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Perception of a *Schistosomiasis* Control Project in Rural Kenya by the Beneficiaries
N.N. Katsivo, PhD., (Behavioural Science), L.N. Muthami, MSc. (Medical Statistics), M. Karama (Public Health) and F. Kingori (Clinical Officer), Kenya Medical Research Institute, P.O. Box 20752, Nairobi.

Requests for reprints to: M.N. Katsivo

PERCEPTION OF A *SCHISTOSOMIASIS* CONTROL PROJECT IN RURAL KENYA BY THE BENEFICIARIES

M.N. KATSIVO, L.N. MUTHAMI, M. KARAMA AND F. KINGORI

SUMMARY

A *Schistosomiasis* control project was implemented in Mwea Rice Irrigation Scheme in Central Kenya between late 1983 and December 1988 by KEMRI scientists in collaboration with the National Irrigation Board. The aim of the project was to control schistosomiasis through provision of alternative water sources, bath and laundry units, latrines, chemotherapy and health education. The community participated fully. Five years later in December 1988, two hundred and three (203) household heads were interviewed on their perception of the control project in terms of purpose, project ownership and management, benefits, continuity and their knowledge of schistosomiasis transmission cycle. Sixty one percent (61%) of the respondents were female and 39% male. 92% of them said that the purpose for the project was to treat, control and prevent bilharzia from spreading, and to promote good health. Slightly over 50% said that the project belonged to them but that they would have liked to be more involved in its management. 74% said that they are able to save time because the facilities are now nearer to them; whilst 79% felt that they were saving money because they did not have to buy drugs since they felt healthier. 99% said that they thought that bilharzia has been controlled, and 82% said that their children looked healthier. Ninety five percent (95%) said that they could see the project surviving for a long time period suggesting that it was self sustaining and they were willing to start a maintenance of facilities fund. Overall, the community appreciated the social, economic and health benefits derived from the control project.

INTRODUCTION

The manner in which a community perceives life activities around it largely determines the importance attached to sustaining them and in so doing, ensuring their survival. Many life supporting activities have been preserved for many generations through incorporation into peoples' basic socio-cultural values and norms; commonly referred to as tradition. It is important to note that culture is not static - It changes with the times. Since the mid seventies, efforts in a lot of areas have been directed towards community oriented action processes in rural development planning, in order to minimize chances of alienating beneficiaries from the very developmental projects which are intended for elevation of their standard of living (1-4). In the health field, projects to control a disease like intestinal schistosomiasis whose signs and symptoms are not apparent are faced with constraints related to articulation of the problem. The community has first of all to understand and accept that they have a problem which is high on their priority list, and then be motivated well enough to do something about it.

Due to both internal and external socio-economic/ political influences over the years, decision making and other processes that ensure the survival of the society have undergone tremendous changes. Shifting of power and responsibilities are the order of the day.

Once the project has been implemented, the community has to have the right perceptions and attitudes towards it in order to desire to sustain it. Studies aimed at finding out how communities perceive development projects that have been introduced to them for whatever purpose, need to be carried out for the sake of achieving the original objectives of those projects. This would provide for opportunities to modify, restructure or strengthen aspects of the project that would work towards its success.

A project was started in 1983 by scientists at the Kenya Medical Research Institute with a general objective of reducing the transmission of schistosomiasis in a rural community in Kenya, by mobilizing the community to effect changes in behaviour regarding water contact, water use and faecal disposal. The study was

in Mwea Rice Irrigation Scheme in Kirinyaga District, 97 kilometers north of Nairobi.

The irrigation scheme covers 30,000 acres of land ;with over 15,000 under irrigation, and it is managed by the National Irrigation Board of the Kenya Ministry of Agriculture. A population of approximately 40,000 lives in 36 villages on the scheme, where each tenant farmer is allocated 4 acres of paddy fields. The full time occupation of the adult males and females is rice growing by irrigation, with children helping during their free time from school. The project was implemented in Thiba, one of the 36 villages. It is surrounded by both manmade irrigation canals and a natural stream and river. Involvement of the community was initiated through public meetings, where the study objectives and procedures were introduced to them. At the request of the investigators, the community nominated young men and women who collected data and acted as a link between the research team and the community. They were later given basic communication skills and facts about schistosomiasis transmission cycle, treatment, prevention and control, and they then became the community health educators in schistosomiasis.

After baseline data collection between September 1983 and early 1984, health education was introduced, and a water and health committee comprising of community leaders and investigators was formed. The committee oversaw the construction of 11 handpump operated shallow wells, 35 permanent pit latrines in the rice fields where none existed and laundry and bath units at 6 of the well sites.

Installations of these facilities was completed in May 1986. All the resources were provided by the community with a little help from the International Development Research Centre of Canada who provided the handpumps. Other activities of the project included clearing of the canals and streams of their thick vegetation, and one round of mass chemotherapy with praziquantel in June 1986, as soon as the community started to use the facilities (Katsivo *et al.* 1992). The community health educators were also trained in project management and maintenance of the various facilities that had been constructed. One of them was selected as the project supervisor in the field. The perception study reported in this paper was undertaken cross sectionally in December 1988.

MATERIALS AND METHODS

Thiba, one of the villages in Mwea Irrigation Scheme, has 370 households. A sampling frame of all the household heads was drawn.

A 50% sample of the household heads was considered with an additional 5% to allow for attrition. From the sampling frame every other household head was selected giving allowance to an extra 5% due to refusals, absenteeism etc.

A total of 203 out of 370 household heads were therefore selected as the respondents for the project evaluation exercise. This gave a sex distribution of 123 (61%) females and 80 (39%) males. The household heads were interviewed using a pretested open ended interview schedule by a 4th year medical student, with the assistance of trained field workers, on their perception of the control programme in terms of purpose, need for it, level of involvement of the various participants, project ownership and management, benefits derived from the project, sustainability and their knowledge of the schistosomiasis transmission cycle. They were also required to comment on the structural design and other aspects of the various facilities. The interview schedule had already been translated into the local language during training of the fieldworkers and pretesting exercise for the purpose of ensuring uniformity in the way that the questions were asked. The questionnaires were checked for completeness at the end of each day by the medical student, and any missing information was obtained by revisiting the particular households.

Data processing and analysis: A code book for all the open ended questions was developed after scanning through every question. Every response was given a unique code. The questionnaires were then coded and entered into an IBM computer. The data was cleaned after entry and a hard electronic copy created for future reference.

The data was analysed using the SPSS/PC+ statistical analysis system. Summary statistics like the frequencies and proportions were produced for statistical inference.

RESULTS

Purpose, ownership and project implementation: Ninety two percent (92%) of the household heads said that the control project was started in order to treat, control and prevent bilharzia from spreading, and 96% knew that the project was started in order to reduce illness due to bilharzia. The community did not see itself as being fully involved in the implementation of the project. Slightly over 50% said that the project field workers were the ones that managed the project.

On ownership of the project, only 53% of the household heads said that the project belonged to the community. The rest of them said that the project belonged to the Kenya Medical Research Institute (16.8%), Ministry of Health (14.8%) and 14.8% said that it belonged to a combination of the community, the field workers and the project supervisor. The project supervisor, the field workers, the project committee chairman and his committee members were said to be the project managers by 46% of the household heads whilst 42% of them saw field workers as the managers. The field workers were said to be the ones who maintain the handpumps and latrines by 68% of the household heads, whilst 21% said that the field workers together with the water and health committee and field supervisor formed the maintenance team. 52% of the household heads said that the combined team should continue to manage the project and also undertake maintenance of the facilities, whilst 47% that the entire community should be involved in undertaking these tasks.

Benefits of the control programme: (a) Time—74% of the household heads said that they now saved time because the facilities are near, and they did not go to hospital often because they are healthier than before the project started. (b) Economy—59% of the household heads said that they were not spending money to buy drugs or to go to hospital whilst 21% said that they did not need to buy firewood for boiling water in addition to the fact that they did not buy drugs because they felt healthier. (c) Health—majority of the household heads (82%) said that their children looked healthier because of using the clean water which they can even draw for themselves. In addition, they did not swim in the canals with infective waters anymore because of the bathrooms provided by the well sites. They said that children had even stopped defaecating along the water sources. 99% of the household heads said that they thought that bilharzia was getting controlled by the programme (d) Workload—70% of the household heads said that their work had been made easier because distances to water sources had been reduced and also reported that even their young children could be sent to fetch water from the wells since the pumps were easy to operate.

Comments about the programme by others: Ninety five percent of the household heads interviewed said that they had heard other people from outside the study area talking about their control programme, and that those people had a desire to have a similar programme of their own. Further, those people said that they would be ready to start one if given technical assistance.

Suggestions for improvement of the programme: Over 90% of the household heads said that the programme had a good chance of survival provided that the entire community was trained on maintenance of the facilities and was more involved in its management as a whole. Twenty one percent (21%) however felt that it was necessary to employ special people to undertake these tasks; In addition, they felt that the government should provide more assistance especially with purchase of the more expensive items like pumps.

Facilities design: Other than lack of privacy around the well areas and lack of doors and roofs on the latrines in the rice fields, overall the household heads had no problems with either the design of the facilities or their operations. In as far as maintenance and ability to repair the facilities was concerned, over 70% of the household heads said that they had not been trained to do so, but could only keep the well area clean. If training and spare parts were provided, they felt that they would be able to maintain and repair the facilities. The facilities were generally much appreciated and the community expressed need for more of them.

The household heads' KAP on schistosomiasis: Knowledge of schistosomiasis causation, transmission, treatment, prevention and control was good, with over 90% of them giving correct information for all the aspects.

DISCUSSION

The objectives and aims of the schistosomiasis control project were well understood by the community. However there were mixed feelings regarding the ownership and management of the project, with half of the community members feeling that project matters were largely in the hands of the water and health committee members, project staff and the investigators. The project staff had been nominated by the community at the start of the project. Perhaps the committee should have held more public meetings with the community to enhance their participation in decision making. Half of them saw the merit in having only a section of the community undertaking the project management and maintenance of the facilities. The other half though would have preferred to have the entire community trained and put in charge of the project. It would have been better to train all the villagers in project management and maintenance of the facilities and ask them again to nominate managers and maintenance team of their own choice.

The majority of the household heads interviewed felt that the control programme was very beneficial. Socially, they had more time, economically - they saved on drugs and firewood and health-wise they felt in better health especially as regards their children.

Parasitological examination of the study population which was done in December 1988 showed that over a follow-up period of 2 years after chemotherapy in 1986, the age group 5-19 had the following reductions in geometric mean egg-counts (GMEC): 94% for those with heavy infection, 27.3% for those with moderate and 3.4% for those with light infection. In the older age groups, reduction of infection for those with heavy infection was by 95%(5). It is well documented that reduction of intensity of infection reduces morbidity due to schistosomiasis(6) and is therefore a good indicator of success of the programme in controlling schistosomiasis in the study area. Defecating along the water contact sites, where observations showed that age group 5-19 years was responsible for 94% of all the defecating, had decreased to almost zero over a period of 2 years(7). The swimming activity by this age group also decreased.

It must be noted however that the study village was only one and there were 35 others which did not receive the improved facilities, health education and chemotherapy. Due to high mobility of the population in the area, reinfection may occur outside the study area. The programme would make a bigger impact on schistosomiasis infection if it was expanded to cover a wider area and if chemotherapy was carried out more frequently. According to Muthami et al(5), treatment for children should be done annually and 2 yearly for adults because 50% of the population in those two groups are reinfected at the mentioned time intervals

in Mwea. Privacy around natural water sources that is normally provided by vegetation cover was desired around the wells. The project staff planted trees which were devoured by animals. May be this would have been pursued more vigorously during the construction exercise, so that by the time the wells, bath and laundry units were in use, privacy would already have been provided for. The latrines in the rice fields were constructed without doors and roofs because earlier experience with the study community had demonstrated a high degree of vandalism. To avoid this the latrines had a spiral design which provided for privacy even in the absence of doors. Training of the entire community in maintenance rather than of a few people was clearly more desired as it came up as an issue severally. The people would then have decided on the team for the day to day running of the project, because it is often these very intricate factors that either make or break a programme and therefore must be addressed. In conclusion, this study showed that a well motivated community can be guided to undertake development projects whose primary aim is to improve on their health. However, dialogue and discussions about the various steps being taken in the overall running of the projects must be maintained on a continuous basis and not just at the beginning of the project. The challenge of the researchers and other health workers is how to set up this mechanism which must be dynamic enough to accommodate changes that will inevitably occur throughout the project implementation and maintenance stages.

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