

Evaluation of a peri-urban community health worker project in the western Cape

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Summary

The South African Christian Leadership Assembly (SACLA) Health Project is a non-governmental organisation that runs a community health worker (CHW) programme in 4 peri-urban townships of Cape Town. A cross-sectional descriptive community survey was conducted in April 1990 to evaluate coverage and health education on oral rehydration solution (ORS) and to plan future preventive, promotive and development programmes. Research concepts and methods were made accessible to the CHWs through a training process designed to facilitate participation in every stage of the research. A multi-stage cluster sampling scheme was used, and the CHWs interviewed 822 residents. Coverage indicators showed that over 80% of all respondents had previously known about or consulted the CHW. The most common community problems related to water, filth and refuse, toilets, housing, unemployment and lack of community facilities. The most common health problems were generalised aches and pains, chest problems, skin problems, worms, and diarrhoea. An index developed to measure knowledge of ORS showed very few respondents had 'complete knowledge'. The community's expectations of the CHW included health education, attending to sanitation problems, providing a clean environment, organising community facilities, and helping with employment.

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The South African Christian Leadership Assembly (SACLA) is a non-government health project that was started in June 1980 as a clinic in the then illegal squatter camp of Old Crossroads, near Cape Town. In 1986, during serious community conflict, the clinic was closed. This forced the staff to evaluate their future role, and from this a new project was born the SACLA Health Project.

The aim of SACLA is to provide primary health care to poor and under-served squatter communities by involving individuals and communities in their own health care. The community health worker (CHW) project was developed in squatter townships to empower the community and to demystify health.

Village health worker projects have existed in many countries for many years.^{1,2} However these have usually been set up in rural areas, and CHWs in a peri-urban slum setting are a

more recent phenomenon.³ The SACLA staff recognised the need to evaluate such pioneering CHW projects, and to assess their applicability to the rapidly changing environment of the city.⁴

The CHWs role is to share health knowledge with people, and help to prevent illness; to treat minor, common sicknesses, and to refer appropriately; and to assist community organisation and development.

At the time of the survey in April 1990 the CHW project was operating in 6 areas: 2 rural towns, Montagu and Ashton (these were not included in this study), and 4 peri-urban townships of Cape Town, Site B in Khayelitsha (Site B), New Crossroads (NXR), KTC, and Millers Camp (MC) (Fig. 1).

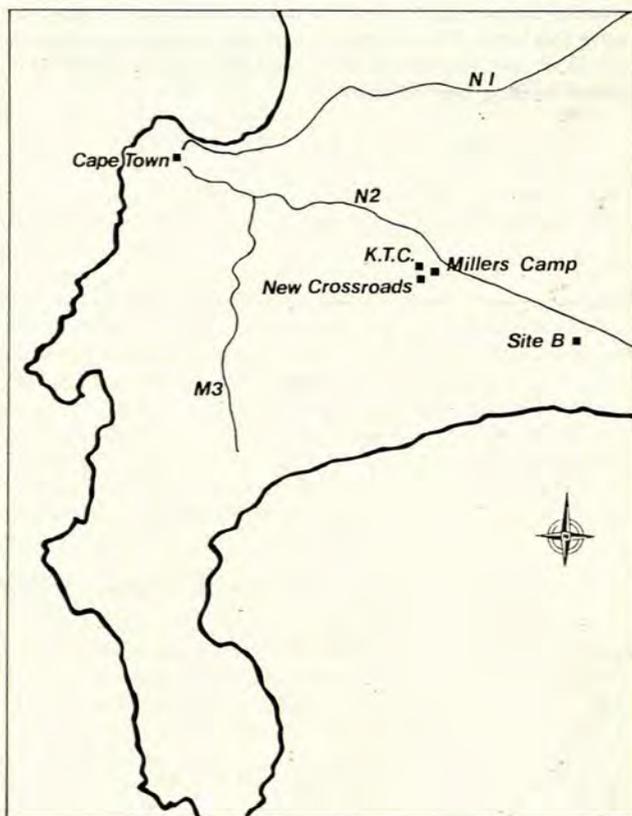


Fig. 1. Map of Cape Town showing the four townships surveyed in the SACLA survey, 1990.

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A previous evaluation undertaken in 1989 had involved a record review of the work of the CHWs in Site B. The results of the review (report available from the authors) provided information on utilisation of the CHW service for the treatment of episodes of acute illness, but gave no information on the healthy or the non-users.

During 1989 SACLA became concerned that the CHWs were spending most of their time providing curative services for minor ailments. SACLA felt that it was important to plan

a systematic home-visiting programme whereby each CHW visited each home in his/her area and developed ongoing relationships with families in order to share health knowledge and to link these families with available resources. The survey reported here was conducted to collect essential information for planning this programme.

The aims of the evaluation were to assess the project's coverage (i.e. how many people in the community know and 'use' the CHWs); to evaluate the level of health knowledge and whether health education had made any impact; and to elicit the important problems of the community and their view of the CHW, especially their view of home visits for family health education. An important evaluation principle was to involve methods that would facilitate the participation of every CHW in all aspects of the research. It was decided that each CHW would conduct the survey in his/her own area and would use area-specific data to evaluate his/her own work, and to plan activities with residents in their areas. A final aim was to develop research methods and processes of use to other CHW projects.

Subjects and methods

A cross-sectional descriptive community survey was conducted by a team of SACLA co-ordinators, the SACLA CHWs, and researchers from the South African Medical Research Council (MRC) during 2 weeks of April 1990. A questionnaire was administered in the field by the SACLA CHWs to collect information to evaluate their own work and to plan activities in their areas. Research concepts and methods were made accessible to the CHWs through a specially designed training process, details of which will be made available in a future article.

The study population comprised adults residing in households in which there were children < 6 years of age in Site B, NXR, KTC and MC. For a description of these townships see Table I.

Sampling

The sampling strategy

A multi-stage cluster sample was drawn, stratified by township and area, and 4 clusters of 7 households were selected for each CHW in his/her area of responsibility. In KTC 3 clusters of 10 households were selected for each CHW.

The number of households in each area, the number of households each CHW was responsible for, and the sample sizes are shown in Table II. The size of the sample in each area was chosen for logistic reasons: CHWs conducted the fieldwork and could not devote more time to interview a larger sample.

TABLE II. SAMPLING PLAN

	Site B	NXR	KTC	MC
Approximate No. of households	9 878	2 307	5 000	2 000
No. of households sampled	420	168	210	56
No. of clusters	60	24	21	8
No. of CHWs per area*	15	6	7	2

* One CHW in Site B was on leave, and 1 CHW in KTC was sick — their areas were not included.

TABLE I. DESCRIPTION OF THE 4 PERI-URBAN TOWNSHIPS

Characteristics	Site B	NXR	KTC	MC
First established	1985/1986 to address squatter problem of Cape Town	1982 — Phase I of plans to house squatters from Old Crossroads	Some squatters for many years, community slowly grew from 1975	1986 — conflict in Old Crossroads; refugee community
Approximate population size	150 000 (SACLA only covers 10 of 13 zones)	10 000	15 000	10 000
Other health services	<i>Preventive services</i> — 1 RSC clinic; <i>curative services</i> — 1 day hospital, 1 maternal/obstetric unit; all overcrowded and understaffed	No services in area/ <i>Preventive</i> — use Nyanga clinic; <i>curative</i> — use Guguletu day hospital (overcrowded)	No services in area/ <i>Preventive</i> — use Nyanga clinic; <i>curative</i> — use Guguletu day hospital (overcrowded)	No services in area/ <i>Preventive</i> — use Nyanga clinic; <i>curative</i> — use Guguletu day hospital (overcrowded)
Housing type	Site and service scheme shacks; temporary areas — no services	Brick houses	Shacks	Shacks
Predominant water source	Taps, 1 for 2 sites; temporary areas — no taps	Tap inside house	Communal taps	Communal taps
Sewage	Flush toilet for each site, outside house; temporary areas — no toilets	Flush toilet inside house	Buckets, collected 2 x/wk	Buckets, collected 2 x/wk
No. of SACLA/CHWs	16	6	8	2

RSC = Regional Services Council.

Selection of clusters

Different methods to select clusters were employed in each township due to the different terrain and arrangement of houses or shacks. In none of the areas was a complete sampling frame available.

In Site B the officially recognised plots are numbered both on the local authority's administrative maps and on the shacks, and random starting houses for clusters of officially recognised houses were selected using a table of random numbers and the map of plots as a sampling frame.

Unofficial erfes or 'temporary' shacks were not marked on the map. Each area was scouted and temporary areas were mapped. Using the map, one temporary area within each CHWs area was randomly selected, and the starting house for one cluster was chosen by the random selection of a starting point on the map within the sampled temporary area. Further dwellings in the cluster were selected by the CHW in the field using a uniform rule.

In NXR starting houses for each CHW were randomly selected from the local authority's map of erfes. Backyard shacks found in the survey were included in the cluster if they were occupied by residents who were not part of the extended family of the main dwelling.

In KTC there was no official map or listing of erfes. Furthermore, it was almost impossible to map out any area boundaries as there were no obvious geographic divisions between the CHWs areas. However, the CHWs knew exactly which house fell into each area. The starting houses for the clusters therefore had to be selected during the survey, without maps, by approximating rows of houses and systematically selecting starting houses so that each house in the area would have a chance of being selected.

The perimeter of MC forms a rectangle. Each side of the perimeter was measured in metres. These were mapped to scale on paper. A grid was drawn over the map, and 8 starting points on the map were selected by using a table of random numbers to select blocks of the grid.

Selection of respondent

If dwellings with no children < 6 years were selected, the CHW would visit up to 2 further households in an attempt to replace the selected dwelling. The mother or usual carer of the youngest child < 6 years or a responsible adult residing in the household was the respondent.

Questionnaire development

The questionnaire (available from SACLA) consisted of 29 questions, formulated by the CHWs, the SACLA doctors, the trainer, and the MRC researchers jointly at a workshop. The following were included: basic demographic data; knowledge of SACLA and the CHW; contact with the CHW; knowledge and use of oral rehydration solution (ORS) for diarrhoea; perception of priority social and health problems; and perception of the role of the CHW. Questions on AIDS were also included, but these results are not reported here. The questionnaire was initially written in English, translated into Xhosa (the language of the CHWs and the community residents), piloted and revised.

Fieldwork

The CHWs conducted the fieldwork over 2 weeks, and were asked to complete a whole cluster at one time to avoid the 'contamination' that may have resulted from discussion among residents in clusters. Community leaders in the areas had been informed about the survey. After each interview the CHW left

3 pamphlets in the household, which gave information on questions asked in the survey (ORS, AIDS, and information on SACLA).

Data entry and analysis

The data were coded and entered onto the mainframe computer at the MRC. Overall estimates were weighted, using the approximate number of households in each of the areas. The data were also analysed by township. Where *P*-values are reported, χ^2 -tests were used.

Results

A total of 822 households were interviewed. The CHWs conducted an average of 27 interviews each. Table III shows the type of dwelling respondents lived in, who the respondents were, the median value for the number of people living in the household and the inter-quartile range.

TABLE III. DETAILS OF TYPE OF DWELLING, RESPONDENT, AND NUMBER OF PEOPLE IN HOUSEHOLD

	Site B	NXR	KTC	MC
Type of dwelling	N=372	N=134	N=142	N=40
Shack (%)	75,5	5,2	98,6	100
Temporary home (%)	22,6	3,0*	1,4*	0
Brick (%)	1,9	91,8	0	0
Who was the respondent?	N=384	N=169	N=204	N=57
Mother (%)	77,9	72,2	84,8	73,7
Grandmother (%)	9,4	14,2	8,8	3,5
Sister (%)	8,3	6,5	4,4	12,3
Father (%)	2,3	3,0	1,5	10,5
No. of people in household	N=348	N=156	N=178	N=57
Median	5	7	5	4
Interquartile range	4 - 6	5 - 9	3 - 6	3 - 6

* These results are likely to be errors in transcribing responses.

SACLA's coverage

While many people did not know about SACLA (this does not necessarily imply the CHW programme, since SACLA has a history of being involved in other programmes), most people did know that there was a CHW in their area (87,2% overall) and many had at some time consulted the CHW (80,1% overall) (Table IV). In Site B there was no significant difference

TABLE IV. SACLA'S COVERAGE: SURVEY, 1990

	Areas			
Indicators of coverage	Site B	NXR	KTC	MC
Knew about SACLA (%)	38,0	54,4	47,1	38,3
	(147)	(93)	(96)	(23)
Knew of CHWs (%)	87,5	74,7	94,6	53,4
	(329)	(124)	(192)	(31)
Had consulted CHWs (%)	81,5	72,3	81,2	50,0
	(300)	(120)	(160)	(28)

Response frequencies in brackets.

between the officially recognised and the temporary dwellings for consulting the CHW ($P = 0,784$). Knowledge about and utilisation of the CHW was lowest in MC.

Social and health problems in the community

Respondents were asked to list up to four general problems in the community which concerned them. (Fig. 2) NXR residents reported fewer problems in general, and a very different pattern of problems. Housing, water and toilets were not among the 10 most common problems, while social problems, such as undisciplined youth, crime, and drunkenness were. The lack of recreation and community facilities was mentioned more often in NXR.

When asked what *health* problems affected their household, 354 responses from all areas were coded as 'general sicknesses' and these included colds and flu, aches and pains, headaches, and backaches. The other common problems were chest problems, skin problems (sores, rash and scabies), worms, and diarrhoea. (Fig. 3). NXR responses again reflected a very different pattern. There were fewer problems reported in this area. While diarrhoea and worms were important problems in all other areas, they were not among the 10 most common problems in NXR. NXR respondents experienced more chronic health problems, such as arthritis, fits, high blood pressure,

and disability, than those in other areas. MC respondents mentioned unemployment and toilets as health problems more often than people in other areas.

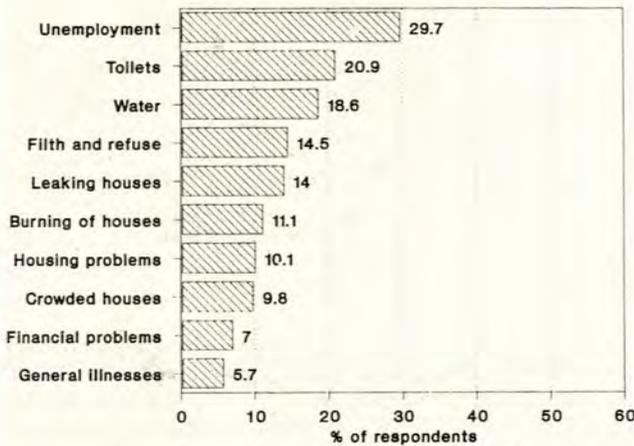
Evaluation of health education

Most respondents (69,7%) had heard of ORS. Of all respondents 60,5% could name the correct ingredients in the solution, 35,2% knew the correct ingredients *and* the correct amounts (as promoted by SACLA) of each to use. Only 6,8% knew all the ingredients, the amounts of each, how much should be administered to the child and how often to administer the solution. Yet over 70,4% of all respondents stated that they had used the solution at some time to treat diarrhoea. The variation in the knowledge 'index' in the 4 areas was not significant ($P = 0,217$). In all areas combined, mothers' knowledge of ORS was not significantly different to other respondents ($P = 0,319$). In Site B the temporary residents' knowledge was not significantly different to the residents of the officially recognised households ($P = 0,579$).

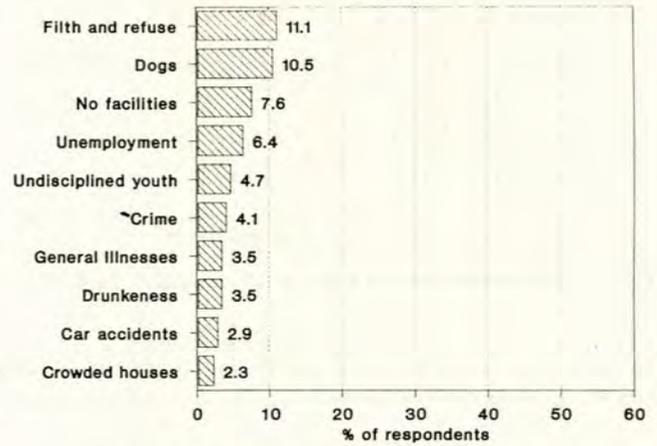
Community expectations of CHWs

CHWs needed to know if it was acceptable for them to talk to the young people about sexuality (in the context of the

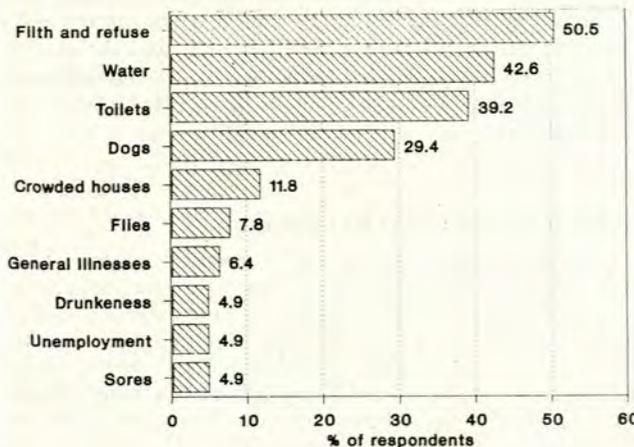
Site B: Community Problems



NXR: Community Problems



KTC: Community Problems



Miller's Camp: Community Problems

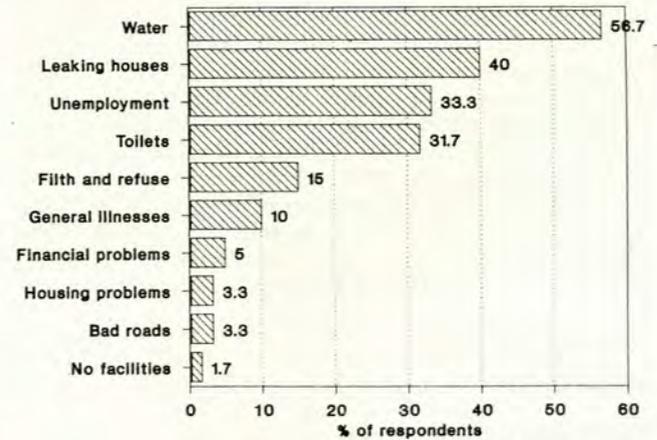


Fig. 2. Community problems in the 4 townships included in the SACLA survey, 1990.

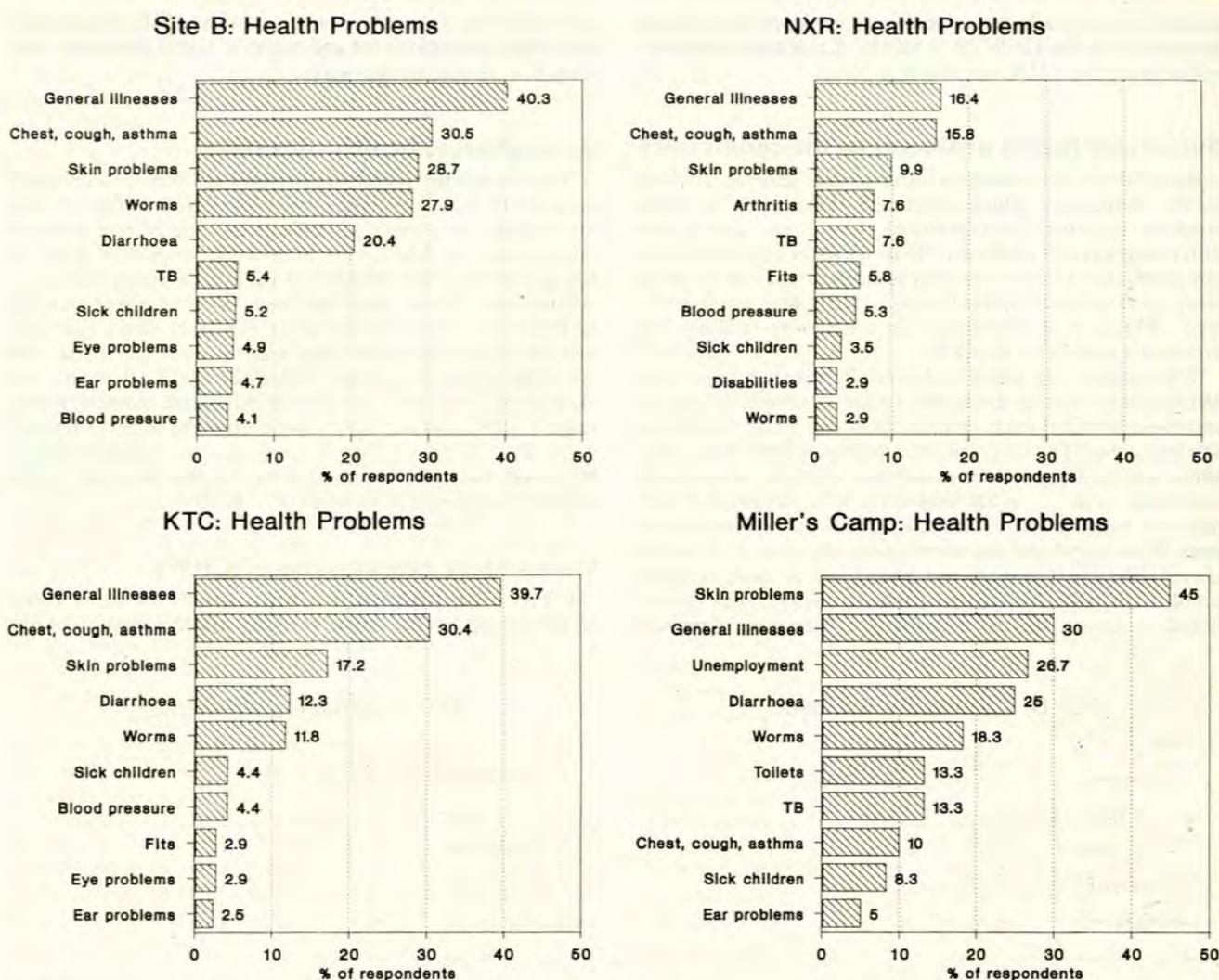


Fig. 3. Health problems in the 4 townships included in the SACLA survey, 1990.

AIDS threat, and high rates of teenage pregnancies). Almost all respondents (98,4%) stated that they would be happy for CHWs to talk to their children about sexuality and to give sex education.

With the exception of 2 respondents, all stated that they would like the CHW to visit their home again.

In an open-ended question, respondents were asked what they would like the CHW to do in their area. Each person could give as many as four suggestions. Fig. 4 presents the responses to this question. Providing health education was the most common request in all areas except NXR. The provision of medical treatment or curative services was less often mentioned. In NXR the provision of community facilities (health services, recreation facilities, creches, civic centre, shops) was most often suggested. In KTC and MC a popular request was that CHWs focus on the problem of filth, refuse and dog excrement in the environment. Attention to housing, water and toilet problems were requests in all areas except NXR. Home visits by the CHW was a request in all areas except Site B.

Discussion

Participatory research

The commitment to participatory research made it necessary to meet and jointly plan every stage of the evaluation process.

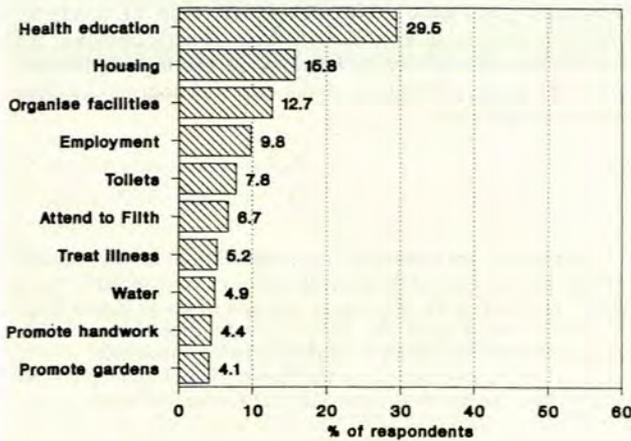
MRC staff would draw up a draft plan for a training workshop and ask for a meeting with SACLA co-ordinators to review the draft plan and change it in such a way that it would be appropriate for the CHWs in terms of concepts, examples, language and methodology. There was an inevitable tension for SACLA between their responsibility as service providers and the time needed to engage in a participatory research process. In order to justify the time spent on research, the evaluation process needed to be shown to be meaningful, educative and useful for the SACLA staff, and the results yielded by the survey needed to be used for management and planning. A qualitative evaluation of the research exercise is being planned.

CHW participation in research

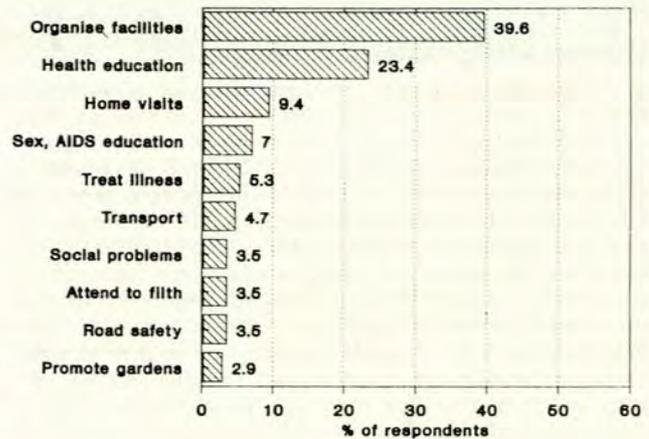
The participation of CHWs in the evaluation of their own work resulted in some difficulties: (i) accuracy was difficult to obtain as CHWs had little previous research experience, and the quality of the data was somewhat compromised; (ii) some CHWs experienced difficulty in distinguishing between gathering information (research) and giving information (health education); and (iii) it was not easy for busy 'first-line' CHWs to allocate blocks of their time for research.

Despite these problems there were important advantages in involving the CHWs in an evaluation of their own work: (i)

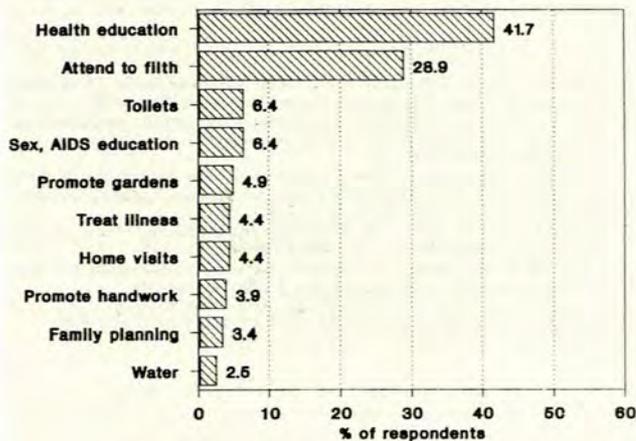
Site B: Expectations of CHW



NXR: Expectations of CHW



KTC: Expectations of CHW



Miller's Camp: Expectations of CHW

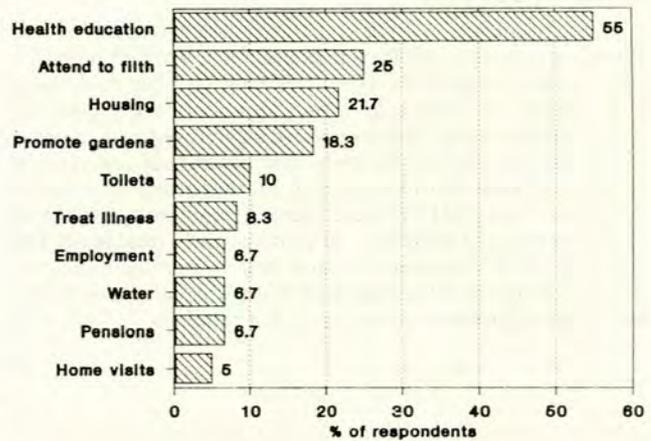


Fig. 4. Community expectations of the CHWs in the 4 townships included in the SACLA survey, 1990.

they believed the results, even those results that they did not expect, for instance the poor knowledge of ORS; (ii) they took the results seriously and felt the need to act on them; and (iii) the process of involvement is educative and promotes understanding. For action-orientated research it is essential to involve those who are expected to act upon research findings and the very process of carrying out an evaluation can be just as important as the conclusions drawn, since involvement in the process itself often induces a better understanding of the activities being evaluated, and a more constructive approach to their implementation and to any future action required.⁵

Evaluation of health education

The survey found that although the promotion of ORS for the treatment of diarrhoea had been an important CHW intervention for the previous 3 years, the communities' knowledge of ORS was poor. In a study conducted in Khayelitsha in 1989 similar results were found.⁶ These results point to the need for new and innovative methods for reaching the community and promoting ORS.

Area differences

MC respondents reported more problems, knew about and consulted the CHW less frequently, and 'scored' lower on the knowledge of ORS. MC is the poorest of the 4 townships, with the worst living conditions. There is a large population and there are only 2 CHWs.

NXR respondents reported less problems, and a different profile of problems and expectations of the CHW. In NXR all residents have toilets and water inside their brick-built houses. They thus do not experience problems relating to the provision of these basic services. SACLA runs special clinics for chronic diseases in NXR, and these may have raised community awareness resulting in residents expressing more chronic health problems.

The coverage by CHWs in KTC was higher than in other areas, and KTC residents more often consulted the CHWs. KTC is no further from state services than the other townships, but the KTC CHWs were the last group to be selected and trained, and SACLA had been able to use its experiences in other areas to improve selection and training processes. Further, KTC has the most organised and representative

community committee, and this may be an important criteria for a successful CHW programme.

Community problems

Many of the community problems and some of the health problems expressed by respondents referred to basic environmental health requirements, such as water, refuse disposal, toilets, and housing. Responses varied by township according to the respective conditions. There is a critical need to address these matters at national and local level.⁷ In the absence of local and national government structures that represent the interests of the majority of residents, no effective 'intersectoral co-operation' is likely between the health project and local or national government sectors to ensure the provision of environmental services. It is therefore appropriate to turn to community organisation strategies around demands for basic services and resources that determine health status (such as water, sanitation, and housing). SACLA's broad interpretation of health and health action enables their CHWs to respond in this way to community needs.

Health problems

Chest problems, asthma and tuberculosis were commonly experienced health problems in households. A recent mortality study in the Greater Cape Town area suggested that pneumonia is becoming the major infectious cause of infant death in South African cities.⁸ Regarding primary prevention, environmental factors, such as domestic and general air pollution, as well as nutrition and birth-weight, are important. For secondary prevention, CHWs could increase community awareness of the meaning of symptoms to promote early treatment. The SACLA CHW programme is also able to provide secondary prevention for the other health problems that were mentioned, for instance diarrhoea, worms, and skin problems.

Conclusion

This study has shown that CHWs are able to conduct a successful evaluation of their activities. This evaluation will form the basis for developing future home visiting programmes, and for planning preventive, promotive, and community development programmes.

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