

Sustainability of hygiene promotion and education: a six country research study

K. Shordt, Netherlands

Studies were undertaken in six countries to examine the sustainability of hygiene behaviours after water and sanitation projects had ended. The results of the three year study showed that hygienic behaviours are sustained two years and more years after the end of the intervention. The main behaviours studied were handwashing, latrine use and maintenance and safe water storage. Intervention variables related to gender, socio-economic status, access to water and duration of the intervention were also studied.

Introduction

Research has indicated that hygiene promotion, even in the absence of new construction, is associated with improved hygiene behaviours (Kanki, 2004). What is still largely not known is whether people continue new hygiene practices beyond a project intervention. Nor has there been much research to identify the particular aspects of an intervention that are associated with sustainable behaviours beyond the project period. However, this information can lead to more effective water, sanitation and hygiene interventions. In addition, to advocate, or to convince decision-makers about the importance of hygiene promotion, we need to know more about the extent to which hygiene behaviours continue after projects end.

Studies of behaviours can help answer questions such as:

- Did the hygiene promotion/education have an impact?
- What kinds of activities are most effective?
- Are new hygiene behaviours sustained in the household and community after the project ends?

To seek answers to these questions, a study was carried out in six countries over three years (2000 through 2003) by non-governmental organizations working in partnership.

Each one designed and undertook its own research work. The IRC International Water and Sanitation Centre (Netherlands) and London School of Hygiene and Tropical Medicine supported technically and helped with the analysis.

Tools and behaviours

The tools used to study hygiene behaviours varied somewhat reflecting the differences among the interventions in the six countries. However, these tools were used:

- Survey questions to measure knowledge of most important times, for good health, to wash hands

Table 1. Partner organizations in the research study

Country	Institutions
Ghana	VRWSP -Volta Rural Water Supply Programme
India	SEUF - Socio-Economic Units Foundation
Kenya	NETWAS International - Network for Water and Sanitation
Nepal	NEWAH Nepal Water for Health Organization
Uganda	WaterAid – Uganda
Sri Lanka	COSI- Community Self Improvement Foundation

- Latrine use and maintenance was measured in the following ways:
- Observations as to whether the latrine was constructed well, shows signs of use, is clean and maintained.
- Pocket voting to measure each person's consistent latrine use.

Sampling and analysis

Random sampling was done in Ghana, India and Sri Lanka. In the other countries a purposive selection was needed to identify a sufficient number of households having latrines. Details about the samples appear in Table 2 at the end of this paper. Data was analyzed on EXCEL sheets and with EPI/STATCALC programmes.

About sustainability of hygiene behaviours

The research data demonstrated that hygiene behaviours are sustained beyond the end of an intervention. One approach

to studying this was to compare the prevalence of behaviours between projects with different end dates, for example 1998 and 2000. If hygiene behaviours are not sustained, then it was reasoned that the behaviours would deteriorate over time. Therefore the behaviours in communities where the project ended in longer ago, in 1998, would be less prevalent than for those ending more recently, in 2000. For the studies in five countries, 25 comparisons were made between a particular behaviour and the end date of the project. The behaviours were: handwashing skills, person washes hands with soap and water, location of soap/water in household, latrine shows signs of use, person uses latrine consistently, latrine is maintained and clean, water covered/stored safely. The results show that in only 2 out of 25 comparisons were the hygienic behaviour more prevalent where the projects ended in 2000 than where the projects ended in 1998. Results are shown in Table 6.

A second test of sustainability was to compare changes in hygiene behaviours longitudinally, in surveys that were made in 2001 and 2002, about one year or more apart. If hygiene behaviours are not sustained then there would be a decrease from 2001 to 2002. The information was collected in four country studies. In seventeen cases a comparison was made of hygiene behaviour changes between the two data collection dates. In only one of the 17 comparisons was there a significant change over the one year period. This means that the hygiene behaviours did not decrease between the two years. The time between surveys did not make much of a difference; and therefore, hygiene behaviours seem to be sustained. In summary, evidence was found of the impact of hygiene promotion even several years after the interventions had ended.

Which variables are more important?

If hygiene behaviours continue after the end of an intervention programme, then it is logical to ask WHICH variables are more likely to lead to sustainability. To study this, comparisons were made between the hygiene behaviours of people and project/non-project variables.

Personal communication: In the Kenya study, people who said they had heard about latrines and handwashing from other trained women's groups and neighbours had significantly better handwashing practice ($p=0.037$, $OR=1.5$).

Attending meetings: In the Ghana study, women were asked: Can you mention hygiene promotion activities that have taken place in the last 3 months? The alternative answers included:

- hygiene promotion in the house by member of the water/sanitation committee,
- hygiene promotion in the house by the project field worker,
- community meetings to discuss hygiene issues

In the analysis, for 440 households are stratified by community it is interesting to see the strength of the association

Table 4. Ghana: Associations between hygiene promotion activities and hygiene behaviours

Table cell heading	Meeting in house water committee person	Meeting in house with field worker	Group meeting for hygiene
Safe water storage	P=0.005 OR=1.98 CI 1.23-3.22	P=0.003 OR=1.86 CI 1.21-2.89	P=0.015 OR=1.70 CI 1.09-2.98
Correct hand washing skills	P=0.00007 OR=2.63 CI 1.63-4.33	Not significant	P=0.0014 OR=2.25 CI 1.33-3.88

between meetings in the house of the voluntary water committee member who is from the community. This appears to be slightly stronger than meetings with the project field workers or group meetings in the community where hygiene is discussed.

Attending required hygiene classes: The India study showed that women who remembered hygiene education classes between 2 and 9 years later, were significantly more likely to

- have good handwashing practice ($p=0.007$, $OR=2.04$, $CI 1.05<OR<3.96$),
- knowledge that washing hands before eating is important for health reasons ($OR 2.9$, $CI 1.43-6.0$) and
- have household compounds that are clean, free of faeces and other waste ($OR 2.8$, $CI 1.22-6.6$).

This was not significant for men, as they did not usually attend the hygiene classes. The questions were asked of more than 400 women and more than 400 men.

Thus the results of the study demonstrated that hygiene promotion activities significantly related to new behaviours were those involving personal contact, group meetings and hygiene classes.

Other input variables

The studies examined several general programme variables to see if they might lead to greater sustainability of hygiene behaviours, specifically: duration of the intervention, access to water supply, education and socio-economic levels.

Duration

Interestingly, the duration of the intervention was not a predictor of behavioural outcomes in the Indian project where it was measured. Here staff suggested that rather than having a pre-determined duration, the project should last as long as needed to mobilize the community and its groups to carry out the work well. However, the duration of the intervention had some effect on the Nepal programme, the second country where it was measured. Communities which had

Table 2. Samples in the six-country study

Country	Institution carrying out research	Sample size
Ghana	VRWSP	2001: 10 communities. 220 Households, 20 schools 2002: 10 communities. 220 households, 20 schools
India	SEUF	2001: 3 communities 346 Households. In 2002: 10 communities 345 Households plus informant interviews
Kenya	NETWAS International	2001: 6 communities. 215 HH plus 6 women's groups 2002: 112 HH in 2002 + 6 women's groups plus one control group 29 schools
Nepal	NEWAH	6 communities. In 2001:77 HH. In 2002: 150 HH. In 2003: 242 HH plus focus group discussions
Uganda	WaterAid - Uganda	6 communities: in 2001: 221 HH. In 2002: 180 HH plus group and informant interviews
Sri Lanka	COSI	2001: 6 communities with 110 HH 2003: 6 communities with 150 HH
Source: Six Country Study		

Table 3. Testing Sustainability-Did hygiene behaviours change between two data collection periods? Samples in the six-country study

Countries where study tested this ↓	Years when data collected (surveys carried out)	HANDWASHING			LATRINES			Water covered/ stored safely
		HW skills (demonstration)	HW practice self-report	Location of soap + water in HH	Latrine shows signs of use	Latrine use is consistent-self-report	Latrine maintained	
KENYA	Is 2001 better than 2002?	Difference not significant (ND)	ND	Not tested, not applicable (n.a.).	ND	n.a.	ND	n.a.
NEPAL*	Is 2001 better than 2002?	ND	ND	ND	ND	n.a.	ND	ND
UGANDA	Is 2001 better than 2002? 2001 survey 2002 survey	Significant, p=0.045 OR=0.58 CI 0.33-0.99 42/86 (49%) 76/214 (35%)	n.a.	Significantly worse p < 0.001 0/178 (0%) 15/214 (15%)	ND	n.a.	Significantly worse p=0.02 OR=1.90, CI 1.10-3.31 76/139 (55%) 84/120 (70%)	n.a.
GHANA	Is 2001 better than 2002? 2001 survey 2002 survey	Significantly worse; p<0.009 116/220 (53%) 144/220 (65%)	n.a.	Difference not significant	n.a.	n.a.	n.a.	ND
Source: six-country research study								

a two year intervention performed better than those with one-year intervention but only in two elements of domestic hygiene: (a) covering food ($p < .009$) and in handwashing skills ($p < .022$).

Access

All six country studies compared access to water supply with project outputs. The results indicate that just providing water is not enough to change behaviours, as there were no significant links between access to water and hygienic behaviours. Perhaps this has implications for the MDGs.

Education level of women

In two countries where it was measured, the education of women was related to hygiene practices. Women with more education tended to have healthier behaviours. In the Kenya study, women with more education were more likely to have handwashing knowledge, better skills and practice as well as consistent latrine use. The difference between women with more and less education was significant in all cases ($p < 0.02$). In Nepal, women with more education tended to demonstrate better handwashing skills and location of soap conveniently for handwashing in the household (in both cases $p < 0.01$). This means more educated women do better in adopting hygienic practices.

Gender and socio-economic status

For men in the India study, neither latrine use nor reported handwashing practice were significantly linked to the hygiene promotion activities. This means that the project seemed to have little impact on the habits of handwashing or latrine use by males.

The socio-economic status of the community (as rated by the project staff and the government) was closely linked to latrine use by men, but not women. This implies that men who lived in richer communities were more likely to use the latrine consistently. They are more likely to wash hands consistently if they live in richer communities. In the Indian project, women were more involved in hygiene promotion activities than men. So it appears that there is a gender issue here.

The researchers have suggested that if the hygiene (and community) intervention is more intensified with a strong gender and poverty focus, then the impact of programme variables such as gender, education and poverty would be weaker. Thus it is suggested that this type of information (Do educated women do better? Are only women involved in hygiene activities?) may help assess the extent to which an intervention has reached all the people and the poorest households.

In summary, it is not inevitable that behaviours will fade or that as years go by people will revert to earlier, less hygienic practices. However, in water and sanitation programmes, continued access to services is not enough to sustain hygienic behaviour. It is the so-called “software” aspects of the programme are more important. Thus hygiene promotion

and education should not be low-visibility “add-ons” to water and sanitation programming. Sustained behaviours result from giving high priority and adequate resources to hygiene promotion and education.

Project variables determine hygiene behaviours. This includes: intensity of the programmes, support from influential groups in the local community, attendance in hygiene classes, training.

Acknowledgements

Support for the study was provided by the European Commission and the Netherlands Directorate General for International Co-operation, whose support is gratefully acknowledged.

Professor Sandy Cairncross of the London School of Hygiene and Tropical Medicine originally developed the strategy for analysis, conclusions and some of the data. However, any errors are solely the responsibility of the author.

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Contact address

Kathleen Shordt
Senior Programme Officer
IRC International Water and Sanitation Centre
Westvest 7
Delft, Netherlands
