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A health equity critique of social marketing: Where interventions have impact but insufficient reach

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ABSTRACT

Health interventions increasingly rely on formative qualitative research and social marketing techniques to effect behavioural change. Few studies, however, incorporate qualitative research into the process of program evaluation to understand both impact and reach: namely, to what extent behaviour change interventions work, for whom, in what contexts, and why. We reflect on the success of a community-based hygiene intervention conducted in the slums of Kathmandu, Nepal, evaluating both maternal behaviour and infant health. We recruited all available mother–infant pairs ($n = 88$), and allocated them to control and intervention groups. Formative qualitative research on hand-washing practices included structured observations of 75 mothers, 3 focus groups, and 26 in-depth interviews. Our intervention was led by Community Motivators, intensively promoting hand-washing-with-soap at key junctures of food and faeces contamination. The 6-month evaluation period included hand-washing and morbidity rates, participant observation, systematic records of fortnightly community meetings, and follow-up interviews with 12 mothers. While quantitative measures demonstrated improvement in hand-washing rates and a 40% reduction in child diarrhoea, the qualitative data highlighted important equity issues in reaching the ultra-poor. We argue that a social marketing approach is inherently limited: focussing on individual agency, rather than structural conditions constraining behaviour, can unwittingly exacerbate health inequity. This contributes to a prevention paradox whereby those with the greatest need of a health intervention are least likely to benefit, finding hand-washing in the slums to be irrelevant or futile. Thus social marketing is best deployed within a range of interventions that address the structural as well as the behavioural and cognitive drivers of behaviour change. We conclude that critiques of social marketing have not paid sufficient attention to issues of health equity, and demonstrate how this can be addressed with qualitative data, embedded in both the formative and evaluative phases of a health intervention.

Introduction

It is well established that many of the most intractable public health issues in poorer parts of the world could be prevented or ameliorated simply by changing people's behaviour: for example, hand-washing to prevent diarrhoea, bednets to protect against malaria, or condoms to stop the spread of sexually transmitted infections (Briscoe & Aboud, 2012). As highlighted in a recent special issue on behaviour change in developing countries (Aboud & Singla, 2012), the key to achieving improved health outcomes lies in designing interventions grounded in theoretical models of behaviour change, good quality evidence, and an in-depth understanding of the target audience.

However, changing people's behaviour is notoriously difficult to do and there remain remarkably few examples of truly successful, sustainable and cost-effective programmes (Higginbotham, Briceno-Leon, & Johnson, 2001). Many interventions are poorly theorised, often based on the premise that educating people about potential threats to health will be sufficient to motivate a change in risk practices. While this approach may result in changes in knowledge and attitude, there is little evidence to suggest it translates into actual behavioural change (Loevinsohn, 1990). As more sophisticated behavioural models have developed, it is clear that new approaches to changing behaviour are needed, for example to extend beyond rational, cognitive drivers of behaviour.

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It is here that social marketing potentially has much to offer. A dominant paradigm in health promotion, social marketing "promotes the voluntary behaviour of target audiences by offering benefits they want, reducing barriers they are concerned about, and using persuasion to motivate their participation in program activity" (Kolter & Roberto, 1989: 24). It moves away from traditional health education models that simply tell people what to do, towards an approach that seeks to 'sell' the behaviour in question by convincing the target audience that it provides a solution to a problem they believe is important, and/or offers them a benefit they value (Grier & Bryant, 2005: 323). The first step in this process is uncovering and understanding people's perspectives, preferences, and aspirations. As Curtis (2001: 76) asserted for hygiene prevention, 'health is not the only motivation for healthy behaviour; other goals may be far more important.' Identifying these other goals is a crucial part of discovering how best to promote novel social norms and behaviours.

Social marketing has been embraced by the public health community and widely utilised in low-income countries, particularly in relation to infectious disease control (e.g., sexual health, malaria, and hygiene). However, there remains a paucity of evidence regarding whether this approach is more effective than other types of behavioural intervention. Comprehensive and convincing evaluations of social marketing interventions undertaken in low-income countries are rare. Those that do exist tend to be narrowly focussed and exclusively quantitative in nature, relying heavily on sales data (e.g., condoms purchased) or self-reported changes in knowledge or behaviour (Price, 2001).

Intervention success is judged by many criteria: these include impact, reach, sustainability, cost effectiveness, acceptability, and equity. The process of evaluation is thus multi-dimensional, requiring a mixed-methods, 'qual-quant-itative' approach to fully capture all relevant dimensions of evidence. Careful and detailed qualitative research is at the heart of a social marketing approach: to identify what needs to be communicated, in what way, to whom, and through which channels in order to achieve a change in key behaviours (Biran et al., 2005: 213). But to-date, qualitative research is recognised as crucial only to the formative stages of intervention development; it is valued as a critical step in understanding how to shape and deliver a health intervention, but its importance beyond such *formative* stages is often overlooked.

In-depth contextual data in the *evaluative* stages are often conspicuously absent. When so many interventions are focussed on changing norms and behaviours, such limited qualitative analysis seems curious. It is now well recognised that "public health problems are embedded within a range of social, political and economic contexts" (Moffat, White, Mackintosh, & Howell, 2006: 28). Despite calls for the inclusion of qualitative data (Donnovan et al., 2002), few evaluations provide details on the implementation process or wider context that might be critical to its impact (Roen, Arai, Roberts, & Popay, 2006). Evaluations remain largely focussed on 'hard outcomes', with a paucity of qualitative work that seeks to capture local responses to intervention programmes. Nor has there been adequate exploration and critical reflection of the unintended consequences and potential harms that may arise from interventions (Kleinman, 2010), especially those that specifically aim to shift social norms.

In the field of behavioural health, researchers have thus accumulated expertise with respect to measuring attitudinal or behavioural change following a specific health intervention; however, they are often left with a 'black box' as to how exactly this was (or was not) achieved. Some key questions – what works, for whom, in what circumstances, in what respects, and how (Pawson & Tilley, 2006) – often remain poorly answered.

In this paper, we critically reflect on the success of a community-based hygiene intervention and the insights gained through long-term qualitative research embedded in programme evaluation. Our intervention targeted maternal hand-washing behaviours in the slums of Kathmandu, Nepal. We capitalized on the 'lessons' learnt of previous community-based hand-washing interventions in developing countries (especially Curtis et al., 1997, 2001). Thus we focussed attention on the psychosocial determinants of behavioural change, informed by the Theory of Planned Behaviour (Fishbein & Ajzen, 1975). Additionally, we capitalized on insights derived from careful studies of the drivers of hygiene behaviour, targeting what Aunger et al. (2010: 384) called 'motivated behaviours' – behaviours that "occur in response to a need, or perceived discrepancy between an aspect of a person's current state and an ideal state" to create a demand for hygiene. In this way, we incorporated strategies from social marketing to 'sell' hand-washing behaviours to mothers caring for young children. The impact of this intervention, regarding 'hard outcomes' (namely, maternal hand-washing practices, child morbidity, and growth) is reported elsewhere (Langford, Lunn, & Panter-Brick, 2011). We focus this paper on qualitative data collected in the formative and evaluation phases of the intervention. We present these data to evaluate both the power of a social marketing approach and its limitations.

Methods

Ethical approval was formally obtained from both the Nepal Health Research Council and Durham University's Research Ethics Committee. Verbal informed consent was gained from all participants and slum community leaders.

Study design

The study was conducted in the eight largest slums of Kathmandu, randomised to either intervention or control groups, on the basis of the most recent demographic data available (Shrestha & Shrestha, 2005). We purposively chose the largest slum settlements in order to maximise sample size, leaving aside small settlements where intensive observation and repeated measures would be too logistically difficult over the year of study. Our target population consisted of mothers caring for infants 3–12 months old, the first year of life being the age range most relevant to monitor changes in child growth and morbidity outcomes. Our sample was small, but comprised of all available mother/infant pairs ($n = 88$) living in the slums. Eligible participants were identified from house-to-house surveys, intensively recruited, and invited to an information meeting; all agreed to participate. Mothers were also offered a small gift (200 rupees, approximately £1.50) for growth measurements and time compensation. Having recruited a total sample of mothers with infants, we divided our work between areas assigned to intervention ($n = 45$) and control ($n = 43$). We worked intensively with this sample over one year, as the primary aim of our study was to produce good-quality repeated measures on infant health outcomes, pre- and post-intervention.

The study was carried out during 2005. We conducted formative research for four months, and implemented the intervention for six months with continuous evaluation. The lead author (RL) conducted participant observation throughout this period, and led the intervention with the help of two research teams: one responsible for the intervention's design and implementation, the other responsible for survey evaluation. The first team included two Nepali research assistants, to assist with focus groups and interviews, and five well-known and respected women from the slums, recruited to be Community Motivators (CMs) taking prime responsibility for program implementation. The second team comprised ten Nepali field workers, trained to conduct structured observations and administer weekly child morbidity surveys; to

minimize bias, they were never involved in any elements of the intervention programme.

Formative research

The aim of the formative research was to assess mothers' hygiene practices and identify their motivations and barriers to changing hand-washing behaviour, in order to inform the development of the intervention message. Following a research protocol for hygiene interventions established by Curtis et al. (1997), we focussed on hand-washing-with-soap at five key junctures: after going to the toilet, after cleaning-up child faeces, and before cooking, eating food, or feeding the baby. We undertook (i) structured observations and (ii) self-reports of hand-washing behaviour, as well as (iii) focus group discussions, and (iv) in-depth interviews, as described below.

Structured observations were implemented, after piloting, with a random selection of households ($n = 75$): our field workers recorded mothers' hand-washing behaviour, noting whether or not soap was used, for 3-h periods in the morning. Mothers were informed that our observations focussed on their daily work, rather than hygiene. Post-intervention, we chose not to repeat direct observations, due to likely 'reactivity': mothers would be aware that observations focussed on hand-washing behaviour. For self-reports, surveys were undertaken with all mothers ($n = 88$), both pre- and post-intervention.

Focus group discussions focussed on local perceptions of cleanliness and hygiene. We conducted three groups, randomly selecting participants (6–8 mothers/group) from intervention communities. The groups, lasting 2 h, were moderated in Nepali by a research assistant specifically trained for this task, with comprehensive notes taken by a second Nepali assistant. The moderator, note-taker, and lead author met after each focus group to discuss findings.

We focussed semi-structured interviews in intervention communities, selecting a random sample of respondents ($n = 26$, from a total 45) having developed a discussion guide to prompt for emic perspectives on health and hygiene. The lead author conducted interviews in the privacy of mothers' own homes, in Nepali, with assistance from a Nepali research assistant where necessary. Interviews lasted approximately 1 h and were not recorded; notes were taken throughout and written up into comprehensive field notes immediately after.

Intervention

The intervention activities were developed by the research team, and implemented in intervention communities (mothers in the control group continued habitual practices). They aimed to (i) promote a positive attitude towards hand-washing, (ii) establish hand-washing as a social norm, and (iii) remove barriers that might hinder this practice. Thus mothers were encouraged to wash hands with soap at the five key junctures mentioned above. They were supplied with a free bar of soap every two weeks, to remove economic constraints on purchasing soap and initiate behavioural change. CMs held launch meetings to introduce mothers to the programme, and conducted regular home visits (daily, then tapering to once a week) to each and every mother throughout the intervention period. Fortnightly mothers' group meetings were facilitated by CMs, providing an opportunity to discuss the intervention messages in an informal and sociable setting. CM meetings were also held every two weeks with the lead author to share ideas or concerns and assess the intervention's progress. Posters were designed and prominently displayed throughout the communities, while drama performances, a 'hand-washing song,' and dancing were composed and facilitated at group meetings and other community events.

Evaluation

We assessed the program's impact, both quantitatively and qualitatively. Quantitative indicators encompassed (i) self-reported hand-washing rates, (ii) child morbidity reports, assessed week-by-week using a simple symptom checklist for main illnesses, and (iii) measures of infant growth (reported elsewhere, Langford et al., 2011).

Qualitatively, we assessed attitudinal and behavioural change, as well as constraints on hygiene behaviour, with (i) participant observation, and (ii) in depth interviews. The lead author visited slums on a daily basis, taking up opportunities for informal observations and conversations, attended fortnightly mothers' group meeting, and convened regular meetings with CMs. Post-intervention, she conducted in-depth interviews with participants from intervention communities ($n = 12$, from total 45), purposively chosen to reflect relative poverty and engagement in the programme.

Data analyses

Formative data were analysed collaboratively by the lead author with Nepali research assistants, to inform the design of the intervention. In-depth qualitative analysis built upon this first phase. This involved content analysis of all field notes, interviews, and focus group discussions, in English and Nepali, coded by hand to identify salient thematic categories, using an iterative process of comparison between all sources of ethnographic data. All names have been changed.

Results

Conditions in the slums

The socio-demographic characteristics of our sample are shown in Table 1. We found no differences between intervention and control groups with respect to demographic variables or composite socio-economic score; participants in intervention communities were 'poorer' on two counts, namely, living in a dwelling with just one room, and using the cheapest form of cooking fuel.

Half-the sample (55%) owned their own house (but not deeds to the land on which it was built); the rest lived in rented accommodation. Most houses were simple brick constructions roofed with corrugated iron sheets, while ultra-poor households lived in shelters of woven bamboo or plastic sheeting. Over half (57%) of the sample lived in just one room, which served as kitchen, bedroom and general living area for the entire family.

Access to drinking water was limited in all areas: three settlements had public taps that provided water for just a few hours on alternate days; the remaining settlements relied primarily on water from public or private tube wells and deep wells. Water for hygienic purposes was always available from these wells, even during the dry season. Soap was available in every household. The majority of families (82%) did not have access to a private toilet, but instead shared sanitary facilities with several families or used public toilets. The number of people sharing access and the cleanliness and state of repair of the toilets varied dramatically within the settlements.

Baseline hand-washing practices

Structured observation showed that hand-washing-with-soap was not routinely practised. Only a fifth (21%) of mothers washed hands with soap after defaecation, and only 14% did so when

Table 1
Household demographic and socio-economic characteristics of control and intervention groups.

	Control ($n = 43$)	Intervention ($n = 45$)
Maternal education %		
None	51.1	55.6
Primary	18.6	17.8
Secondary	30.2	26.6
Paternal education %		
None	25.6	28.9
Primary	11.6	28.9
Secondary	62.8	42.2
Tenure %	53.5	55.6
Own	53.5	55.6
Rent	46.5	44.4
Rooms in house %		
1	44.2	68.9
2+	55.8	31.3
Toilet %		
Own	16.3	20
Shared/public	83.7	80
Fuel type %		
Firewood (cheapest)	23.3	67.7
Kerosene	34.9	34.1
Gas (dearest)	41.9	18.2
Income per month (Rs)		
Median	4500	4000
IQ range	3000–7200	3000–5300
Possessions		
Median	2	1
IQ range	1–3	1–3
Socio-economic score[a]		
Median	6	5
IQ range	4–10	3–7.5

[a] Based on composite measures of parental levels of education, housing tenure, access to facilities household income and ownership of valuable material possessions.

cleaning the baby after defecation. Just two were seen to wash hands with soap before handling food, and none did so before feeding the child (data not shown). Mothers' self-reports, on the other hand, indicated that hand-washing was a normative (if not actual) practice, at least after defecation. At baseline, 96% mothers reported hand-washing-with-soap after defecation, 82% reported using soap after cleaning the baby's bottom, with just a few using soap before cooking food (12%), feeding the baby (26%), or eating a meal (14%).

Drivers motivating hand-washing behaviour

Four main reasons were identified, from thematic analyses, for hand-washing-with-soap: health vigilance, disgust, personal benefits, and social norms (Fig. 1).

Health vigilance was key. Mothers felt responsible for preparing food, looking after children, and thus protecting their family from ill-health. Cleanliness was important to prevent sickness – hand-washing was part of a suite of activities aimed to maintain hygiene and health in the home.

> *You must keep the house clean, give clean food, wash your hands after going to the toilet, keep surroundings clean. You must do this to stay healthy and avoid disease*. (Interview data).

Hand-washing was also strongly motivated by notions of disgust, especially around defaecation, when failure to wash hands with soap would make mothers feel 'disgusting', 'wrong', 'dirty', and 'uncomfortable'.

> *I have to wash my hands after going to the toilet. Even if they are clean and don't smell, I still want to wash them. I know in my heart that they're still dirty and I feel wrong*. (Interview data).

By contrast, using soap to clean hands made them feel 'nice', 'clean', 'fresh', 'light', 'at ease'. Only soap could offer such a 'really clean' feeling. The personal benefits of using soap focused on having soft, nice-smelling hands.

> *[Soap] makes your hands smell nice and it makes me feel I look good, nice. I feel light afterwards*. (Interview data).

Hygienic behaviour was also driven by strong social expectations. It was important for the women to be thought of as 'good' mothers who looked after their families well, and achieving this required high standards of hygiene. A strong motivation for

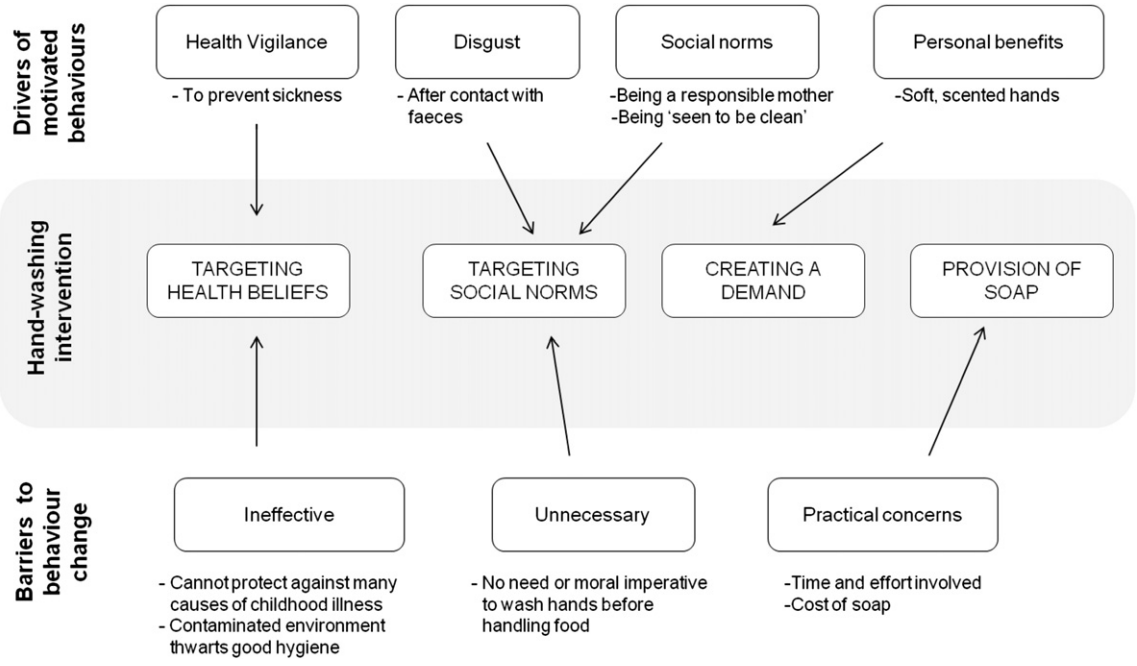

Fig. 1. Determinants of behaviour change: how proximate influences were targeted by the intervention (formative phase).

hygienic behaviour therefore centred on what people might say about them in private and a desire to give the right impression.

I want them to think, 'Oh, she's a good mother, she keeps herself and her house clean.' (Interview data).

Barriers to hand-washing behaviour change

Women identified three main barriers to hand-washing: it was unnecessary, impractical, or ineffective (Fig. 1).

Feelings of disgust drove hand-washing behaviour: this carried weight after defaecation, but hardly applied to cooking, eating or feeding a child, when water alone was deemed sufficient to cleanse hands. There was clearly no social expectation to use soap in the latter instances, unless hands were visibly soiled.

You only need to wash with water before cooking. Your hands aren't dirty then so no soap is necessary. (Focus group data).

Hand-washing-with-soap required time and effort: one had to go outside rather than quickly rinse hands in a bowl at home; it took longer to clean hands with soap; and it required greater amounts of water to rinse away all the suds, water which had to be fetched from a communal pump. Cost and availability of soap were also a problem: while soap was present in every sample household, soap for hand-washing was still mentioned as a financial burden.

If you spend ten rupees on soap, that's ten rupees you could have spent on food. (Interview data).

Good hygiene could prevent sickness, but could not guarantee good health. Despite the efforts of the mothers to protect them, children contracted illnesses for a variety of reasons, many of which mothers had no control over. Diarrhoea, colds, fevers and other diseases were commonly attributed to changes in the weather, the cold (Nepali: *chiso*), evil spirits, or simply 'fate', which better hygiene was unable to prevent. Equally, the poor living conditions of the slums were seen to thwart women's efforts to keep their children clean and healthy.

I am so careful about my children. I pay great attention to keeping them clean, washing their hands, their faces, giving them good food, clean clothes – and yet they still get sick. (Interview data).

Development of the intervention messages

Formative data showed that protecting health was a key motivator for hand-washing practices. However, mothers also expressed ambivalence regarding the link between hygiene and health, and their ability to exert control over their families' health. A message that focussed *solely* on health benefits of hand-washing was unlikely to be compelling; it could conflict with their own 'lived experience' in the slums. A compelling intervention message therefore needed to tap into other goals and motivations for hygienic behaviour.

Ways in which the intervention drew on insights from formative research, regarding the proximate drivers of hand-washing behaviour, are modelled in Fig. 1. We promoted hand-washing-with-soap as a means of protecting one's family from sickness, but also tapped into other salient drivers of hygiene behaviour. Thus, the intervention targeted social norms around hand-washing by emphasising the idea that this is what 'responsible' mothers do. In addition, we attempted to create a demand for hygiene by stressing how hand-washing made one feel 'clean,' 'light,' with 'soft' and 'scented' hands, to encourage mothers to feel good about themselves. Finally soap was provided free-of-charge to all participants to overcome financial barriers to participation.

Impact of the intervention

By the end of the intervention period, mothers in the intervention areas were more likely than counterparts to report hand-washing-with-soap at four out of five key junctures (Table 2). In terms of morbidity, babies in intervention communities experienced fewer days of diarrhoea ($p = 0.023$, Table 2).

Ethnographic evaluation, however, revealed a more nuanced picture, one gained from participant observation, accounts taken at mothers' group and CM meetings, and in-depth interviews to answer key questions – what works, for whom, in what contexts and why?

In mothers' meetings and in-depth interviews, mothers talked about establishing new hand-washing behaviours. Most felt they were now washing their hands more than before. As one woman explained,

It's easy now. It's become a habit. You see the soap and it reminds you. (Mothers' group meeting).

The mothers had also encouraged their husbands, mothers-in-law and older children to wash hands more often, resulting in changes in their whole family:

I taught my children about it and now my eldest is always saying "Shouldn't we wash our hands now, Mummy?" (Mothers' group meeting).

When discussing the benefits of hand-washing, mothers mentioned health benefits for their children, but also focussed on personal benefits thus mirroring the messages promoted through the intervention:

[Hand-washing] kills the germs on your hands. If you don't do it, your child will become sick... I think [my son] is less sick now, he has less diarrhoea. (Mothers' group meeting).

Those soaps [laundry/dish soap] make your hands dry and sore. This soap is nice though. It doesn't dry your hands, it makes them soft again. (Interview data).

The regular home visits to each mother by the CMs were of central importance in establishing new hand-washing habits. Women explained that it was helpful to have someone remind them, during the first month, when they were most likely to forget. But even more significant was making hand-washing acts more 'visible' in the community. CMs identified one of the most successful elements of the intervention to be harnessing social norms regarding the need 'to be seen to be clean.' Being aware that other people might be watching what they were doing was a powerful driver to behaviour change. As one CM explained,

[The mothers] have to use the public toilets down by the stream and that's right next to the rower pump where women wash their

Table 2
Impact of the intervention on hand-washing and child morbidity.

	Control ($n = 43$)	Intervention ($n = 45$)	*P* value[a]
Maternal hand-washing (% post-intervention)			
After:			
Visiting toilet	90.7	100	0.053
Cleaning baby's bottom	83.7	100	0.005
Before:			
Cooking	2.3	71.1	<0.001
Feeding the baby	18.6	62.2	<0.001
Eating	0	60	<0.001
Child morbidity (median days with symptoms)			
Diarrhoea	16.3	9.7	0.023
Cold	50	40	0.062
Fever	16.3	11	0.125

[a] Chi-Square – hand-washing; Mann–Whitney *U* – morbidity.

clothes. They come out and they know people are watching so they make sure to come over and ask for some soap so they can wash their hands. (CM meeting).

While another commented,

Everyone knows each others' business here. They all want to keep up with each other. So if so-and-so's doing it, they want to do it too. (CM meeting).

In sum, home visits, group meetings and the everyday visibility of hand-washing behaviour, coupled with social norms regarding hygiene and cleanliness, proved powerful drivers of behavioural change.

Our intervention was less successful at stimulating hand-washing before contact with food, in contrast to the key juncture of defecation. Mothers often admitted they skipped hand-washing before eating:

When you're at home it's easy. But if you're out at a friend's house, they often don't have [soap] and so I don't wash my hands then. (Mothers' group meeting).

This was reiterated by the CMs:

They never think about hand-washing [before contact with food]. I remind them about it and they say 'Yes, yes' but you know they don't really think it's important. (CM meeting).

Thus in the evaluation phase, as with the formative phase, there simply was not the same hygienic or moral imperative to wash hands before contact with food. Moreover, because these food-related behaviours were less visible – hidden inside the home – it was not possible to harness the same social pressure to shift these behavioural norms.

It is difficult to appraise how many women disengaged with the intervention, in terms of not changing their hand-washing practices. CMs readily identified eight women by name (one fifth of the intervention group); they may have known others, but not specifically brought them to attention in meetings with the lead author. These eight women were among the poorest women enrolled in the study. Reasons for their lack of engagement were identified through in-depth interviews and open-ended discussion. They included poverty, powerlessness, and competing priorities, as conceptually represented in Fig. 2 and illustrated with case examples below.

Extreme poverty resulted in both practical and psychological constraints on behavioural change for these women. Unlike the majority of mothers in the study, these women often had to seek employment outside of the home, in order to meet bare subsistence needs. This presented a number of practical constraints on their ability to change hand-washing practices. A case in point was Bishnu-Maya Gurung, mother to nine month-old Pratik. She intermittently took up labouring work to supplement her husband's income. Having no family in the area, she had to take Pratik with her, either carrying him on her back or leaving him somewhere nearby while she worked. She stated the obvious: when engaged in labouring work, hand-washing simply was not possible; there was no water, no toilet, no soap, and no way of getting access to these resources. She knew the importance of hygiene, but since no soap or water was available to her for much of the day, she simply could not wash her hands at the appropriate key junctures.

Powerlessness to govern family hygiene behaviours is best exemplified by the case of Sarmila Pariyar. She was employed to wash dishes and clothes for richer families nearby. Her husband was an alcoholic, out of work for several years, and thus her family (of six) was entirely dependent on her wage of just 2000 Rs (£15) a month. Her job took her away from the home for several hours, both morning and afternoon. During this period, her four children were ostensibly left in the care of their father, although Sarmila admitted he spent much of the day drunk or asleep; mostly the children had to take care of themselves. Her youngest son, Sujal, was often left in the care of his five-year-old sister who was supposed to feed him when he grew hungry. Thus, for a large proportion of the day, managing the hygiene behaviours of her family was largely outside of Sarmila's control.

Of course, despite their work, both Bishnu-Maya and Sarmila were at home for some of the time and could therefore potentially have stepped up hand-washing practices at these times. However, practical considerations were not the only constraints their behaviour. Competing priorities were also at work. Sarmila's CM identified another important reason for her lack of engagement: hand-washing simply was not the most important priority at that time. In her words,

She's just not interested... It's very difficult for her. Her husband does nothing, he doesn't work, he just drinks all day and she has

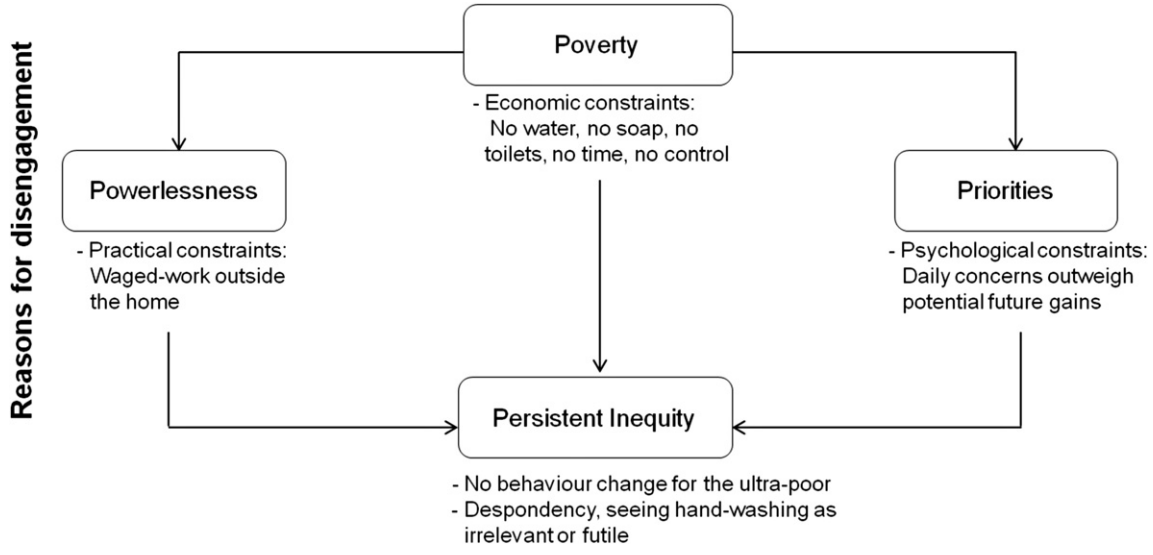

Fig. 2. Determinants of health equity: how structural issues led to disengagement with the intervention (evaluation phase).

no-one to help her with all those children. She has other things to worry about. (CM meeting).

For Sarmila, the potential threat of her child becoming sick as a result of not hand-washing was far less pressing than the need to earn enough money to survive the next week, especially as she was rarely at home to be able to instil this new hygiene behaviour.

The CMs, for their part, were acutely aware of the difficulty of promoting behavioural change in the face of such challenging life circumstances. They frequently referred to certain mothers as being 'difficult' to engage in the programme, as typified by Bhumika Lama. Her husband did occasionally work but spent the money he earned on alcohol. A few weeks after giving birth, Bhumika therefore returned to her insecure, low-paid work as a day-labourer. As a result of her work, Bhumika often did not attend the mothers' group meetings, and was rarely at home when the CM went to visit. When she was at home, the CM reported her as being uninterested or even hostile to the hand-washing message. It was a well-known fact that Bhumika's husband was an alcoholic, that he often beat her, and that they were struggling to survive on her low wage. Her CM admitted that promoting hand-washing in the face of all the other problems Bhumika faced felt irrelevant and futile.

The particular difficulties facing the ultra-poor, especially those who had to leave the home for work, were acknowledged by other mothers in the intervention.

If a woman is a widow or her husband is away or not working and she has lots of children, she doesn't have time to look after them all properly. It's very hard for them. (Interview data.)

However, often these women and their actions were discussed in morally loaded terms.

Some mothers leave the house early for work and don't take proper care of their children. If they wanted to they could get up early in the morning and clean the house and see to all the things, but they are just lazy and don't want to do this. (Interview data.)

During informal conversations, mothers would 'name and shame' their neighbours who they felt were not living up to the expected standards of hygiene.

[My neighbour] doesn't wash her hands after she goes to the toilet and she lets her children go to the toilet on the ground out there... She just says 'Let it be, I don't care'. ... I think she's happy being dirty. (Interview data.)

Cleanliness thus carried strong moral connotations: rather than admit to not hand-washing, most women talked more generally about the difficulties of keeping clean in a highly contaminated slum environment. As one mother stated,

We have to live next to this dirty, smelly stream and there's nothing we can do. You can't keep yourself or your children clean and healthy if you have to live in a place like this. (Interview data.)

Discussion

Our study is unique among community-based hygiene interventions in that ethnographic data were embedded throughout the research process, alongside quantitative measures of the intervention's impact. We relied on qualitative research in two ways: in designing a compelling intervention message, and in providing a better understanding of impact and reach.

Formative qualitative research was crucial in the design of the intervention message. While baseline observations confirmed low rates of hand-washing practice, formative data identified that hand-washing and hygiene were important to slum-dwelling women, involving strong normative and moral expectations. Borrowing ideas from social marketing, we sought to understand hand-washing behaviour from the perspective of our target audience to design an intervention that targeted the most salient drivers of behaviour change. To go beyond mere health concerns, we sought to create a demand for hygiene, targeting what Aunger et al. (2010) call 'motivated behaviours' by emphasising the positive personal benefits of hand-washing to mothers and tapping into social expectations around maternal responsibility for hygiene.

This strategy worked well; we observed an increase in reported maternal hand-washing rates and a 40% decrease in diarrhoeal morbidity in intervention relative to control groups. This result falls in line with those reported from other community-based hand-washing interventions (Curtis & Cairncross, 2003). The intervention was particularly effective at increasing hand-washing after contact with faeces; by making hand-washing more 'visible' within the community, we were able to harness the power of normative hygiene expectations and a cultural imperative 'to be seen to be clean'. The intervention was less effective at increasing hand-washing before contact with food, where moral and social imperatives to wash hands were weaker: emphasising positive personal benefits alone was not effective in shifting behaviour. We thus demonstrated that by targeting and harnessing the power of social norms it is possible to change hygiene behaviours in challenging environments such as urban slums, where hygiene promotion is both important and difficult to achieve.

Unlike many community-based hand-washing interventions which limit qualitative data to formative stages of research, this study embedded ethnographic data into programme evaluation. These data revealed a nuanced appraisal of programme effectiveness. While the intervention engaged the majority of women, changing hand-washing behaviour was neither easily achievable nor a high priority for the ultra-poor, given other pressing daily concerns. This highlights an important limitation of a social marketing approach to behaviour change. Where barriers to hand-washing are largely attitudinal – for example, where hand-washing is deemed unnecessary and/or ineffective – a marketing approach that taps into other salient motivators can be highly effective. Where women face real structural and practical barriers to change, this type of approach is unlikely to succeed.

Our intervention was informed by ideas from social marketing, targeting motivated behaviours and social norms to create a 'demand' for hygiene. It differed from a 'pure' social marketing approach in two ways. First, because our primary aim was to assess the impact of hand-washing on child growth and morbidity, we provided mothers with soap free-of-charge. Second, given the small scale of the intervention, we did not carry out detailed audience segmentation. Had we done so, we might have identified at the outset the poorest women for whom the intervention would not be compelling. Nonetheless, it is difficult to see how *any* way of marketing this message to the ultra-poor could have been effective when social, economic, and physical circumstances remained unchanged.

This limitation, pertaining to the wider 'structural' constraints on people's behaviour, has been acknowledged in other community-based hygiene studies. Aunger et al. (2010), for example, reported that economic constraints were significant barriers to hand-washing in Kenya. In the poorest communities, people raised concerns over 'wasting' soap and water, concluding that costs of using these valuable resources often outweighed any potential benefits. Similarly, Jenkins and Scott (2007) reported on the possibilities of using a social marketing approach to improve household sanitation facilities. They identified important structural issues – namely poverty and a lack of finance and credit options – that placed significant constraints on householders' decision-making to adopt sanitation facilities. Importantly, they argued

that "marketing is unlikely to be able to fully address either of these [structural issues] and laws, public policies, and other mechanisms are required" (2007: 2439).

As Wallack (2002: 30) noted, "everything flows from how the problem is defined." Therein lies an inherent limitation in social marketing's theoretical perspective: that the 'problem' to be solved is people's behaviour. The social marketing model focusses on proximate, behavioural causes of ill-health rather than the wider structural contexts in which behaviours are (or are not) produced. This focus is consistent with the attention given to the cognitive drivers of behaviour change and a search for the best 'leverage points' on individual-level behaviour. Whilst this approach can be highly effective in identifying and framing a compelling message, it can only benefit those who are actually in a position to implement such change. This type of approach is necessarily based on an implicit assumption of high levels of individual agency (Blankenship et al., 2006), with expectations of innovation diffusion having a lasting impact on public health. Yet our data identified that some of the most important barriers to hygiene practices are largely the result of structural issues wholly beyond the scope of a marketing intervention predicated on individual agency. The result was an inadvertent push towards health inequity, a prevention paradox where those who stand to gain the most from changing health-related behaviours were the least able to achieve this. Those who could change their behaviour did so; those whose behaviour was largely constrained by wider structural factors, did not.

This negative impact on health equity is, of course, not unique to social marketing alone. Many well-intentioned interventions have appeared successful in improving in health behaviours at the aggregate level, while masking differential effects between socio-economic groups (Macintyre, 2003). It is increasingly recognised that 'downstream' interventions that target individual behaviour are more likely to increase inequity than 'upstream' interventions tackling structural issues (Lorenc, Petticrew, Welch, & Tugwell, 2012). With its explicit focus on individual agency, social marketing is certainly vulnerable to such criticisms. Yet, little attention has been paid to the impact of social marketing on health equity (Knerr, 2011). The few studies that have explored this issue have shown mixed results. Agha, Van Rossem, Stallworthy, and Kusanthan (2007), for example, found a social marketing intervention in Zambia had some positive impacts on equity with regard to ownership of insecticide-treated bednets, but these were driven largely by increased ownership among medium income groups. The intervention did little to increase bednet ownership among the very poorest families where the price of even subsided nets was still too great a barrier. Conversely, in another bednet intervention in Tanzania, Nathan et al. (2004) found social marketing was associated with an increase in equity; the ratio of net ownership between poorest and richest households doubled over the three years of intervention. The authors note, however, that the existing demand for mosquito nets in these communities was already extremely high and this level of effect should not be assumed elsewhere in the absence of this important 'enabling' factor.

It is important that future social marketing interventions explicitly examine equity in terms of impact and uptake among different socio-economic groups. However, there is also pressing need for an assessment of other harms and unintended consequences that may arise as a result of such programmes (Kleinman, 2010; Knerr, 2011; Pfeiffer, 2004), particularly those targeting sensitive or morally-loaded topics such as hygiene or sexual behaviours. Our results suggest that social marketing campaigns may potentially create a *dual* disadvantage for the ultra-poor: they suffer from the inability to change their behaviours and reap associated health benefits, and they suffer from the inability to comply with changes in social norms engendered by successful social marketing interventions. Our intervention message was presented in a positive way – emphasising that hand-washing protected one's family, made one feel 'right' and was socially responsible – but the implicit assumption was that mothers who did not hand-wash-with-soap were less than virtuous. That ultra-poor women faced socio-economic adversity was well-acknowledged within slum communities, but they also faced social censure and accusations of laziness. By linking hygiene to social responsibility to drive a culturally-compelling intervention, our message inadvertently further marginalised the poorest households trapped by powerlessness, competing priorities, and despondency. While the imperative to avoid stigmatising messages is well-known in social marketing, it is difficult to see how this need is met, given that social marketing programmes often specifically and explicitly target social norms. In everyday practice, a social norm carries with it the idea of some kind of censure for those who fail to live up to it.

For many of the most intractable public health issues, a behavioural approach wholly focussed on individual agency is insufficient (Stokols, 1996) and potentially harmful, leaving the poor more vulnerable and marginalised than before. An over-reliance on what have been termed 'neo-liberal' approaches to health promotion such as social marketing runs the risk of "embedding a behavioural turn away from a focus on wider social and environmental determinants of well-being" (Crawshaw, 2012: 207). Evaluating whether structure or agency is the predominant driver of behaviour is a critical debate within public health (Abel & Frohlich, 2012; Cockerham, 2005; Rütten & Gelius, 2011). As Cockerham noted, 'there are situations in which structure can be so overwhelming that agency is rendered ineffective' (2005: 54). Interventions cannot focus solely on changing behaviour; they must also be mindful of the environment in which these behaviours take place. Complex and complementary strategies that focus on both structure *and* personal agency are thus required (Frohlich & Potvin, 2009).

The utility of the social marketing model for public health therefore depends largely on the way in which it is deployed and embedded within other, more structural, approaches. Most public health issues require a combination of "both individual level and environment/policy level interventions to achieve substantial changes in health behaviours" (Sallis, Owe, & Fisher, 2008: 467). Social marketing's considerable strengths are best harnessed when used as one of a suite of activities operating at different levels of a social ecological model (McLeroy et al., 1988; Stokols, 1996). Thus, an intervention could harness the considerable strengths of social marketing at the more proximate level, whilst simultaneously intervening at the more distal, structural levels to help facilitate behaviour change. With regard to hand-washing, for example, structural interventions that address the wider problems of the slums – poverty, pollution, crowding, inadequate basic services, and social exclusion – are needed, in addition to more proximate level interventions that focus on individual hygiene behaviours.

An in-depth understanding of one's audience is, per se, not enough to achieve behavioural change; we must also have a detailed understanding of the environment and structures in which human action takes place. The inclusion of ethnographic data into the evaluation of this programme, for example, provided in-depth understanding of everyday social experience and responses to the intervention. This allowed for a fuller, more accurate understanding of the intervention's impact. In the formative phase, qualitative data focussed primarily on proximate concerns regarding how best to 'sell' this behaviour (Fig. 1), while in the evaluation phase, it helped identify the more upstream determinants of health equity (Fig. 2). Had this study relied purely on 'hard' morbidity outcomes, this important equity dimension would have been largely overlooked. As emphasized elsewhere in the social sciences literature, the power of ethnographic evaluation lies in exploring the "dynamics of context, practice, agency and power" that shape human behaviour (Evans & Lambert, 2008: 467).

Our ethnographic data have raised problematic equity issues, indicating that social marketing techniques would benefit from careful and critical scrutiny. We need a clearer understanding of how social marketing messages are interpreted by local communities over time. Equally, we need to pay attention to issues of health equity, and to the unintended consequences of social action in terms of social marginalization. We are mindful of a critical point made in the health literature that the 'social determinants of health' are not identical to the 'social determinants of health equity' (Jones, Jones, Perry, & Barclay, 2009). Furthermore, efforts to design culturally-compelling interventions do not necessarily translate into sustainable health impacts (Panter-Brick, Clarke, Lomas, Pinder, & Lindsay, 2006) nor, as in the present study, into economically-compelling interventions for the ultra-poor. Indeed, a major shift in the field of development economics began with the realization that the ultra-poor fail to take-up a whole range of simple interventions that would significantly improve health and productivity (Banerjee & Duflo, 2011; Karlan & Appel, 2011). It remains a challenge to design interventions that will promote effective and sustainable changes to well-being and will also make sound cultural and economic sense for the most under-served.

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