

Evidence of behaviour change following a hygiene promotion programme in Burkina Faso

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Objectives To determine whether a large, 3-year hygiene promotion programme in Bobo-Dioulasso, Burkina Faso, was effective in changing behaviours associated with the spread of diarrhoeal diseases. The programme was tailored to local customs, targeted specific types of behaviour, built on existing motivation for hygiene, and used locally appropriate channels of communication.

Methods Two population surveys recorded the coverage of the programme among target audiences (mothers of children aged 0–35 months). Four surveys were carried out: three prior to the programme and one in 1998 (after the programme had been running for 3 years), using structured observation of hygiene behaviours in the participants' homes to document changes in target behaviours.

Findings After the programme had run for 3 years, three-quarters of the mothers targeted had had contact with programme activities. Half could cite the two main messages of the programme correctly. Although the safe disposal of children's stools changed little between 1995 and 1998 (80% pre-intervention, 84% post-intervention), hand-washing with soap after cleaning a child's bottom rose from 13% to 31%. The proportion of mothers who washed their hands with soap after using the latrine increased from 1% to 17%.

Conclusion Hygiene promotion programmes can change behaviour and are more likely to be effective if they are built on local research and use locally appropriate channels of communication repeatedly and for an extended time.

Keywords Handwashing; Toilet facilities; Hygiene; Health promotion; Diarrhea/prevention and control; Data collection; Burkina Faso (*source: MeSH*).

Mots clés Lavage mains; Toilettes publiques; Hygiène; Promotion santé; Diarrhée/prévention et contrôle; Collecte données; Burkina Faso (*source: INSERM*).

Palabras clave Lavado de manos; Baños públicos; Higiene; Promoción de la salud; Diarrea/prevención y control; Recolección de datos; Burkina Faso (*fuentes: BIREME*).

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Introduction

Health promotion programmes attempt to induce changes in health-related behaviour to prevent

disease. Although health promotion is a tenet of many health programmes, doubts remain about its effectiveness. A review of over 500 articles on health education in developing countries that were published in 1987 found only three with satisfactory evidence of behaviour change or an impact on health (1). We have found only three articles that were published since 1987 with good evidence that the programmes had made an impact on behaviour or health in developing countries (2–4). It is therefore not surprising that policy-makers question whether it is appropriate to use scarce resources for health promotion in developing countries. Designing health promotion programmes on the basis of local practices and culture has long been advocated (5), but the absence of concrete examples demonstrating the feasibility and effectiveness of such approaches may have discouraged their use.

Diarrhoea is responsible for the death of over 3 million children a year (6). The group of diarrhoeal diseases is one that responds readily to changes in human behaviour since simple hygiene measures are

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theoretically capable of stopping most, if not all, transmission of the infectious agents. Feachem's review of the evidence for the effectiveness of interventions for the prevention of diarrhoea in children, published in 1984, concluded that the promotion of personal and domestic hygiene had high potential for effectiveness and was highly feasible (7). Although hygiene promotion has subsequently figured in most programmes to control diarrhoeal disease and in water and sanitation programmes throughout the developing world, convincing evidence for its effectiveness remains scarce (2, 8).

In this paper we present findings from Programme Saniya, a hygiene promotion programme carried out between August 1995 and July 1998 in the town of Bobo-Dioulasso, Burkina Faso, West Africa.

Methods

Setting

Bobo-Dioulasso is the second largest city in Burkina Faso and lies on trading routes between Côte d'Ivoire, Ghana, Mali, and Niger. The largest of the many indigenous ethnic groups are the Bobo and Bwaba, now outnumbered by the more recently arrived Mossi. The lingua franca is Dioula, the market language spoken by almost all women and a majority of men. Residential space is divided into compounds in which the houses of several families share a central courtyard. Public water supplies are well managed and generally reliable except in the fastest growing areas of new settlements. Building plots are allocated by local authorities, and construction of a latrine is mandatory when land is used for building. These latrines are generally simple pits with concrete floor slabs and solid walls, and they often double up as, or share a space with, washing cubicles. In some older sectors of the town poorly maintained latrines flow into open street drains. Box 1 describes the town's characteristics.

Planning the intervention

During the period 1989–94, a number of studies of childhood diarrhoea in Burkina Faso were conducted using both quantitative and qualitative methods (10–13). From the findings of this formative research we developed a strategy to promote safer hygiene practices, based on the existing local motivation for hygiene and appropriate channels of communication to reach the target groups. Box 2 describes the characteristics of the resulting programme (Programme Saniya).

The small number of practices targeted reflected the behaviours that we had identified as having the highest risk of transmitting diarrhoeal pathogens and our decision to concentrate on only a few messages, repeatedly, and in many forums (1). Behaviour trials were carried out in one sector of the town over 6 months with 40 mothers who volunteered, to ensure that the practices targeted were acceptable and feasible in this setting.

Target groups. The primary groups targeted for the intervention were mothers, older sisters, and "maids" (young girls who help with housework) — the principal carers of young children in Burkina Faso (10). However, it became clear from the behaviour trials that school-aged children were also keen to participate and, as a result, a curriculum for primary schools was added to the programme. Secondary target groups were those in the immediate social circle of the primary audience, e.g. mothers-in-law, fathers, and neighbours, who might influence the primary groups. A tertiary target group of opinion leaders, decision-makers, and people who could potentially provide funds for the programme was also identified during formative research.

Message content. The content of the messages was designed in the light of the findings of the qualitative research, which suggested that hygiene was desired by mothers, not for the sake of avoiding diarrhoea, but for aesthetic and social reasons. Messages were thus built around the idea of the

Box 1. Characteristics of Bobo-Dioulasso, Burkina Faso

| | |
|------------------------|--|
| Population | 309 771 in 1996 (9); growing at an estimated 6.5% per year. |
| Main population groups | Mossi, Bobo, Bwaba, Peulh, Senoufo, Dagara, Bambara. |
| Languages | Dioula, Moré, Bobo, Fulfuldé, French. |
| Employment | Unemployment in men is high, much employment is informal. About 60% of women have a formal or informal paid occupation. |
| Family structure | Traditionally patrilineal, extended families live in shared compounds. Increasing proportions of recently arrived nuclear families rent buildings in shared compounds. About 30% of women live in polygamous households. |
| Local government | 25 administrative sectors; a municipal council run by an elected mayor. |
| Water sources | Tap in compound: 31% Public standpipe outside compound: 44% Private open well in compound: 19% Public open well outside compound: 6% |
| Sanitation | 91% of compounds had latrines. |
| Health services | 13 public health centres, 13 private clinics, 1 tertiary referral hospital; thriving traditional health sector. |

Box 2. Key features of Programme Saniya, Bobo-Dioulasso, Burkina Faso

| | |
|---|---|
| Main messages | <ul style="list-style-type: none"> • Hands should be washed after contact with stools • Stools in potties should be disposed of safely in latrines |
| Primary target groups | <ul style="list-style-type: none"> • Mothers of children aged 0–35 months (estimated to be 40 000 women) • "Maids" and others carers of children aged 0–35 months (estimate: 15 000) • Children of primary-school age (estimate: 20 000) |
| Motivation for behaviour change presented to participants | <ul style="list-style-type: none"> • Mothers: hygiene is socially and aesthetically desirable • Children: hygiene is socially desirable and avoids diarrhoea germs |
| Channels of communication | <ul style="list-style-type: none"> • Neighbourhood hygiene commissions with house-to-house visits • Discussion groups in health centres and in the community • Street theatre • Local radio spots and programmes • Hygiene curriculum in primary schools |

respect they might gain from being hygienic, and the improvements gained in quality of life when faecal material was removed and could therefore not be seen or smelt. Although the germ theory of disease did not figure in messages aimed at adults, it did form a part of the hygiene curriculum for schools.

Channels of communication. Focus group discussions and a small, population-based questionnaire survey were used to identify local channels of communication suitable for specific target groups. Although local radio was listened to regularly by two-thirds of mothers, it was decided that face-to-face domestic visits would also be needed, as others who cared for children had little exposure to any type of communication except word of mouth.

The results of the formative research were summarized in a booklet which was used by the Ministry of Health in a series of workshops held with representatives of partner agencies and community groups, such as women's organizations, to plan the intervention. Support materials were designed by teams and involved local artists and writers. These were tested, evaluated, and refined in the pilot programme.

Intervention process: Programme Saniya

The programme was christened Programme Saniya (*saniya* means cleanliness in Dioula) and was launched with a municipal ceremony, a mass clean-up of public spaces, and a phone-in on local radio in August 1995. The intervention had a number of components. Monthly house-to-house visits were carried out by community volunteers who had been trained in communication and hygiene after selection by the neighbourhood at a *djandjoba* (an event with music and dancing). The neighbourhood teams were designated "Saniya commissions". Health-centre staff were trained in participatory discussion techniques and added a discussion on Programme Saniya to their normal programme of talks at the health centre. Community volunteers also organized meetings in their neighbourhoods with the support of health-service staff.

A youth theatre group created a comic play about the social value of cleanliness and avoiding

contact with stools. The play was performed once a week in streets around the town, attracting substantial audiences. A set of 12 comic radio spots with an evolving story was developed and tested before being broadcast on the three local radio stations in Dioula, Moré, and French at peak listening times for women.

A curriculum and materials for six primary-school hygiene lessons were developed in workshops led by school inspectors with teachers, health agents, and project staff. The teachers were then trained and provided with lesson guides and a series of six posters. Participating schools also received a starter box of soap and two buckets for each class to enable children to wash their hands after using the latrine.

Interventions began in the central zones of the town in August 1995 and they spread outwards over the 3 years of the programme.

Outcome measures

Field activities were monitored in a variety of ways. Five project workers accompanied community volunteers in a rotating programme of home visits and reported on theatre activities. Health centres completed forms that recorded their activities and volunteers listened to a sample of broadcasts from local radio stations. Primary-school inspectors made visits to monitor progress.

The population coverage of the programme was evaluated in December 1996 and in July/August 1998. A household survey of target audiences was carried out using cluster sampling. The first survey included only the central zones of the town where the intervention was initially concentrated; the final survey covered both inner and outer sectors. A number of measures of coverage were employed including awareness of the programme's existence, having had domestic visits, having attended programme activities, and being able to recall the main messages of the programme.

The behaviour change objectives of Programme Saniya were defined to provide quantitative targets, described in Box 3. Randomized controlled trials are not generally suitable for evaluating large programmes that use the mass media. In such circumstances the use of time-series designs has been advocated (1). Since two separate observational

studies of the practices of interest had been carried out as part of our earlier work in 1990–91 and 1993–94, this approach was adopted. Observational surveys, using the same methods, were carried out (in June–July 1995) just before the start of the intervention (Aug. 1995) and then again 3 years later (June–Aug. 1998). Details of the observational methods used and an assessment of their repeatability have been published elsewhere (10, 14). Briefly, structured observations of young children and their carers, using a pre-coded form to record the particular practices of interest, were performed over a 3-hour period between about 06:00 and 09:00.

Sampling for the observational studies in 1995 and 1998 was performed by randomly selecting streets in nine randomly selected administrative sectors of the town. Every third compound was visited, and the first woman with a child younger than 36 months in a house chosen clockwise from the compound entrance was selected for observation. The number of mother–child pairs and the median ages of the children observed in each survey are shown in Table 1. Three families refused to take part in each of the 1995 and 1998 surveys.

Sample size and statistical methods

A total of 190 observations were required to detect a change in the proportion of occasions in which children defecated into a potty, from a baseline of 74% to a target of 85%, with a power of 90% and a significance level of 95%. Allowing for the fact that only 60% of children were expected to be seen defecating during the observation period, and an estimated design effect of 1.6 arising from cluster sampling, the total number of observations required was about 500 (15).

Data analysis was performed using Stata software versions 5.0 and 6.0 (16). Analyses of behaviour–outcome measurements were performed using logistic regression controlling for the age of the child. The Huber–White sandwich estimator (17, 18), which takes account of cluster sampling, was used to obtain robust standard errors for the estimates of the impact of the intervention, and *P*-values. Three analyses were performed. Firstly, the post-intervention data (1998) were compared with data from all three pre-intervention surveys combined (1990–95). Secondly, the post-intervention data (1998) were compared with data obtained just prior to the implementation of the intervention (1995). Thirdly, a model was fitted which included a linear trend in the log odds of each behaviour over time, and in addition an indicator variable distinguishing the post-intervention survey (1998) from the pre-intervention surveys (1990–95).

Results

Programme activities

Table 2 summarizes the activities of Programme Saniya over the 3 years. Although the programme began well, recurring funding difficulties reduced

Box 3. Objectives of Programme Saniya

The objectives of the programme were to:

- increase the percentage of children (0–35 months of age) who defecated into a potty from 74% to 85%;
- increase the proportion of occasions in which children's stools were disposed of in a latrine from 80% to 90%;
- increase the proportion of occasions in which mothers washed their hands with soap after cleaning a child's bottom from 13% to 30%;
- increase the proportion of occasions in which mothers used soap to wash their hands after using the latrine from 1% to 15%.

activities in the second and third years to below half of what had originally been planned and led to some stopping and starting of activities. In addition, community volunteers and health-centre staff began with a high level of motivation, but this declined when it became clear that they would not be remunerated. The programme activities in schools proved more sustainable, and even without additional funding they continued to be very popular with staff and parent–teacher associations.

Coverage

The results of the coverage surveys are shown in Table 3. Coverage did not improve greatly after the first year of activities (1996). By the end of the three years about half of all mothers of children aged 0–35 months could cite the two main messages of the programme correctly (how to dispose of stools safely and the need to wash hands with soap after contact with stools).

Radio had the highest apparent coverage: radio spots were recalled by 60% of mothers surveyed throughout the town.

Saniya community volunteers were highly motivated in the first year of the programme and then their household visits tailed off (data not shown). Nevertheless almost half of mothers in the zones with Saniya commissions could recall being visited by a programme volunteer. Less than 20% of mothers reported having attended a Saniya theatre presentation or having heard about the programme in a health centre.

Behaviour change

Table 1 shows the frequency of the target behaviours observed during each of the four surveys and Fig. 1 charts their evolution over 8 years using data from the three surveys carried out before the programme was introduced and the final survey after the programme had run for 3 years. After the 3 years of intervention, 82% of children observed used a potty; this was below the specified target of 85%. The use of latrines for disposal of stools had changed little from the level identified before the intervention and remained below the target of 90%. The data suggest that after the start of the programme there was a major upturn in hand-washing with soap. After the programme, 31% of mothers were observed using soap after handling children's stools compared with 13% before

Table 1. **Summary of observational surveys**

| Observation | Dates of surveys | | | |
|---|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | Pre-intervention | | | Post-intervention |
| | July 1990– Apr. 1991 ^a | July 1993– Jan. 1994 ^a | June 1995– July 1995 ^b | June 1998– Aug. 1998 ^c |
| No. of children defecating | 277 | 107 | 306 | 289 |
| No. of children defecating into a potty | 183 (66) ^d | 74 (69) | 225 (74) | 236 (82) |
| No. of children whose stools were disposed of in a latrine | 154 (66) ^e | 76 (83) ^e | 220 (80) ^e | 229 (84) ^e |
| No. of times the child's bottom was cleaned | 256 | 104 | 259 | 275 |
| No. of times mother's hands were washed with soap after cleaning the child's bottom | 22 (9) | 13 (13) | 33 (13) | 86 (31) |
| No. of mothers using latrine | 208 | 90 | 206 | 199 |
| No. of times mothers washed hands with soap after using latrine | 0 (0) | 1 (1) | 3 (1) | 34 (17) |
| No. of mother-child pairs | 549 | 213 | 506 | 616 |
| Median age of child (months) | 12 | 17 | 16 | 15 |

^a Surveys done independently of Programme Saniya.

^b Baseline survey done before programme began.

^c Final survey of programme.

^d Figures in parentheses are percentages.

^e The denominator is the number of children for whom stool disposal was observed. This is less than the total number of children seen defecating, because for some children the stools remained (e.g. in the potty) at the time the observation had finished.

Table 2. **Extent of activities of Programme Saniya**

| Activities | Year 1 1995–96 | Year 2 1996–97 | Year 3 1997–98 | Total |
|--|-------------------|-------------------|--------------------------|----------------------|
| No. of sectors where neighbourhood commissions established | 6 | 13 | 15 | 11 |
| No. of volunteers trained | 80 | 13 | 15 | 108 (50 retained) |
| No. of health centres joining programme | 3 | 2 | 3 | 8 |
| No. of health agents trained | 10 | 6 | 10 (plus 8 replacements) | 34 |
| No. of theatre presentations | 22 | 22 | 38 | 82 |
| No. of radio spots transmitted: | | | | 2580 |
| Station A | 170 | 300 | 430 | 900 |
| Station B | 240 | 420 | 600 | 1260 |
| Station C | 0 | 0 | 420 | 420 |
| No. of primary schools given soap and buckets | 17 | 17 | 30 | 64 |
| No. of primary-school teachers trained | 159 | 151 | 126 | 436 |

the intervention. The proportion of mothers who washed their hands with soap after using the latrine rose from 1% to 17%. The proportion of mothers

using water but no soap to wash their hands — although not a target practice — doubled over the study period, increasing from 35% to 74% after

Table 3. Coverage surveys of Programme Saniya

| Indicator | % of mothers reporting contact with programme | | |
|--|--|--|--|
| | Dec. 1996 ^a (n = 179) ^c | July 1998 ^a (n = 376) ^c | July 1998 ^b (n = 614) ^c |
| Recalled hearing of Programme Saniya | 77 | 67 | 60 |
| Could cite the programme's two main messages | 56 | 45 | 48 |
| Heard information on radio | 59 | 60 | 60 |
| Recalled a visit from a programme volunteer | 53 | 47 | 31 |
| Saw Programme Saniya play | 19 | 18 | 12 |
| Heard about the programme in a health centre | 18 | 14 | 12 |
| Any contact with programme activities | 82 | 81 | 74 |

^a Central zones only.

^b All sectors.

^c Total number of mothers surveyed.

cleaning children and from 33% to 67% after using the latrine (data not shown).

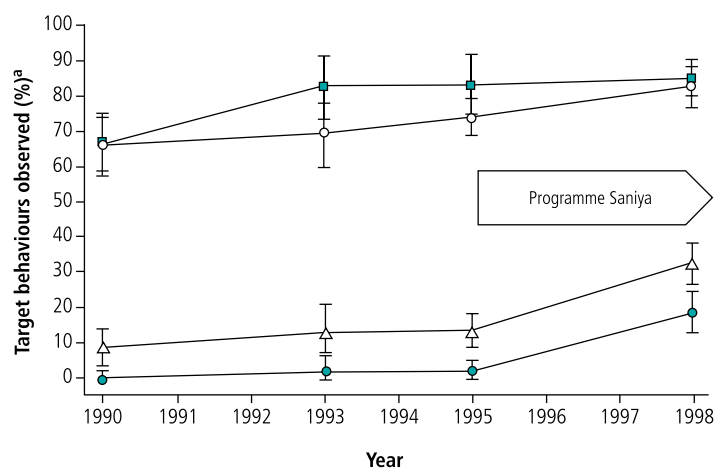
Table 4 shows the odds ratios and 95% confidence intervals for the changes in target practices observed in the survey just prior to the programme and that after the programme had run for 3 years, and between the combined results for 1990–95 and 1998. We controlled for the age of the child using logistic regression with robust standard errors adjusted for clustering by sector of the town. When the results for 1995 were compared with those for 1998 there were statistically significant changes in all of the target practices except disposal of stools in a latrine. Changes were highly significant for all practices when the results for 1990–95 were combined and compared with the final values in 1998.

However, these analyses do not distinguish between any pre-existing upward trends in the target practices and the impact of the intervention. Table 4 also shows the deviation of the 1998 results from any underlying trend in previous years. After allowing for underlying trends, there remained some evidence that the frequency with which mothers washed their hands with soap after cleaning the child's bottom increased after the intervention. There was no evidence of a change in the frequencies with which children defecated into potties or with which children's stools were disposed of in a latrine. Although the largest relative behaviour change appeared to be in mothers washing their hands with soap after using the latrine, we were unable to demonstrate a change from the underlying trend. This may reflect an inability to estimate the underlying trend prior to the intervention because of the small number of mothers who washed with soap before the intervention.

Discussion

Programme Saniya lasted for 3 years and was extended for a fourth year with the support of

Fig. 1. Changes observed in target behaviours in Bobo-Dioulasso



^a Bars represent the 95% confidence intervals for each estimate.

○ Potty used by child for defecating.

■ Child's stools disposed of in latrine.

△ Mother washed hands with soap after cleaning the child's bottom.

● Mother washed hands with soap after using the latrine.

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donors. Parts of the programme, such as the curriculum for schools and local Saniya commission activities in one well-organized sector of the town, appeared to be sustainable without further external funding. Other parts of the programme, such as the radio spots and theatre performance, did not. A report on the cost-effectiveness of the programme is forthcoming.

Limitations of the programme

An intervention trial should normally be composed of several communities receiving the intervention and several concurrent control communities (19, 20). This was not feasible in our setting because our

Table 4. Odds ratios for the occurrence of target behaviours post intervention

| Survey data | Target behaviours | | | |
|---------------------------------|---|---------------------------------------|---|---|
| | Child defecated into a potty | Child's stools disposed of in latrine | Mother washed hands with soap after cleaning child's bottom | Mother washed hands with soap after using latrine |
| 1990–95 vs 1998 | 1.79 (1.33–2.42) ^a <i>P</i> < 0.001 | 1.61 (1.12–2.30) <i>P</i> = 0.01 | 3.81 (2.57–5.64) <i>P</i> < 0.001 | 25.4 (8.07–80.0) <i>P</i> < 0.001 |
| 1995 vs 1998 | 1.58 (1.12–2.23) <i>P</i> = 0.009 | 1.26 (0.83–1.91) <i>P</i> = 0.27 | 3.15 (1.87–5.33) <i>P</i> < 0.001 | 14.4 (3.48–59.5) <i>P</i> < 0.001 |
| Deviation from underlying trend | 1.41 (0.84–2.34) <i>P</i> = 0.19 | 0.79 (0.42–1.47) <i>P</i> = 0.45 | 2.22 (1.03–4.79) <i>P</i> = 0.04 | 1.74 (0.11–28.7) <i>P</i> = 0.70 |

^a 95% confidence intervals are shown in parentheses.

community-based intervention used the mass media. The availability of data from several time-points before the introduction of the intervention led us to adopt a before-and-after, time-series approach.

Our data were obtained by direct, structured observation. This approach has limitations as a method of obtaining data about human behaviour. It is expensive and intrusive, and the presence of an observer can influence the behaviours being studied, especially if the participant knows what is being observed. However, no perfect method of measuring hygiene behaviour exists, and we believe that structured observation was the best available option for our setting. This method is certainly more valid than relying on verbal reports of behaviour for practices as morally loaded as personal hygiene. Questionnaires consistently over-report “good” behaviour practices and have limited validity in Africa, as elsewhere (10, 14, 21).

Our data indicate that the frequency of the hand-washing practices promoted in Bobo-Dioulasso improved substantially concurrently with the intervention. Our data show a statistically significant improvement beyond the pre-existing upward trend for hand-washing with soap after cleaning a child's bottom. The proportion of mothers washing their hands with soap after using the latrine also increased dramatically, from being almost non-existent prior to the intervention to 17% after the intervention. While we cannot formally exclude the possibility that such changes might have taken place independently had Programme Saniya not been implemented, we believe that these changes are due, at least in part, to the programme. Achieving such substantial behaviour changes over such a short period of time generally requires intensive promotional work. There was no other significant activity addressing hygiene in the town during the study period and there was a limited amount in the national media — some having been generated by the programme.

A major concern in interpreting these increases is that while mothers were not told of the reason for the observations, by the time of the last survey they

may have heard enough about the aims of the programme to make a particular effort to demonstrate “good” behaviour: thus, the behaviour change effected in mothers by Programme Saniya may have occurred because of the presence of an observer. To minimize such an effect, new observers with no connection to the programme were employed for the last round of observation, and they gave an explanation for their presence that did not link them to the programme. We cannot exclude the possibility that the increased frequency of hand-washing with soap observed after the intervention may reflect, at least in part, a heightened awareness that such behaviour is desirable rather than a change in daily practice. Nevertheless, such an explanation would imply, at the very least, that the programme had had an impact on mothers' perceptions of socially desirable behaviour, even if these altered perceptions have yet to lead to concrete changes in behaviour.

We found no evidence of a change in the frequencies with which children defecated into potties or with which children's stools were disposed of in a latrine. This is not surprising given that the recommended practices were already common in the population while hand-washing with soap was relatively rare. In general it is easier to demonstrate convincing changes when starting from a low base. People resistant to change may belong to a different target group that requires different promotional strategies.

Hygiene promotion: a systematic approach

The lack of good evidence for the impact of hygiene promotion programmes in general may be due to one of several factors. Firstly, no impact can be expected if a programme is poorly conceived. Secondly, a well-conceived programme is unlikely to have a measurable impact if the programme activities are inadequate or continue for an insufficient length of time. Thirdly, difficulties in measurement may lead to a failure to demonstrate an impact. We discuss each of these points further here, with specific reference to Programme Saniya.

Devising a programme. A health promotion intervention has to be properly conceived and preferably based on detailed research about local practices, motivation, and facilities (22–24). Research done before Programme Saniya was extensive and was later distilled into a protocol for preliminary research to assist with hygiene promotion interventions elsewhere (25). Key questions were formulated and then answered using a mix of qualitative and quantitative methods. The questions included: what are risk practices? Who are the target audiences? What could motivate a change in hygiene practice? Which channels of communication are adequate and suitable for hygiene messages? Extensive testing was used while the programme was being designed to ensure that strategies and materials were appropriate for the setting.

Executing a programme. However well-designed a programme, the results can only be as good as the quality of its execution. If messages are not delivered often enough, through enough channels, and in an attractive and attention-arresting manner for long enough, measurable behaviour change will not follow. Programme Saniya nearly fell at this hurdle: project activities ran at a level below half of what had been planned when the programme was conceived. It is perhaps surprising that such a stop-and-start programme appeared to have had any impact. Nonetheless, the use of locally acceptable and repeated messages delivered through multiple channels of communication does appear to have been sufficient to induce some behaviour change. As has been suggested by other authors (26–29), hand-washing with soap may be a particularly acceptable and feasible practice to target.

A further problem with the implementation of Programme Saniya was the difficulty in ensuring that the agreed messages were delivered. Project staff and health agents had originally been trained in traditional health education approaches and readily reverted to teaching germ theory, rather than using the positive messages that had been identified in the preliminary research. Much monitoring and retraining was required to ensure that the programme retained its special character.

Evaluating a programme. If outcome measurement is poor then inappropriate conclusions may be drawn. Using standard epidemiological techniques to detect changes in diarrhoea rates and ascribing these changes to the intervention may be unrealistic.

Such studies may require major investment and offer confusing or inconclusive results (30). It is often hard or impossible to separate out the impact of the intervention from the background of other events, such as epidemics, climatic fluctuations, etc. Measuring behaviour is a more direct, immediate, and useful way of gauging impact (31). However, many practices of interest are private or morally loaded, and measurement has to be handled rigorously but sensitively if it is to produce useful results. The true measure of the success of Programme Saniya will be whether the change in behaviour is sustained in the long term.

Conclusions

Although good hygiene practices are theoretically capable of cutting most, if not all, instances of infection with pathogens transmitted by the faecal–oral route, bringing about changes in health-related behaviour is a complex and uncertain exercise. The lack of convincing studies and the disappointing nature of their results give cause for concern, but this study suggests that interventions to promote safe hygiene, which are carefully conceived, executed, and evaluated can give good results. Basing interventions on local practices and culture is feasible and effective. In particular, introducing hand-washing with soap after contact with stools is a simple, acceptable intervention with large, potential benefits (32). More and better quality evidence, as well as data about costs and long-term sustainability, is urgently needed to inform decision-makers about the role and importance of hygiene promotion in developing countries. ■

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Conflicts of interest: none declared.

Résumé

Mise en évidence de modifications des comportements après un programme de promotion de l'hygiène au Burkina Faso

Objectif Déterminer si un vaste programme de promotion de l'hygiène qui s'est étendu sur 3 ans à Bobo Dioulasso (Burkina Faso) a été efficace pour modifier les comportements associés à la propagation des maladies diarrhéiques. Le programme était adapté aux coutumes locales, ciblé sur certains types de comportements,

reposait sur une motivation de la population en faveur de l'hygiène et utilisait des canaux de communication appropriés à la situation locale.

Méthodes Deux enquêtes en population ont enregistré la couverture du programme parmi les publics cibles (mères d'enfants de 0–35 mois). Quatre enquêtes ont été

réalisées – trois avant le début du programme et une en 1998, soit au bout de trois ans – par observation structurée des comportements en matière d'hygiène au domicile des participantes, afin de recueillir des données sur les modifications des comportements visés.

Résultats Trois ans après le début du programme, les trois quarts des participantes avaient eu un contact avec ses activités. La moitié pouvaient citer correctement les deux principaux messages du programme. Bien que l'élimination hygiénique des selles des enfants ait peu changé entre 1995 et 1998 (80 % avant l'intervention et

84 % après celle-ci), le lavage des mains au savon après avoir nettoyé l'enfant après une selle est passé de 13 % à 31 %. La proportion de mères qui se lavaient les mains au savon après avoir utilisé les latrines est passée de 1 % à 17 %.

Conclusion Les programmes de promotion de l'hygiène peuvent modifier les comportements et seront probablement plus efficaces s'ils s'appuient sur des recherches locales et s'ils utilisent de façon répétée et prolongée des canaux de communication appropriés à la situation locale.

Resumen

Indicios de cambios comportamentales tras un programa de promoción de la higiene en Burkina Faso

Objetivo Determinar si un amplio programa de tres años de promoción de la higiene llevado a cabo en Bobo-Dioulasso (Burkina Faso) había logrado cambiar los comportamientos asociados a la propagación de enfermedades diarreicas. El programa se adaptó a las costumbres locales, se centró en comportamientos específicos, aprovechó el interés ya existente por la higiene, y empleó los canales de comunicación oportunos a nivel local.

Métodos En dos encuestas de población se registró la cobertura del programa entre las subpoblaciones diana (madres de niños de 0 a 35 meses). Se llevaron a cabo cuatro encuestas: tres antes del programa y una en 1998 (tras 3 años de funcionamiento del programa), usando métodos de observación estructurada del comportamiento higiénico en las viviendas de los participantes para documentar los cambios experimentados por los comportamientos de interés.

Resultados Tras 3 años de funcionamiento del programa, las tres cuartas partes de las madres en que se centraba el estudio habían tenido contacto con las actividades del programa, y la mitad podían citar correctamente sus dos mensajes principales. Aunque la frecuencia del uso de medios de eliminación inocua de las heces de los niños apenas varió entre 1995 y 1998 (80% antes de la intervención, 84% después de ella), la costumbre de lavarse las manos con jabón después de limpiar las nalgas del niño aumentó del 13% al 31%. La proporción de madres que se lavaban las manos con jabón después de usar la letrina aumentó del 1% al 17%.

Conclusión Los programas de promoción de la higiene pueden cambiar efectivamente los comportamientos y suelen ser más eficaces cuando se basan en investigaciones locales y aprovechan repetida y prolongadamente los canales de comunicación oportunos a nivel local.

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