

SOCIAL CAPITAL CHILD SURVIVAL PROJECT 2006

*W. Odendaal, A. van Niekerk, M. Seedat, E. Jordaan, J. Kallis and P. De Villiers
April 2007*



Western Cape
Department of Health
Weskap Department
van Gesondheid
IsobekweMpho leNtshona-Koloni



CONTENT

	p
Executive summary	2
1. Background	3
1.1 Development of the intervention	3
1.2 A collaborative project	3
2. Objectives and Deliverables	3
2.1 Deliverables	4
3. Research strategy	4
3.1 Site selection	4
3.2 Research design	5
3.3 Adjustments	5
3.3.1 Langa	6
3.3.2 Manenberg	6
3.3.3 Mitchell's Plain	6
3.3.4 Adjusted research design	6
3.4 Sampling	7
3.4.1 Procedure	7
3.4.2 Recruitment of participating households	8
3.4.3 Lost to follow-up	8
3.5 Recruitment of fieldworkers	9
4. Intervention methodology	10
4.1 Home visitor training	10
4.2 Intervention curriculum and implementation	10
5. Risk assessment	11
5.1 Data collector training	11
5.2 Index	11
5.3 Scoring	12
6. Trial profile of sentinel site: Khayelitsha	13
7. Results	13
7.1 Descriptive results at baseline across the sites	14
7.1.1 Household demographics and housing	14
7.1.2 Qualitative report on incidence of unintentional injuries	15
7.2 Khayelitsha as sentinel site	16
7.2.1 Measurement of intervention effect	16
7.2.2 Safety attitudes	19
7.3 Manenberg and Mitchell's Plain	19
7.3.1 Risk profile at baseline	19
7.3.2 Descriptive results at follow-up	20
8. Recommendations and Conclusion	22
References	
Appendixes	

Executive summary

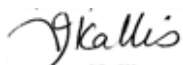
The Social Capital Child Survival Project, hosted by the Western Cape Department of Health and the Crime, Violence and Injury Lead Programme was implemented in four low-income neighbourhoods in the Cape Metropole during 2006. The study aimed to reduce household hazards associated with unintentional injuries, the leading cause of non-natural death to young children in South Africa. It also offered a unique opportunity for the partners to expand their traditional boundaries and expertise, and resulted in the effective merging of their respective social responsibilities. This report gives an overview of the content and implementation processes of the project, and assesses the extent to which project objectives were met.

There were a number of successes to the study, of which the positive risk reduction results in the sentinel site are the most important. The training and employment of local residents as home visitors saw a consolidation of the existing wealth of social capital in those communities. The challenges and less successful activities during the study are critically reflected upon. Lessons learned from these lost opportunities must be turned into experiences that will not only strengthen this programme but other community-based initiatives as well.

With this final report the management team wishes to pay tribute to the Western Cape Department of Health for funding the project and commend their staff for their commitment. We extend our gratitude to all the community members who participated, whether as home visitors or caregivers; to all community-based organisations for their support, and to the donors of safety devices that contributed towards the success of the study. Finally we wish to acknowledge the part that the Biostatistics Unit at the Medical Research Council has played in the project, in particular the consultation offered by Esme Jordaan and the data capturing that was done by Chrismara Guttler.



Ashley van Niekerk
Principal Researcher
Crime, Violence and Injury Lead Programme



Jenny Kallis
Principal Medical Officer
Metropole District Health Services



Trish De Villiers
Deputy Director: Health Promotion
Western Cape Department of Health



Willem Odendaal
Project Manager
Crime, Violence and Injury Lead Programme

1. BACKGROUND

Children are especially vulnerable to unintentionally inflicted injuries, or what is most common referred to as 'accidents'. International and national research indicate that children in low-income neighbourhoods are at greater risk to sustaining such injuries (UNICEF, 2001). Injury surveillance data shows that these 'accidents' account for 6.3% of the 60 000 annual child injury deaths in South Africa (Matzopoulos, 2004). Despite the magnitude of the problem there is a paucity of evaluated prevention programmes in South Africa that address this public health concern.

1.1 Development of the intervention

The Crime, Violence and Injury Lead Programme (CVILP), co-directed by the Medical Research Council and the Institute for Social and Health Sciences at Unisa, developed a home visitation programme (HVP) aimed at the reduction of household risks associated with unintentional injuries in low-income settings. This programme, focusing on burn, poisoning and fall injuries, involved the development of an instrument to measure risks in the home as well as a comprehensive training manual that details an intervention curriculum. In 2003 the HVP was piloted in four low-income communities, and after revision full implementation took place in two of those communities, that is Slovo Park near Johannesburg and Nomzamo, a community on the outskirts of Strand in the Helderberg area. The outcome results proved the HVP to be effective in reducing targeted household risks, and based on these positive results, the CVILP submitted in 2005 a proposal to the Western Cape Department of Health (WCDOH) for replicating the HVP in selected sites in the Cape Metropole.

1.2 A collaborative project

The proposal was accepted in March 2006 and designated the Social Capital Child Survival Project. A management team (Task Team) was set up to implement the programme. The Task Team comprised staff from the CVILP and the WCDOH's Social Capital Project, Metropole District Health Services and Department of Health Promotion and Marketing. Site-specific non governmental organisations (NGOs) were commissioned to serve as conduit organisations for the administration of the home visitors' remuneration and were co-opted to the Task Team (see Appendix A for more detail). The effective integration of staff from the different agencies as well each member's commitment to the project became one of the successes in the project.

2. OBJECTIVES AND DELIVERABLES

Five objectives were detailed in the proposal against which the deliverables of the project were assessed.

Objective One

Implement a home visitation programme that targets childhood injuries occurring in and around the home.

Object Two

Identify common household risks that contribute to child injury.

Objective Three

Reduce childhood injuries and household risks that contribute towards these injuries.

Objective Four

Develop the intervention capacity of a core of home visitation practitioners in selected neighbourhoods in the City of Cape Town.

Objective Five

Implement a communication strategy that briefs local stakeholders, community and provincial partners about the rates of child injury and risks, and promotes the ongoing prioritisation of childhood injury prevention in the City of Cape Town.

2.1 Deliverables

Most of what is to follow in this report deals with how Objectives One to Four were met. The project was implemented in four communities and the visits to households focused on identifying and reducing household risks. In Khayelitsha the outcome evaluation showed a significant reduction of such risks. With respect to the reduction of actual injuries, it can be assumed that because of the reduction in household hazards there will be a decrease in the number of injuries, but a follow-up study is needed to confirm this. The extent to which Objective Four has been met is shown in Table 1. The 'Data Collectors' in the table refers to the fieldworkers that conducted the two risk assessment visits.

Table 1: Number of community members trained

Community	Home visitors	Data collectors	TOTAL
Heinz Park	6	-	6
Khayelitsha	11	11	22
Manenberg	6	7	13
Montrose	10	10	20
TOTAL	33	28	61

This report is part of the deliverables to meet Objective Five. At present feedback meetings to community forums are taking place as well as the printing of a newsletter that will be distributed in the participating communities. In addition the arrangements for a stakeholder meeting at which the results will be presented are in progress. The CVILP extended an invitation to the WCDOH to discuss the continuation of this programme and to promote ongoing prioritisation of childhood injury prevention initiatives in the Cape Metropole.

3. RESEARCH STRATEGY

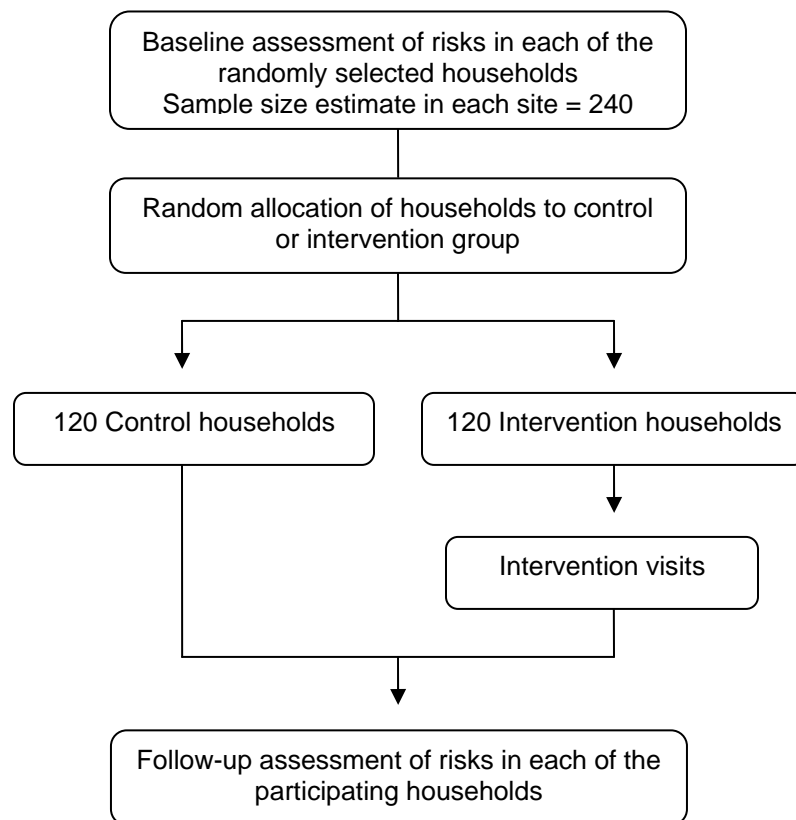
3.1 Site selection

The DOH representatives nominated four communities: Khayelitsha, Langa, Manenberg and Mitchell's Plain. The CVILP conducted visits to specific areas within these communities to establish whether these neighbourhoods were suitable for the study, and to demarcate the geographical boundaries of the identified areas. Consequently a pilot study was conducted in the Manenberg and Mitchell's Plain sites to ensure its suitability for the project. Community health workers administered a questionnaire that consisted of extracts from the risk assessment index that was to be used in the study. The results indicated that the homes presented with the typical injury risks that are addressed by the intervention, and a decision was taken to include the two sites. The following neighbourhoods were identified in the four selected communities:

Endlovini (shack settlement) in Khayelitsha
Joe Slovo (shack settlement) in Langa
Thambo Villiage, Ward 45 (formal housing but a low-income area) in Manenberg
Heinz Park and Montrose Park (pockets of shacks and formal housing but low-income areas) in Mitchell's Plain

3.2 Research design

The study was set to be a randomised control trial, a design that is regarded as best practice to measure the effect of an intervention. In such a design a post-intervention comparison of baseline and follow-up assessments is made between an intervention and control group of participants. Analysis is done on the intention-to-treat principle. The critical element to the design is that recruitment of participants and their allocation to either the control or intervention group are randomly done. The process for this study is depicted below.



3.3 Adjustments

There were unforeseen circumstances that compelled the project's management to alter the design in three of the designated areas. The section below describes the events that led to this as well as the changes effected to the study design.

3.3.1 Langa

Despite concerted efforts, Langa could not be included as a project site. The Task Team's termination of the project in Langa followed the Langa community health forum's concerns and opposition to the recruitment process of community members for the project. This closure was determined by three issues:

- The implementation process was dependent on synchronising activities across the four sites. At the time that the health forum informed the project manager about their opposition to the recruitment process, training already started in the other sites, and the implementation was scheduled to start the following week.
- There were concerns that the pending difficulties around the relocation of parts of the community would have compromised the safety of the community health workers.
- Continuing without the support of the local community structures would only have created resistance in the community.

The chairperson of the health forum was duly informed in writing of the Task Team's decision. All the parties involved in the project, including the Langa health forum, regretted this state of affairs, but it should be seen as a valuable lesson in securing local support for any community-based project. A more detailed account of events can be found in Appendix B.

3.3.2 Manenberg

During the baseline assessment the fieldworkers did not recruit from randomly selected households as specified by the CVILP staff. Two reasons were offered:

- Not finding households that qualified (no children 10 years and younger) and not finding people at home.
- Too many of the selected house numbers were open plots.

The research design was modified by the data collectors and households were recruited non-randomly. Although the sampling for control and intervention households was randomised it was based on an unscientific sampling at baseline. The analysis of the data could therefore only be used for descriptive purposes, but is still useful for local injury control purposes.

3.3.3 Mitchell's Plain

This site was to comprise two areas, Montrose Park and Heinz Park. The baseline assessment could not be done in Heinz Park due to gang violence that erupted at the time of the baseline assessment visits. Consequently the Montrose area comprised only of intervention households with no comparison group. Apart from this the number of participants in Montrose was too small to be used for statistical analysis. The Montrose Park data was therefore only used for descriptive purposes. The study was later on resumed in Heinz Park in an amended manner, which entailed only intervention visits that were paid to recruited households. No baseline or follow-up assessments were done.

3.3.4 Adjusted research design

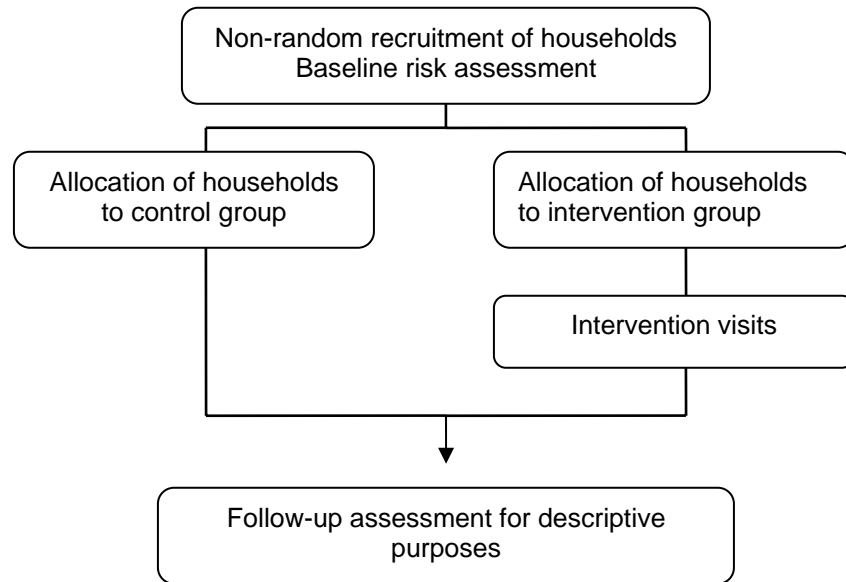
Site A: Khayelitsha

- No changes to the design

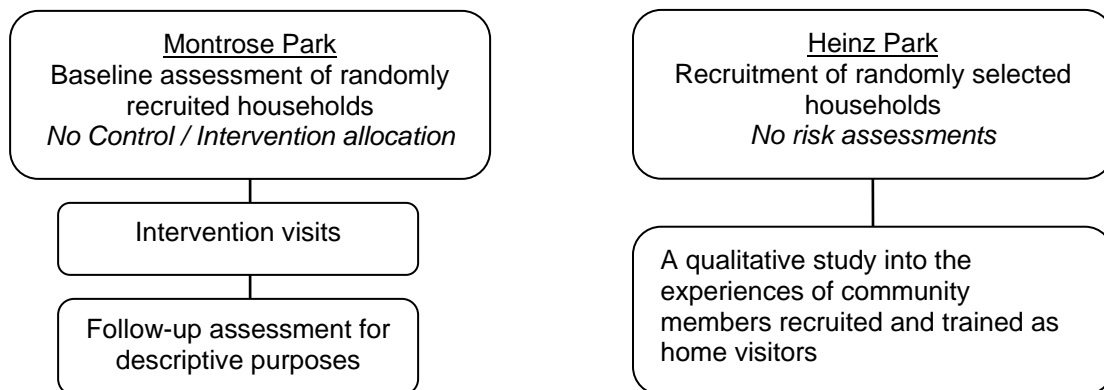
Site B: Langa

- Dropout

Site C: Manenberg



Site D: Mitchell's Plain



3.4 Sampling

Eligible households were families with children ten years or younger living in that house, or visiting there more than once a month, or if the children stayed there during school holidays. The sample size of 240 households per site, with 120 households randomly allocated to control or intervention group respectively, was calculated to allow for an 80% power analysis on a 5% significance level. Below is a description of the protocol that was to be observed in all the sites. All of the sampling was done by the Biostatistics Unit of the MRC.

3.4.1 Procedure

Manenberg and Mitchell's Plain

Street maps for the three target areas in these two communities were obtained from the City of Cape Town. Houses were clustered into blocks, and each plot numbered in these clusters. This was manually done on the maps.

Thambo Village (Manenberg) : 29 blocks with 767 households across the blocks
 Montrose Park (Mitchell's Plain): 9 blocks with 263 households across the blocks
 Heinz Park (Mitchell's Plain) : 26 blocks with 757 households across the blocks; 19 blocks were randomly selected from these.

Each data collector received copies of the marked maps with an initial number of 12 plot numbers randomly selected from the total of plots in each block. The research staff kept the remainder of numbers in reserve in case selected plots could not be recruited. The data collectors were randomly assigned to the blocks.

Khayelitsha

The maps available for Endlovini were not detailed enough to use. A resident from Khayelitsha was recruited and did a hand map which showed every 8th - 10th dwelling to minimize the possible contamination effect that can happen when intervention and control households are in too close proximity. No clustering was done as there were no identifiable geographical boundaries. The same procedure as described above was then followed, with each data collector receiving a map with a list of randomly selected houses for recruitment.

3.4.2 Recruitment of participating households

The data collectors recruited participants by visiting the plot numbers supplied to them. The staff gave supplement numbers to them only when:

- the selected household did not qualify, or did not want to participate
- if nobody was found at that plot after a third visit

This was recorded by the CVILP staff.

For the reasons discussed above, as well as the time constraint placed on the recruitment visits, the sample size of 240 households per site was not obtained. The final number of participating households in each community is summarised below.

Table 2: Number of participating households at baseline

Site	I	C	n
Khayelitsha	112	99	211
Manenberg	61	56	117
Mitchell's Plain	48	0	48
Heinz Park	-	-	60
TOTAL	221	155	436

Note: Heinz Park did not receive any assessment visits; therefore these households were not allocated to control or intervention groups.

3.4.3 Lost to follow-up

The percentage of households lost to the study at the follow-up assessment was within acceptable rates that can be expected in a community-based study. The loss in Khayelitsha was notably smaller than in the other two sites (see tables below).

Table 3: Lost to follow-up in each site

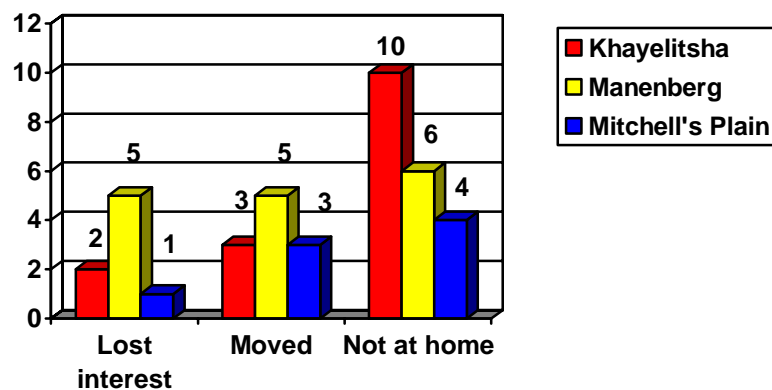
Site	I	C	n (%)
Khayelitsha	11	8	19 (9.00%)
Manenberg	10	12	22 (18.80%)
Mitchell's Plain	8	0	8 (16.66%)
Heinz Park	-	-	-
TOTAL	29	20	49 (13.03%)

Table 4: Number of participating households at follow-up

Site	I	C	n
Khayelitsha	101	91	192
Manenberg	51	44	95
Mitchell's Plain	40	-	40
Heinz Park	-	-	60
TOTAL	192	135	387

There was a greater flux of participating households in Manenberg and Mitchell's Plain that relocated during the study than in Khayelitsha. It should also be noted that fewer people in Khayelitsha decided to terminate participation because they lost interest in the programme. The other reason for loss to follow-up was data collectors that could not find the caregivers at home in the time allowed for completion of the follow-up assessment, mainly because the data collectors stayed outside the areas and also because they could not pay visits after hours. The graphs below summarise the reasons for leaving the programme.

Graph 1: Reasons for lost to follow-up in each site



3.5 Recruitment of fieldworkers

This was done by the respective Social Capital coordinators in collaboration with the NGOs, with the exception of Heinz Park where a community leader did the recruitment. The majority of fieldworkers were already employed by Social Capital and NGOs as community health workers. These recruits were screened by the CVILP by means of a questionnaire and interview and assigned to either the data collector - or intervention visitor team.

Only two of the intervention team members left the programme and both indicated that it was due to personal circumstances. It was amongst the data collectors that a serious dropout (65%) was experienced prior to the follow-up assessment visits; five in Khayelitsha, one in Manenberg and all of the Mitchell's Plain data collectors. With respect to the latter, the dropout was related to the unsafe situation in Heinz Park. As for the other data collectors it was reported that they had lost interest in the programme. The follow-up assessment in Mitchell's Plain was done by the CVILP staff and two of the Manenberg data collectors.

4. INTERVENTION METHODOLOGY

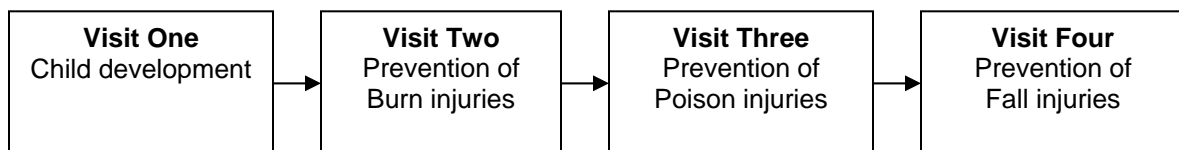
4.1 Home visitor training

The sequence of the training and implementation was that the visitors received the training required for a particular visit and then conducted the visit. The allocation of houses to visitors was randomly done to counter any bias that could have resulted if the visitors were to select their houses.

Training took place over two days and was conducted at venues in the sites. Day One was spent on content training and Day Two comprised of the staff assessing each visitor's application of this training via role-plays. These assessments were time consuming but a useful tool to ensure that the intervention curriculum would be delivered as intended. The attendance of the training was more than satisfactory in all four sites. The CVILP team was meticulous in ensuring that should a visitor be absent, that he or she was properly assessed prior to the visits.

4.2 Intervention curriculum and implementation

This phase commenced in middle August and was completed by the end of October. Three weeks were allowed for the completion of each of the respective intervention visits. The four intervention visits were sequenced as follows:



The activities for each of the visits were as follows:

- Introduction of the topic.
- The use of a photo depicting typical risks on which the visit focused; encouraging caregiver participation. For the Child development visit the visitors had a flipchart depicting the developmental stages of children.
- The sharing of safety information, and completion of a risk checklist with the caregiver. These checklists alerted the caregivers to risks, and prompt them to make changes that could reduce the specific risks. With the Burns visit, appropriate information leaflets, of which one specifically dealt with the safe use of gas appliances, were distributed.
- With the Burns and Poison visits, caregivers were supplied with a safety device appropriate to the topic (see Table 5.1 and 5.2). The visitors were trained to demonstrate the proper use of this. At the Falls visit each household received a small

first aid kit that consisted of a bottle of Savlon, cotton wool and plasters. This was a gift and not a device that would prevent fall injuries.

- In an attempt to involve the children, sketches of households depicting various injury risks were distributed and the children were asked to colour these in. Each child received a box of crayons for this. An example can be found in Appendix C.
- At the closure the caregiver was asked if there were pressing personal issues that he/she wished to discuss. Although it was not the intent of the programme to address the full spectrum of social concerns in the community, the visitors were trained to refer such caregivers to appropriate service rendering organisations, and supplied each household with a referral directory.

Table 5.1: Safety devices and leaflets: Burns visit

Safety devices	Leaflets
<ul style="list-style-type: none"> • A roll of insulation tape for safer connection of electrical extension cords • A burn shield for emergency treatment • Safety nails for attachment of electrical cords to the wall or floor 	<ul style="list-style-type: none"> • Risks to burn injuries and first aid treatment • ‘Candle in a jar’ that demonstrates a safer way to use candles • Safety tips for the use of gas appliances

Table 5.2: Safety devices: Poison visit

Safety devices
<ul style="list-style-type: none"> • A childproof cap with a warning label for a container in which paraffin is stored. The Khayelitsha site also received a 2 liter plastic container for storage of paraffin • A bag and hook that could be used for safe storage of poisonous substances such as medicine

5. RISK ASSESSMENT

5.1 Data collector training

Training of the data collectors on the administration of the risk assessment instrument took place over two days at the MRC premises, and was jointly attended by data collectors from the three sites. The CVILP ensured that anyone who missed this training was individually briefed and assessed before they started with the fieldwork.

5.2 Index

In consultation with the biostatistician at the MRC, minor changes were made to the standardised questionnaire that was developed by the CVILP. The changes were:

- Streamlining the demographic information section.
- Replacing the quantitative reporting of actual unintentional injuries with a qualitative account of such injuries.
- Inserting a new section that assessed risks caused by the use of gas appliances
- Moving some items to more appropriate sections.

No substantial changes were made to the items assessing the risks. The final index was an 11 pages questionnaire with 115 items, and comprised the following sections (see Appendix D for more detail).

Table 6: Risk assessment index

Section (number of items)	Examples
Caregiver: demographic information (10)	Age; Employment; Education
Caregiver: safety attitudes (8)	"Can accidents be prevented?"
General safety practices related to burn injuries (12)	"Where is the child when cooking is done?"
Risks to burn injuries caused by electrical appliances (20)	"Is the kettle cord hanging over the counter top?"
Risks to burn injuries caused by paraffin appliances (17)	"Is the paraffin stove placed on an unstable surface?"
Risks to burn injuries caused by gas appliances (6)	"Is the gas stove placed on the floor?"
Risks to poisoning (18)	"Are medicines stored over 1 meter in height or in a locked cupboard?"
Risks to fall injuries inside the house as well in the outside area (18)	"Are sharp edges uncovered on furniture?"
Injury report (1)	"What happened: where, when and how?"

5.3 Scoring

Risks were scored as a 1 and No risks as a 0: the lower the scores the fewer risks were found in the home. The scoring of the number of risks related to burns, poisoning and fall injuries were done by aggregating items in the different sections. This is summarised in the table below.

Table 7: Aggregated scores of risks

Burns: Safety practices	14 items
Burns: Electrical	20 items
Burns: Paraffin	19 items
Burns: Total	Aggregated: Safety practice; Electrical; Paraffin 53 items
Poison	18 items
Falls	18 items
Total Score	Aggregated: Burns: Total; Poison; Falls 89 items

The Gas appliances section was excluded from analysis as the distribution of gas stoves took place during the time of the baseline assessment in Khayelitsha and Manenberg. Consequently some households had only received stoves at the follow-up and were not assessed for this during the baseline. There was no indication that gas stoves were distributed in Mitchell's Plain. The table below shows the increase of gas stoves in participating households.

Table 8: Distribution of gas stoves

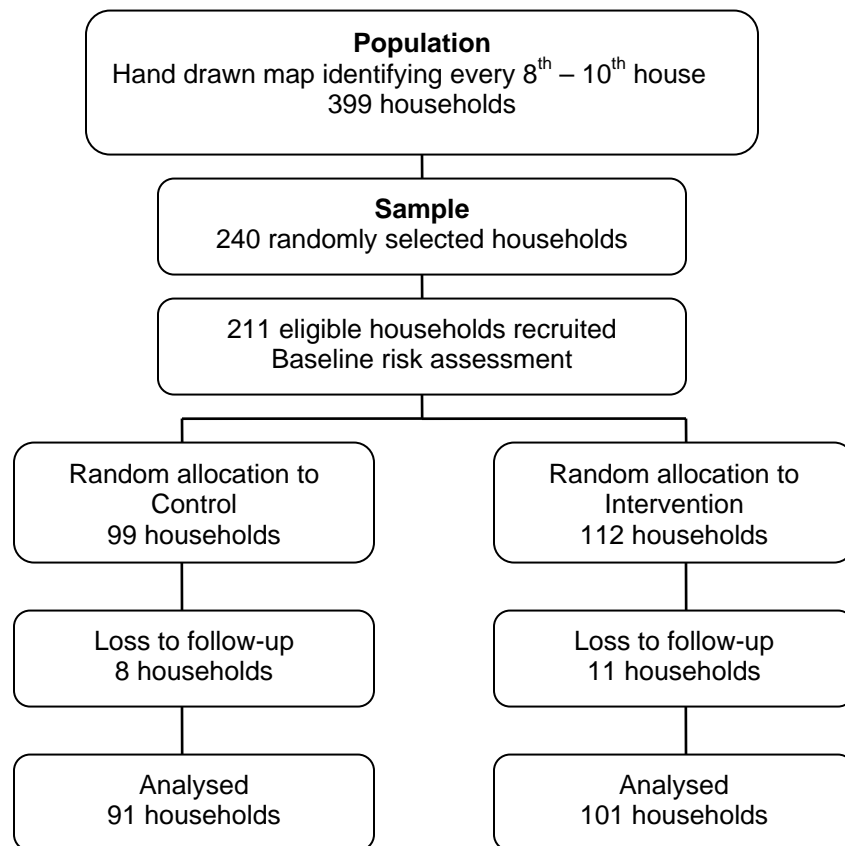
	Gas stoves in home	
	At baseline	At follow-up
Khayelitsha	8 %	55 %
Manenberg	50 %	53 %

Although the safe use of gas appliances is part of the intervention curriculum, and as such was addressed in the Burns visit, the increased availability merits a greater emphasis to ensure that these appliances will be used in a safe way.

6. TRIAL PROFILE OF SENTINEL SITE: KHAYELITSHA

Khayelitsha is the only site where the data has been analysed for impact, and for this reason the trial profiles of the other sites are not given here.

Khayelitsha



7. RESULTS

As for the reasons stated earlier, the results for Manenberg and Mitchell’s Plain could not be used to make inferences about the impact of the intervention. These results are presented as descriptive information on prevailing risks in participating households only,

as there is no base for generalising this to the larger population of homes in these areas. However, comparing these descriptive reports with that of Khayelitsha at baseline provided useful information on the most appropriate setting for this intervention.

7.1 Descriptive results at baseline across the sites

7.1.1 Household demographics and housing

All of the sites were low-income areas, but as depicted in the photos below, the housing conditions in Khayelitsha were more adverse than in the other sites.

Photo 1: Heinz Park



Photo 2: Khayelitsha



Photo 3: Manenberg



Photo 4: Montrose Park



The table below summarises the demographic characteristics of the caregivers in the participating households.

Table 9: Demographic characteristics across the sites

Main caregiver	Khayelitsha n = 204	Manenberg n = 108	Mitchell's Plain n = 43
15 years and older	95%	89%	85%
<u>Relationship to child</u>			
Mother	80%	54%	75%
Other (Ex. Father, grandmother)	20%	46%	25%
<u>Educational level</u>			
No schooling and Primary school	17%	19%	29%
Secondary and After school Training	83%	81%	71%
Unemployed	86%	60%	85%
Single parent household	42%	55%	44%
Between 3 and 6 people live in house	80%	77%	71%
One room house	6%	37%	46%
Unsafe divider: kitchen	97%	28%	64%

7.1.2 Qualitative report on incidence of unintentional injuries

The following information provides more support for the claim that prevention initiatives should be tailored towards more informal contexts. These reported injuries happened between 1999 and March 2006.

Table 10: Incidence of unintentional injuries

Site	Number of injuries ever	Mean age
Khayelitsha	33	3.3 years
Manenberg	16	5.3 years
Montrose	10	4.2 years
TOTAL	59	4.3 years

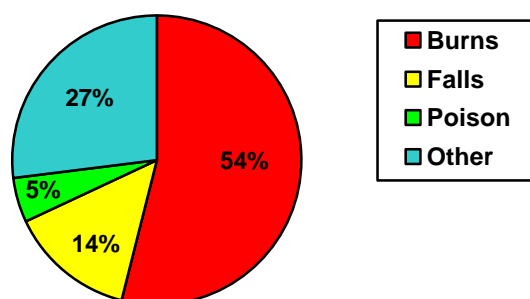
Burn injuries caused by hot liquids was the most common injury, accounting for 34% of the reported injuries. The mean age across injury-type is presented below.

Table 11: Mean age across injury-type

Injury	Mean age
Burns	3.1 years
Poison	1 year
Falls	5.5 years

The graph below gives a breakdown of the types of injuries.

Graph 2: Injury type and prevalence across the sites



Of the “Other” injuries sustained, traffic related injuries were the highest (32%), followed by cuts (25%). This category also included bitten by a dog, thrown with a stone, or a heavy object like a gate that fell on the child.

7.2 Khayelitsha as sentinel site

7.2.1 Measurement of the intervention effect

The results presented below summarise the assessments at baseline and follow-up, and show the impact of the intervention. The intervention impact was calculated as the difference in mean scores for the intervention group minus the control group means at post-intervention assessment. The baseline results show no difference between control and intervention households, indicating successful randomisation.

Table 12: Khayelitsha results

	Baseline (n = 211)					Follow-up (n = 192)					
	C (n = 99)		I (n = 112)			C (n = 91)		I (n = 101)		Intervention effect	
	Mean	SE	mean	SE	p	mean	SE	mean	SE	mean difference	95% CI
Total: Score	27.7	0.80	26.2	0.75	0.15	23.9	0.92	20.3	0.89	3.64	1.12 to 6.16*
Burns: Elec	5.7	0.31	5.0	0.27	0.09	3.9	0.29	3.0	0.27	0.93	0.15 to 1.70*
Burns: Par	4.0	0.25	3.8	0.24	0.50	3.3	0.23	2.6	0.24	0.71	0.04 to 1.37*
Burns: Other	7.2	0.24	7.0	0.19	0.46	7.1	0.21	6.8	0.19	0.25	-0.31 to 0.80
Total: Burns	17.0	0.50	15.8	0.49	0.10	14.3	0.57	12.4	0.53	1.88	0.35 to 3.41*
Poison	4.3	0.24	4.0	0.25	0.40	4.0	0.25	2.9	0.23	1.10	0.44 to 1.77*
Falls	6.5	0.26	6.4	0.23	0.76	5.6	0.30	5.0	0.29	0.65	-0.16 to 1.47

Note: The * at the Intervention effect indicates a significant difference between control and intervention households. This means that for those risks it can be concluded with 95% confidence that the reduction was due to the intervention delivered by the home visitors.

Baseline results show that the highest risks were observed for burn injuries and in particular risks resulting from unsafe household practices such as having a child on the lap when eating or drinking hot food or liquids. This resonates with the information on injury incidences that showed burns, in particular those that resulted from hot liquids, as the most common type of injury sustained by the children. The other two aggregated

burn scores, Burn: Electrical and Burns: Paraffin relate to risks associated with either unsafe use of electrical and paraffin appliances respectively, or that the appliances itself were unsafe because of exposed wiring or the like. Despite the high usage of paraffin (in 80% of households) it appeared that electrical appliances and its use posed more risks (see photos below). This should be treated as an indicator that greater emphasis be put on this component of the intervention curriculum. The risks to poisoning were the lowest.

Photo 5: Kettle on unstable surface



Photo 6: Unsafe wiring

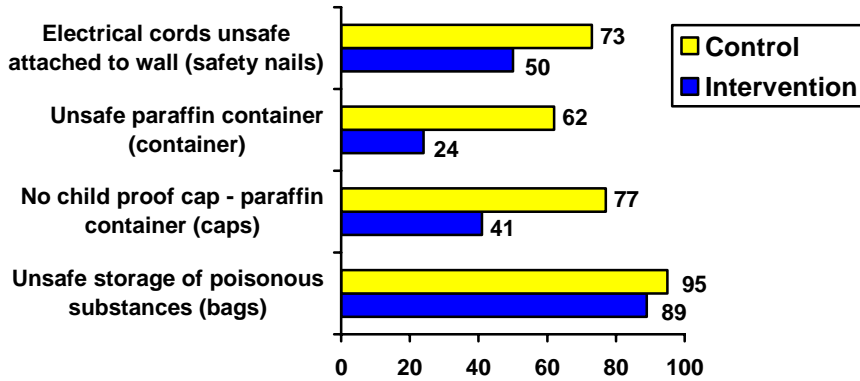


For all the household hazards a decrease was observed for the intervention households. What is most encouraging is that apart from risks pertaining to general household practices (Burns: Other), and risks to fall injuries, all of the resulted decreases were significant. This is consistent with the results of the 2004/5 study which was conducted in two other low-income communities.

Looking at the pre - post intervention comparison in the control households, the reductions observed can partly be ascribed to the fact that the baseline assessment might have alerted caregivers to risks in their homes which may have led to self-initiated changes, or that the caregivers were more 'questionnaire wise' at follow-up. It can also not be excluded that these caregivers may have had contact with their intervention counterparts which could have resulted in safer practices in the control households.

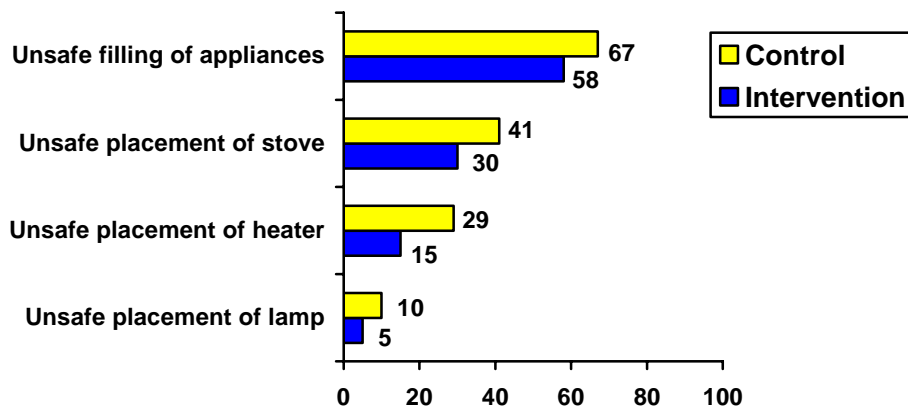
It appears that the safety devices (Table 5.1 and 5.2) contributed to the reduction in risks, most notably in the following risks that such devices could be used.

Graph 3: Khayelitsha: Effect of safety devices



These items refer to the four safety devices that were distributed; these were safety nails for attaching cords to walls, a labeled 2 liter plastic container with child resistance cap and a bag with hook for safer storage of poisonous substances. Of these, the bags were the least effectively used. Visits to the houses showed that the caregivers were more likely to use the bags for shopping than for what it was meant. Although the safety devices cannot account for the remainder of risks that were measured in each of the categories, it can be reasoned that having these devices might have served as a reminder to the caregiver to be more cautious when using for example paraffin or electrical appliances. Having a safe container for paraffin might have alerted the safer use of paraffin in general, which is shown in Graph 7.

Graph 4: Khayelitsha: Unsafe use of paraffin appliances



The more challenging categories of risks to change were general safe practices and risks to fall injuries. The former refers to risks such as having the child on the caregiver’s lap while the caregiver is eating or drinking something hot, or having the child in the kitchen when the cooking is done. A possible reason for not having significant reductions for these hazards may be that those changes could not have been demonstrated as was the case for example with helping the caregiver to identify a safer place for the paraffin stove when used. Most of the risks to falls required structural changes to the flooring and outside areas which limited the possibilities for changes.

From the current results it can be concluded that this programme is an effective intervention strategy to reduce the household risks associated with unintentional injuries to young children.

7.2.2 Safety attitudes

The caregivers had to answer eight items on a Likert scale with five options ranging from 'Strongly agree' (1) to 'Strongly disagree' (5) on each of the eight statements. The items were aggregated into the following two indicators:

Positive safety attitude

The statements were: a) My house is as safe as it good be, and b) Many accidents can be prevented. A low aggregated score indicates a positive attitude.

Disablers to injury prevention

The statements related to the caregivers' perceived ability to prevent injuries and focused on a) not having enough money, b) being too tired, c) not having enough time, and d) disobedient children. A low aggregated score indicates that these issues make it difficult for the caregiver to prevent injuries.

Table 13: Caregiver's attitude towards safety in the house

Main caregiver's safety attitudes	Baseline mean (SD)	Follow-up	
		C mean (SD)	I mean (SD)
Positive safety attitude (lower score = positive)	4.4 (2.81)	3.9 (3.02)	3.2 (2.82)
Disablers to prevent injuries (lower score = many disablers)	11.0 (6.20)	10.3 (6.53)	10.8 (7.20)

There was an improvement in safety attitudes for both groups, but more so for the intervention caregivers. This should be read with some caution as the change was not measured at the level of significance. Although a reduction in perceived barriers to prevent injuries from happening would have been encouraging, the measured increase may not be without meaning. It is possible that the home visits raised the caregivers' awareness to the requirements for safer homes, and that the caregivers realised their underperformance towards this goal. These scales did not measure any changes that could be objectively observed and were reliant on the subjective perceptions of the participants.

7.3 Manenberg and Mitchell's Plain

The following descriptive information was measured at baseline and follow-up in these two sites. All of the discussion refers only to participating households and the information cannot be generalised to the broader parts of these communities.

7.3.1 Risk profile at baseline

The table below presents combined scores measuring risks associated with the three types of injuries targeted in the programme.

Table 14.1: Manenberg and Mitchell's Plain at baseline

	Manenberg	Mitchell's Plain
	mean	mean
Risks to Burns	9.4	8.3
Risks to Poisoning	2.1	0.6
Risks to Falls	3.8	4.5
Total risks scores (89 items)	15.3	13.3

With respect to hazards that can cause burn injuries, the following was found.

Table 14.2: Breakdown of risks related to burn injuries

	Manenberg	Mitchell's Plain
	mean	mean
Burns: General unsafe practices	4.2	3.7
Electrical appliances	3.3	4.4
Paraffin appliances	1.9	0.2

Comparing these scores with risks measured in Khayelitsha it appears that the participating houses in Manenberg and Mitchell's Plain presented a safer environment with fewer household hazards. It is only with respect to electrical appliances that there is some resemblance between these two sites and Khayelitsha. The following examples, extrapolated from a breakdown of the main risk categories, support this:

- The use of paraffin in Khayelitsha is much higher (80%) than in the Manenberg (64%) and Mitchell's Plain (3%) homes. This reduces not only risks to burn injuries but also to poisoning that emanate from having paraffin appliances in the home.
- It is common practice in informal settlements to illegally 'tap' electricity, which may explain why the unsafe use of electrical cords is much higher in Khayelitsha (86%) than what was found in the homes from Manenberg (52%) and Mitchell's Plain (44%).
- In the formal settlements the plot on which the house stands is likely to have been leveled, whilst that of the informal houses is left as it was prior to building the shack. This reduces the risks to fall injuries, illustrated in the observation that 67% of houses in Khayelitsha had uneven outside areas, opposed to the 34% in Manenberg and 42% in Mitchell's Plain homes.

7.3.2 Descriptive results at follow-up

Mixed results were obtained in those two sites. Although no conclusions with respect to intervention effect can be made, the findings provide an indication of the risk profiles in these two areas. The following tables and graphs show the comparison between the control and intervention households (for Manenberg), and for Mitchell's Plain between baseline and follow-up. A selection of items that presents risks to the three types of injuries addressed in the programme is presented below.

Manenberg (Thambo Village)

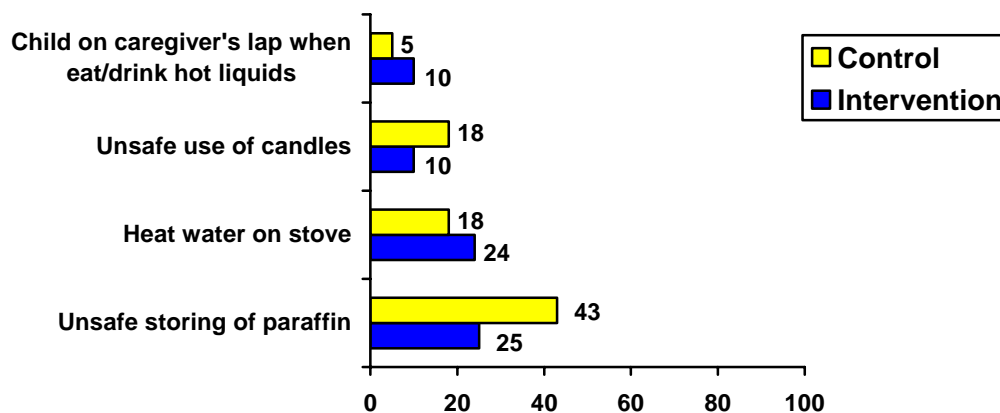
The table below presents a breakdown of burn-related risks as well as the aggregated risk scores for poisoning and falls.

Table 15: Manenberg comparison at follow-up

	Baseline	Follow-up	
		C mean	I mean
Burns: General unsafe practices	4.2	3.7	3.4
Electrical appliances	3.3	3.4	3.5
Paraffin appliances	1.9	1.2	1.5
Poisoning	2.1	1.0	0.9
Falls	3.8	3.3	3.2

With the exception of risks related to the use of electrical appliances, the follow-up showed a decrease in risks. However, this cannot be attributed to the intervention. The graph below also shows that for some items the reduction was bigger in the control group than in the intervention households.

Graph 5: Manenberg scoring on individual items



Mitchell's Plain (Montrose Park)

The table and graph show a comparison between scores obtained at baseline and follow-up for the same households.

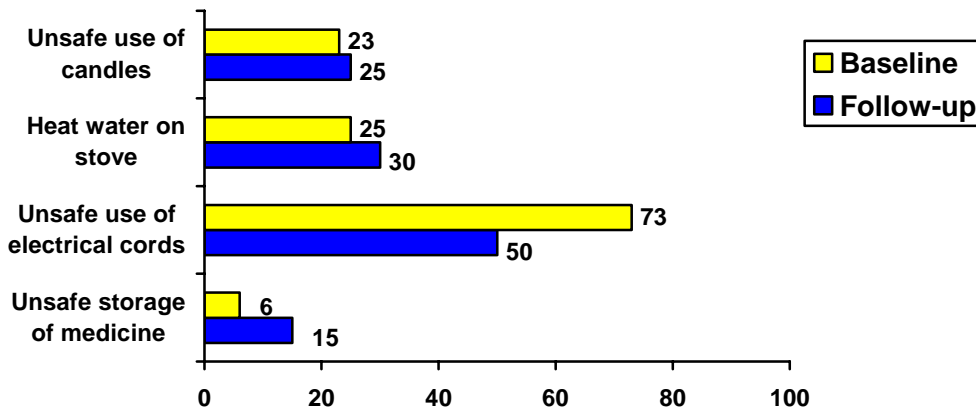
Table 16: Mitchell's Plain comparison between baseline and follow-up

	Baseline	Follow-up
Burns: General unsafe practices	3.7	4.0
: Electrical appliances	4.4	3.0
: Paraffin appliances	0.2	0.0
Poisoning	0.6	0.8
Falls	4.5	4.6

The reverse effect of the intervention, with the exception of the use of electrical and paraffin appliances, was measured at follow-up (see graph below). The reason might be

because the follow-up assessment was done by a different team of data collectors; CIVILP staff and members from the Manenberg team. It seemed as either the caregivers responded differently to them, or these data collectors applied the risk index more rigorous than was the case at baseline.

Graph 6: Mitchell's Plain scoring on individual items as %



8. RECOMMENDATIONS and CONCLUSION

Based on the experiences during the implementation, the following recommendations may serve to strengthen the programme:

- Many of the home visitors were also involved with other obligations as community health workers employed by the various NGOs. The notion of a multi-skilled home visitor therefore seems to be a feasible option and consideration should be given to include this programme as part of other home-based services delivered by community-based agencies.
- The Langa experience emphasises the importance of getting consent and support from community leaders.
- Home visitors should reside in the specific area of the community that has been selected for the programme, and be within walking distance to participating households.
- A community-based NGO should be targeted to become a project partner. Their assistance with community entrance, recruitment of home visitors and logistics such as training and supervision venues are critical for effective programme implementation.
- The most important issue related to retaining home visitors is their remuneration. Home visitation is a demanding commission and this should be reflected in their remuneration. All related administrative issues must be in place prior to the start of the programme.
- Concomitant to this is regular and proper supervision for the duration of the programme. The difficulties experienced during the baseline assessment in Manenberg with fieldworkers not observing the protocol, underscore the need for close monitoring of all implementation processes. In addition visitors will always have to deal with social problems such as abuse in the home, and supervision is an appropriate debriefing opportunity for them.

- The proven impact of safety devices that complements the educational and enforcement components of the visits highlights its importance. Other devices than what was used in this study can be considered, provided that it is context appropriate. As was the case in this study, donations will save on the costs.
- The present drive to save on electricity saw a wide scale introduction of gas stoves in many communities. This necessitates a greater emphasis in the intervention curriculum on the safe use of gas appliances, and more research is needed to explore the impact that these new initiatives hold for households.
- This programme can be implemented without the outcome assessment component, although it is advised that ad hoc assessments be conducted. However, a rigorous and systematic evaluation of implementation processes is necessary to ensure a high level of curriculum fidelity.

A limitation of this study was the failure to assess the effectiveness of the programme in more formal settings like Thambo village in Manenberg and Montrose Park in Mitchell's Plain. However, the apparent difference in levels of risks measured at baseline between these two sites and Endlovini may indicate that this programme is more appropriate for informal contexts with typical shack dwellings where paraffin is commonly used.

The credibility of this home visitation programme to effectively reduce household hazards associated with unintentional injuries to young children has been confirmed in the results in Khayelitsha. These results clearly showed, given the sound intervention curriculum and accompanied training materials, that the programme can be implemented with success in similar informal low-income settings, with local community members recruited and trained to become paraprofessional home visitors. Although the training and supervision was done by the CVILP staff, there is no reason to believe that other agencies will not be capable of successfully replicating this programme.

References

United Nations Children's Fund (UNICEF). (2001). *A league table of child deaths by injury in rich nations. Innocenti Report Card No. 2*. Florence: UNICEF, Innocenti Research Centre.

Matzopoulos, R. (2004). A profile of fatal injuries in South Africa. Fifth annual report 2003 of the National Injury Mortality Surveillance System. Cape Town: MRC-UNISA Crime, Violence and Injury Lead Programme.

Appendix A: Task Team

Ashley van Niekerk: CVILP

Principal investigator

- Oversee the implementation
- Ensure that scientific practices are upheld

Esme Jordaan: Biostatistics Unit, Medical Research Council

Bio-statistician

- Research design
- Sampling and participant recruitment procedures
- Data analysis and interpretation

Arrie Odendaal: CVILP

Project manager

- Chairing the Task Team
- Mapping and sampling
- Coordinate and manage the daily activities of the implementation
- Book keeping of expenditures according to the approved budget
- Supervise the data collection and intervention phases
- Assessment interviews with community health workers
- Coordinate translation of relevant programme materials
- Oversee the development of secondary research protocols and activities
- Data analysis

Jillian Hill: CVILP

- Training officer
- Serves as administration officer in the CVILP office
- Assessment interviews with community health workers
- Manage the implementation in two sites
- Design, implement and analyse a study that evaluates the impact and challenges of the training component of the project

Tlaji Maruping: CVILP

- Assistance with supervision
- Assistance with data collection

Dr. Jenny Kallis: Metropole District Health Services

- Serve as liaison officer between the CVILP and Social Capital coordinators
- Oversee the recruitment process of community health workers
- Coordinate the administration and remuneration of community health workers

Trish de Villiers: Western Cape Department of Health Promotion

- Assisting with programmatic administration
- Ensure that the collaboration process stays on track

Dr. Vindra Reddy: Metropole District Health Services

- Assistance with administrative requests from CVILP
- Assistance with dr. Kallis's tasks

Social Capital Project coordinators and NGO representatives in the sites

Khayelitsha

Sister Lulu Mtshiselwe (Social Capital)
Vukile Sityana (Social Capital)
Clairissa Arendse (PPASA – local NGO)

Langa

Brenda Skelenge (Social Capital)

Manenberg

Sister Madenia Hoosain (Social Capital)
Molly Clayton (Social Capital community health worker)

Mitchell's Plain

Sister Isabel Manuel (Social Capital)
Abigail Jacobs (Social Capital)
William Charles (YMCA – local NGO)

Responsibilities:

- Recruitment and remuneration of community health workers
- Assist CVILP with implementation activities
- Assistance with supervision of community health workers during data collection and intervention

Participating NGOs

Khayelitsha

Planned Parenthood Association South Africa (PPASA)
Children Resource Centre (CRC)

Mitchell's Plain

Young Men Christian Association (YMCA)
Children Resource Centre (CRC)

Manenberg

Child Welfare

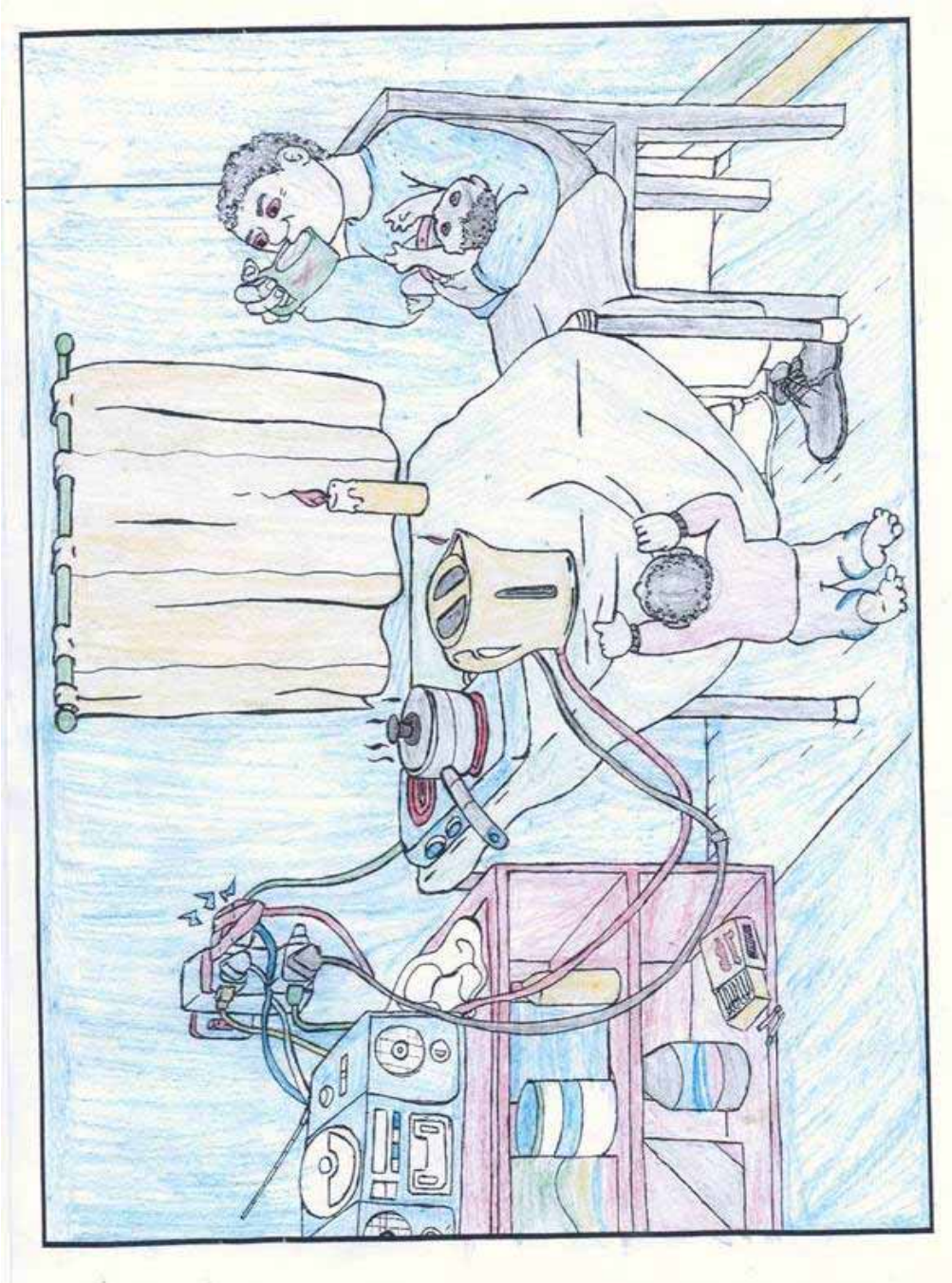
Appendix B. Termination of Langa

The coordinator of the Langa community health workers arranged for the project manager to present the project to the health forum on the 15th of April, but the forum cancelled this meeting. During May and June the Task Team members for Langa proceeded with recruiting community members, as was the case in the other sites. In early June, the coordinator met again with the forum and introduced the project, at which time they gave their consent for the project. It was only on the 15th of June when the project manager formally presented the project to the forum on behalf of the CVILP that they claimed to be uninformed that community members were to be employed as fieldworkers. Consequently they met again with the Task Team representatives and decided on a process of recruitment, with two forum members that were to assist the project staff in recruiting members. However, on the day that the first phase training was about to start, the chairperson and another forum member turned up at the training. They reviewed the list of names and were still dissatisfied with the recruits, and only accepted the existing four Social Capital community health workers, but dismissed the other recruits. The project manager had to cancel the training, consulted with the principal researcher, and subsequently the matter was referred to the Task Team.

At the time that the training was cancelled, training in two of the other sites was already completed, and in progress in the third site. If the recruitment were to be redone, this time by the health forum, it would have created a situation where the fieldwork has started in the other sites while the first phase training would only be starting in Langa. The option of postponing the implementation was considered, but the NGOs employing the community health workers in the other communities had already scheduled their other activities according to the project's implementation schedule.

In retrospect it is evident that the reality of unemployment in low-income communities would always cause the local gatekeepers to be suspicious of the recruitment processes when stipends are offered. This may explain the way in which the Langa health forum reacted to the Social Capital Child Survival Project; they were not opposing and disputing the merits of the project, but wanted the project management to abide by their way of recruitment.

Appendix C: An example of the drawings given to the children



Appendix D: Risk assessment index

Demographics of caregiver

Age; relationship to child; education; employment; marital status

Safety attitude of caregiver

8 items:

- positive about safety: accidents can be prevented; my house is safe
- disabling factors to prevent injuries: not enough money; too tired; not enough time to look after child; disobedient child

Six sections on household risks to unintentional injuries

Safety practices related to burn injuries

- What parents do: matches within reach; preparing water for bathing; children left alone; where is the child when food is prepared; pot handles when cooking; use of candles and long table cloths
- Physical condition in house: room dividers in one room houses

Risks to burn injuries caused by electrical appliances

- Condition of appliances used
- Placement of appliances when in use (cord, kettle, iron, TV/radio, heater)

Risks to burn injuries caused by paraffin appliances

- Safety practices around filling, storage, and if stove is used as heater
- Placement of appliances when in use (stove, heater, lamp)

Risks to burn injuries caused by gas appliances

(This section has been introduced because gas stoves had been distributed in Khayelitsha and Manenberg during the baseline survey.)

- Placement of appliances when in use (stove, heater, lamp)
- Matches lit after turning gas appliance on

Risks to injuries caused by poisoning

- Substances commonly used in the home that can cause poisoning were identified, ex: medicine, beauty products, cleaning products, pesticides; an item on the condition of the paint was included.
- Are these stored in a safe way, i.e. labeled, locked away and child resistant cap

Risks to fall injuries

- Is there proper supervision for children 1 >< 5 in risk situations ex: unattended on a high surface or playing outside where they can climb onto high objects
- Check on surfaces that can cause injuries ex: loose rugs, uneven, slippery or steps. The section that covers risks to falls outside the house is incorporated.
- Identify furniture with sharp corners as risks
- Storage of sweets, toys that can lead to fall ex: if stored on a high shelf

Appendix E: Donors



Paraffin Safety Association
Southern Africa

2 liter paraffin container
with child resistant cap

Dept of Health Promotion and Marketing – MDHS
Hooks for bags

Levtrade
First aid for burn injuries



Burns information leaflet
and child resistant caps

CAPFSA
CHILD ACCIDENT PREVENTION FOUNDATION OF SOUTHERN AFRICA



Bags for safe storage

Johnson & Johnson
(PTY)LTD

First aid kit