.g. tonsillitis , rhinitis , otitis media , sinusitis and lung tuberculosis. ,Gastro-intestinal tract disorders namely diarrheal diseases , hepatitis , enteritis etc. ,Parasitic and infectious diseases like malaria, typhoid , worm infestations , dracunculosis (guinea worm) , Dermatological disorder like, scabies, fungal skin diseases, pyoderma , and eczemas. The incidences of scorpion and snake-bite also studied. Various viral diseases and the occurrence were recorded e.g. conjunctivitis , measles, chicken-pox and cases of poliomyelitis also studied for both the groups. The cases in both the groups were analyzed for over-all out come in the incidences of these morbidity conditions after adopting and implementing the Dry-toilet project.

RESULTS

The result of this, retrospective study has showed that in group A ,total cases of RTI were 9966 ,out of which were cases of rhinitis 3320, tonsillitis 3034 ,otitis 1632 , sinusitis 660 and lung tuberculosis 1320. As compared with the B group they were 2270, 2605, 857, 415 and 529 respectively. This study showed a reduction of 32% in the incidences of respiratory tract infections.

Graph showing the RTI in group A AND B

As regarding GIT disorders ,total cases in group A were 9262 ,out of which the cases of diarrheal diseases were 7630 ,infective hepatitis were 953 ,and 680 cases were of enteritis. In group B , there was drastic reduction in incidence of diarrheal diseases (5125) , the cases of infective hepatitis were 620 and 484 cases were of enteritis. There were 175 cases of typhoid in group A and 125 cases recorded for group B.

GRAPH SHOWING GIT DISORDERS IN GROUP A AND B

Parasitic infestations, mainly round worms, in group A , were 1320 , about 60 cases of dracunculosis (guinea worm) were also noticed. For group B , the prevalence of round worm infestation was 739, (about 44% less). The striking observation was the reduction in the cases of dracunculosis (guinea worm) ,which came down to only 4 (about 93% less).The malarial cases were 385 (group A) and 405(group B).

GRAPH SHOWING PARASIC INFESTATION IN GROUP A AND B

Total of 2364 cases of skin diseases were recorded in group A , out of which 1296 were of pyoderma , 863 of scabies and 205 cases of fungal dermatological diseases were noted. In goup B there were 989 were of pyoderma, 673 cases of scabies and 112 fungal skin diseases cases were recorded.

GRAPH SHOWING THE SKIN-DISEASES IN GROUP A AND B

There were 795 cases of scorpion and snake-bite cases in group A , and 223 cases of scorpion and snake-bite cases were recorded in group B.

SCORPION AND SNAKE-BITE

- TOTAL CASES OF 795 IN GROUP A
- 223 IN GROUP B
- REDUCTION IN INCIDENCES BY 28%

DISCUSSION

A follow up study of 212 preschool children from low income settlements of Mumbai noted a significant correlation between morbidity due to diarrhea, acute respiratory infections, and household hygiene behavior, environmental sanitation. The population based case control study in Porto-Alegre and Pelotas in Brazil too found non availability proper sanitation and residence in a poorly built houses to be significantly with increase risk of morbidity and mortality from diarrhea. Open defecation, un-disposed waste and lack of drainage in poor communities, pose serious health threat to people. Since pathogens contaminate drinking water and soil, multiply rapidly. Frequent episodes of illnesses have a serious impact on general health and future potential. In the faeco-oral continuum of disease transmission, organisms can be transmitted through fluids, foods, fingers, flies and fields.

This retrospective study done to evaluate the impact of improving sanitation and its effect of the prevalence of various infection and infestation in the rural community has also revealed the improvement in overall improvement in morbidity of many illnesses. following observations. After the implement of dry-toilet project, it has been observed that the incidences of respiratory infection has come down by 32%, GIT disorder morbidity cases has reduced by 32%, with remarkable reduction in diarrheal diseases. It was observed that in this study the parasitic infestations mainly round worms and dracunculosis came down by 44%, but reduction in dracunculosis may be attributed to improved hygiene in the community. There were not significant change in the prevalence of malarial cases and showed the endemic nature of the disease. As the diseases has reduced in the community, it improves the acceptance of the project. The health of community depends on the level of education and immunization programs of the governments

REMARK

We are very happy to learn from this study and wish that future community welfare projects also will be accepted in the community. All the people were happy to see their small village getting healthier and educated.