

Sustained improvements in hygiene behaviour amongst village women in Lombok, Indonesia

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Abstract

Fifty-seven mothers in Indonesia were involved in a face-to-face health education programme which encouraged hand-washing with soap. The intervention spanned 4 months and comprised fortnightly visits by 2 community organizers, who supplied free soap. Two years after the intervention, 79% of mothers were still using hand soap, despite the fact that they now had to buy it themselves. The community seemed to be benefiting from a sustained reduction in diarrhoea episodes due to improved hygiene practices.

Introduction

Hand-washing reduces the transmission of diarrhoea-causing pathogens (BLACK *et al.*, 1981; KHAN, 1982). It also helps to prevent the transmission of respiratory syncytial virus (ISAACS *et al.*, 1991). It should therefore be encouraged as part of any tropical health education programme since it will help to reduce the prevalence of 2 major causes of morbidity and mortality in children. This paper reports a small programme of simple health education which has achieved sustained improvements in hygiene behaviour and also, apparently, a substantial decline in childhood diarrhoea.

During the first part of 1990, 2 community organizers (COs) worked with 65 mothers of children under 11 years of age who lived in Balai Lua, Central Lombok, Indonesia. This village had had chlorinated water supplies to communal taps for the previous 3 years. The COs aimed to reduce faecal-oral spread of disease organisms by giving out hand soap and a plastic soap box. Through informal discussion they also encouraged women to wash their hands and those of their children after defaecation and before contact with food. Wherever the COs noticed that children's faeces had been deposited near houses, they encouraged mothers to clear them away promptly. For 4 months, ending in August 1990, the COs made fortnightly visits to the village. During these visits, which lasted 2 or 3 d, they replenished soap, recorded morbidity information and reinforced the health messages. After this period of intervention, mothers volunteered enthusiastic support for the programme; they stated that since they had been using soap, childhood diarrhoea had become a rarity and their children had grown fat. This subjective evidence was supported by a fall in diarrhoea prevalence by 89% compared to a period before the intervention began and by 57% compared to a neighbouring control village (WILSON *et al.*, 1991).

After 4 months, visits by the COs and the supply of free soap ceased. Soap continued to be readily available in local kiosks and shops, however. A mass health education campaign (promoting better hygiene practices and encouraging breast feeding) using posters, calendars and radio broadcasts was begun in Central Lombok at this time.

Nearly 2 years later members of a foreign mission to the village (from the Australian International Development Assistance Bureau [AIDAB]) gained the impression that the health benefits and improved hygiene practices had been sustained. Mothers continued to talk about how healthy their children were and many said that they now regularly bought hand soap themselves. We mounted a formal follow-up survey to explore whether these impressions could be verified.

Method

One of the 2 COs, who had been involved in the intervention phase in 1990, returned to Balai Lua during August 1992. Of the original 65 women who had been involved in the intervention phase, 6 had moved to other

parts of Lombok and 2 had received assistance through the government's transmigration programme to be relocated on neighbouring Sumbawa. The remaining 57 women were interviewed and so data were gathered on 246 family members, of whom 102 were children under 11 years of age. This population of children was slightly different to the 1990 population surveyed since new babies had been born and children who had reached their eleventh birthday had left the cohort. The new cohort was of slightly different structure, therefore, and had fewer mothers of single children than the 1990 cohort. No climatic data were available for this part of Central Lombok, but there were no unseasonal weather events noted during the 2 periods of study. All data were collected during dry seasons.

The surveyor did not know the prime purpose of the interview; she was encouraged to believe that it was to document disease episodes and to explore how well women had remembered the health messages that she had presented 2 years previously. Mothers were asked about any recent illness in the family and specifically if anyone had suffered from diarrhoea (i) during the last week and (ii) during the week before. Recall of disease episodes occurring more than a fortnight previously is said to be unreliable (MARTORELL *et al.*, 1976). They were also asked if anyone had suffered from fever, respiratory disease, eye or skin infections during the previous 2 weeks. In addition they were questioned about hygiene knowledge and practices; finally, a check was made to see whether there was any hand soap available at the washing place.

Results and Discussion

Hygiene behaviour

Villagers always rinsed their hands with water before eating; however, before the intervention, none routinely used soap at that time (Table). Immediately after the intervention, however, all informants claimed to do so. Two years later, most women (94%) claimed to use soap when they washed their hands before eating although only 79% could show soap to the interviewer; a further 5% claimed that they were about to buy more soap. Many informants commented that they had to keep soap inside the house (rather than at the washing place), otherwise it would be stolen. Mothers reported that a bar of local OK[®] soap lasted the average family (4 in this sample) 2-4 d.

Table. Percentage of 57 mothers reporting using soap to wash their own or their children's hands

	Before intervention	After intervention	At follow-up after 2 years	
			Always	Sometimes
After defaecation*	0	92	56	43
Before cooking	26	60	41	52
Before eating	0	100	94	6
Children's hands before eating	0	97	73	13

*Many of these villagers were without latrines and defaecated in the river. Carrying soap to the river at this time was not always practicable.

Disease prevalence

The prevalence of diarrhoea in Balai Lua in this follow-up survey was equivalent to one episode of diarrhoea/100 children/week. This was less than that in the pre-intervention phase (3/100/week), but more than the rate immediately after the intervention (0.33/100/week). The diarrhoea rate in August 1992 was also lower than that in a neighbouring control village, where it had been 1.9/100 children/week over 20 weeks during the same season in the 1990 study period.

Diarrhoea rates seemed to be inversely related to reported soap use; when mothers claimed maximal soap use (immediately after the intervention), the diarrhoea rate was at its lowest. A lesser number were using soap at the 2 years follow-up, and this was associated with an intermediate diarrhoea rate.

It is likely that the improved hygiene practices contributed to the continuing low prevalence of diarrhoeal disease. However, since the period of reporting was short and there was no simultaneous disease information available for control populations, it is impossible to be sure that this was not a chance effect.

Knowledge

None of the informants remembered having acquired any hygiene information from posters, radio or other outside sources; the COs were the only information source they could recall. Yet ideas about infection had changed since the mothers' last contact with the COs 2 years previously. Initially, one-quarter of the women associated diarrhoea with dirt. Even after the period of health education, none mentioned that diarrhoea was acquired from dirty hands. However, the initial intervention gave women the opportunity to learn for themselves (at no cost) the benefits of hand-washing, so that they could test the validity of the health messages for themselves. This is likely to have been the impetus for the change in hygiene behaviour.

Two years later, however, 19% thought that diarrhoea was contracted from dirty hands. Mothers said that diarrhoea rates had been consistently low since they had adopted improved hygiene practices. If this were true, the original health messages would have been proved by personal experience and the women may have decided for themselves that buying soap was worthwhile. This

would help to explain why one-fifth of the women had acquired a much better understanding of the health reasons for hand-washing and why women then chose to buy hand soap.

Conclusion

This study showed that face-to-face health education involving very simple messages can be effective and sustainable. The method is relatively labour-intensive, but it is still probably the best means of achieving sustained improvements in health in a largely illiterate, underprivileged population.

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