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Measuring the effectiveness of hygiene promotion interventions

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IMPROVING HYGIENE IS one of the most critical questions remaining today as we work to achieve the Child Health Millennium Development Goals (MDGs). Poor hygiene and sanitation is largely responsible for the global burden of diseases. Most diseases related to water and sanitation can only be prevented by improving a number of hygiene behaviours.

There are a large number of approaches that have been designed to contribute to behavioural change. However, only a limited number of studies have tried to assess and compare the effectiveness of these different approaches. As a result little is known about the most appropriate hygiene promotion interventions for any given context.

Due to this gap in information, regarding the factors that contribute to sustaining changes in hygiene behaviours, hygiene promotion has continued to be carried out without facts as to what works and what does not work. Huge investments have been made in hygiene promotion, often without supporting documentation to show what worked and why.

This paper presents a number of findings from the research "Sustainability of hygiene behavioural change" carried out in six countries, with a special focus on the study conducted in Kenya and its subsequent results. The paper gives an overview of those aspects that contribute to the implementation of hygiene promotion interventions that lead to sustainable changes in hygiene behaviours. It also considers the implications for the design of effective approaches. At the end of the paper the authors advocate for the development of an easy-to-use tool to measure the cost and the effectiveness of hygiene promotion interventions and list the factors such a tool should assess.

Study on sustainability of changes in hygiene behaviours

From 2000 until mid 2003 a joint research project was carried out to study the sustainability of changes in hygiene behaviour in six countries. The project combined a concerted action approach financed by the European Commission (EC) and actual field research, financed by the Dutch government (DGIS) and the project partners¹. Technical support and programme management was provided by the IRC International Water and Sanitation Centre (Nether-

lands) and the London School of Hygiene and Tropical Medicine. The study had the following objectives:

- To develop an active network in the field of hygiene promotion;
- To assess the level of sustainability of behavioural change one to three years after a hygiene promotion intervention;
- To develop a methodology for simple/cost-effective longitudinal monitoring of behavioural changes;
- To gain insight into relationships between project approaches, external conditions and sustainability of changes in hygiene behaviour;
- To determine policy and programming implications and influence policy to increase the effectiveness of water and sanitation programmes.

The research centred on the following behaviours: handwashing, latrine use and maintenance, and water storage. Data were collected in two annual rounds of surveys from households and schools where the interventions ended between one and three years ago. The survey data were collected using a wide range of methods that included questioning, observation and demonstration, pocket voting and focus group discussions. Each study was unique, reflecting local conditions. The research was not meant to compare the hygiene promotion performance of the organisations involved, but to determine whether behavioural changes continued and to identify what determines behavioural change.

The study in Kenya

The study conducted in Kenya in the Kisumu District along the Lake Victoria region gave important insights regarding the factors that either promote or hinder the changes in hygiene behaviours as well as the sustainability of these changes. The measurement tools used for the research included questionnaires, demonstrations, focus groups discussions, observations and triangulation through the use of pocket chart voting. The team has interviewed both men and women from a number of households which had been involved in the intervention, as well as men and women of a number of households which did not benefit (directly) from the hygiene promotion interventions, the last group being the control group. All households involved in the study had been sampled randomly, however, only those households with a latrine have been included in the sample. At the end of the study the findings from the different

¹ Foundation for Technical Cooperation (COSI) in Sri Lanka, Nepal Water for Health (NEWAH); Network for Water and Sanitation (NETWAS) in Kenya, Socio Economic Unit Foundation (SEUF) in Kerala, India, Volta Region Community Water and Sanitation (VRCWSA) in Ghana, and Water Aid Uganda

groups of households have been compared and analysed with the help of the computer programme EPI Info, in order to identify statistical relationships between the different variables and to assess the sustainability of the changes.

The main findings of the study in Kenya

The first and most important finding of the study was that there were no major differences in hygiene behaviour changes between the results of those households in communities in which the interventions ended respectively in 1998, 2000 and those where the interventions were initiated in 2001. This suggests that investments in good hygiene promotion lasts and that behaviour changes are sustainable. This also suggests that although the sustainability of hygiene behavioural change remains important, it is more important to identify those factors that determine the effectiveness of hygiene promotion interventions in inducing certain levels of behavioural change. Other important findings can be summarised as follows:

There was no significant statistical relationship between the provision of water sources close to the homestead and good hygiene behaviours. This implies that the mere provision of convenient sources of water is not sufficient to induce good hygiene behaviours.

- There was a strong relationship between the education of women and their handwashing skills ($p < 0.0017$) and their practice of washing hands after latrine use ($p < 0.000001$). This could imply that women with a higher education are more likely to adopt the practice of handwashing at critical times than those women with a lower education. However, the fact that the hygiene promotion intervention was weak and of a low quality also contributed to the limited impact on the behavioural change of the less educated and poorer women.
- Women and men of the intervention groups had significantly ($p < 0.011$) better latrine use than those women and men of the control group. Also the results for handwashing practice among those from the intervention group was much better compared to the practice of those of the control group ($p < 0.017$). However, compared to latrine use, the percentage of those washing hands with soap/ash is significantly lower ($p < 0.00003$). The finding could either imply that the project may have promoted toilet use without a special emphasis on the importance of handwashing with soap/ash after latrine use, or that it is more difficult to promote handwashing than latrine use. It can be concluded that although the project had a positive impact on both latrine use and the change in handwashing behaviour, there is a need to give more attention to the promotion of handwashing in order to achieve the intended health benefits of increased toilet use.
- Those households where children had difficulty in using latrine, the latrine tended to be less well used ($p < 0.024$). This would imply that the latrine design, and especially

the size of the aperture, is determinant for the use of the latrine.

- The results from the study also imply that the diffusion of hygiene messages through face to face contacts with government and project personnel is more important (95 %) than through other community members or family (5 %). This would suggest that the top-down information flow (project personnel–community members) is more important than the lateral flow of information between family and community members.
- Furthermore it was found that although the project had trained women group members, with the aim of training others on hygiene related issues to induce the multiplier effect, the trained women did tend to apply the training mostly to themselves and their own homes (65%) before training or advising others (31%). Thus “self-application” was twice as high as dissemination through training others or giving advice. Based on this finding it could be concluded that multiplier effect approach has limited results.
- The study also proved the well known statement “knowledge of the importance of certain hygiene behaviours does not necessarily lead to practice”. Although all the respondents reported that they had heard about the importance of using latrines, only 48% of the control group and 74% of the intervention groups reported using latrines. Similarly, only 41% of the intervention groups and 22% of the control group reported washing hands with soap/ash after latrine use. This finding demonstrates that knowledge in hygiene behaviours does not necessarily lead to practice. However, there was a significant relationship ($p < 0.00002$) between the knowledge in handwashing, especially the knowledge for handwashing at critical times and the skills in handwashing.

Implications of the findings for the design of effective interventions

From the study it can be concluded that hygiene promotion does induce behavioural change and that over time, this behavioural change is sustainable. It is therefore justified to invest in hygiene promotion! Furthermore the study reinforced the general feeling that the availability of water was not related to good hygiene behaviour. This implies that the provision of hardware is not enough and should always be combined with hygiene promotion intervention to achieve health objectives of the project.

All studies in the six different countries looked at aspects of the quality of the hygiene or community interventions. From the study it can be concluded that the effectiveness of the intervention is related to the quality of intervention and the necessary duration of the intervention (of a high quality intervention) is related to the social and economical context in which the intervention is implemented. The history and exposure of communities with similar or other development projects, the existence of strong active community

structures, the time needed to reach the people and organise community groups and the level of poverty in the community seem to be examples of social and economical factors that will influence the time it will take to achieve behavioural change. Furthermore it was found that in particular those households that were visited during the intervention did significantly better than those that were not visited and only heard the messages during community meeting. This was especially true when it concerned the more difficult behaviours.

When translating these findings into guidelines for the design of hygiene promotion interventions this would mean that the effectiveness of the intervention will depend on the context in which the intervention is implemented, the intensity of contacts with target audiences, the kind of contacts - of which group meetings in communities and home visits seem to be most effective - and the quality of the messages delivered. This last issue seems to be directly related to whether the messages are made specific for the conditions in which they are transmitted and whether they go beyond messages on 'why and how', (knowledge) but also include skills training. Furthermore the confirmation of the hypotheses "better maintained latrines are better used" implies that hygiene or sanitation promotion programmes need to put due emphasis on maintenance and not stop when latrines are constructed.

The outcomes of the study in Kenya suggest that the importance of the lateral diffusion of hygiene messages, the diffusion through family members, relatives and neighbours, is very limited. However, when comparing these outcomes with the outcomes of the studies in the other countries it seems that the importance of lateral diffusion of hygiene messages depends on the context in which the hygiene intervention is implemented. In some communities it was found that the communication between women and their children was strong and that women and children influence each other behaviours. In other communities this has not been the case. On the other hand, in all countries, an important contribution came from active WATSAN, ward and women committees, who played an important role in the lateral diffusion of hygiene messages. They could therefore, be identified as important local engines for hygiene behavioural change. This would call for an emphasis on capacity building of such local structures, also for hygiene promotion.

The strong relationship between the education of women and their handwashing skills, as found in Kenya, indicates the importance to focus more on the design of more equitable hygiene promotion, making special efforts to reach the poorer and less educated women and men. Although the results of other countries did not necessarily support the findings in Kenya, almost all studies indicated the need to have special programmes to reach out to the male members in the community. This would indicate a need for increased attention to the design and implementation of gender and poverty sensitive approaches.

The challenges ahead

There are many different approaches to carrying out hygiene promotion activities. The results of the above study indicate that the way hygiene promotion interventions are implemented and the context in which they are implemented have an impact on the effectiveness of the intervention and to some extent on the sustainability of the changes in hygiene behaviour.

Based on the findings of the study it can be concluded that the factors that need to be assessed and compared should, amongst others, include:

- the design of the intervention, such as the intensity and kind of contacts with the various target audiences, in relation to the behaviours and messages promoted;
- the expertise and skills of the staff responsible for the planning and implementation of the intervention, including their expertise in the implementation of gender and poverty sensitive approaches;
- the gender and poverty policies of the implementing agency;
- the social and economical conditions (poor, rich; urban, rural; high population density, low density; existence of strong community structures or not) in which hygiene intervention will be implemented and how these influence the suitability of the proposed replacement practices, the communication channels used and the possibilities to stimulate lateral communication and diffusion of the messages as well as the opportunities to organise women and men for hygiene promotion;
- the physical environment (for example in a wet or dry area) as this will influence the most prevalent risk and communication plan.

At present there is no accepted methodology for measuring the cost of these programmes and there is only limited experience with the assessment of the effectiveness and impact of the different interventions. However, information on the effectiveness and the cost of the different approaches would enable policy makers and planners, as well as those responsible for their implementation, to improve the results by adopting approaches which are more effective in changing the behaviour of people.

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