

# Developing a logic model for youth mental health: participatory research with a refugee community in Beirut

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Although logic models are now touted as an important component of health promotion planning, implementation and evaluation, there are few published manuscripts that describe the process of logic model development, and fewer which do so with community involvement, despite the increasing emphasis on participatory research. This paper describes a process leading to the development of a logic model for a youth mental health promotion intervention using a participatory approach in a Palestinian refugee camp in Beirut, Lebanon. First, a needs assessment, including quantitative and qualitative data collection was carried out with children, parents and teachers. The second phase was identification of a priority health issue and analysis of determinants. The final phase in the construction of the logic model involved development of an intervention. The process was iterative and resulted in a more grounded depiction of the pathways of influence informed by evidence. Constructing a logic model with community input ensured that the intervention was more relevant to community needs, feasible for implementation and more likely to be sustainable.

**Keywords** Adolescent, mental health, logic model, refugee, participatory research

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## KEY MESSAGES

- Logic models are useful in planning programmes, monitoring implementation of activities and in evaluation of impact. However, their usefulness is limited if stakeholder input is not included in the process.
- When developed in a participatory manner with communities, the ensuing logic model is more relevant, feasible and likely to be sustainable.
- The interface between academic scientific evidence and community practice evidence maximizes effectiveness and relevance of the process and resultant intervention and evaluation.
- The process of logic model development in partnership with the community can strengthen the relationship with the community and build trust based on a transparent process.

## Introduction

Logic models have been touted as a solution to planning woes. They involve the development of a diagrammatic model that links programme activities to programme objectives based on the assumptions underlying change and with reference to the theory behind the change expected (W.K. Kellogg Foundation 2000; Lando *et al.* 2006). Logic models are also useful in monitoring implementation of programme activities and in management and evaluation (W.K. Kellogg Foundation 2000). The literature on developing logic models highlights the steps involved such as describing a problem, specifying community needs/assets, identifying the desired results and strategies, and stating the underlying assumptions behind the strategies (W.K. Kellogg Foundation 2000).

The conceptual discussions of logic models suggest that involving stakeholders in the development of the model is critical. Stakeholders may include target groups, decision makers, community members and academicians (Ortengren 2004; Lando *et al.* 2006). Through community involvement and participation, more accurate information on specific needs and assets can be generated. This allows for a common vision for change between the researchers and community (Norris and Pittman 2000). This vision can then be translated into a plan of action that guides intervention development, implementation and evaluation. Despite this rhetoric, there is little discussion in the literature of logic model development using a participatory process (Dwyer 2003; Wilfreda *et al.* 2003; Hernandez and Hodges 2006; Kaplan *et al.* 2006).

This article describes a process leading to the development of a logic model for youth mental health promotion using a participatory approach in a Palestinian refugee camp in Beirut, Lebanon.

## Background

The project described in this manuscript was based in Burj El Barajneh Palestinian refugee camp in Beirut, Lebanon. The camp is the sixth largest of the 12 official camps established in Lebanon to house Palestinian refugees after 1948. Burj El Barajneh houses approximately 14 000 to 18 000 residents over an area of 1.6 km<sup>2</sup> (<http://www.un.org/unrwa/refugees/lebanon.html>) (Makhoul 2003). Palestinian refugees in Lebanon live under dire environmental and social conditions. These conditions are commonly perceived to be the worst of Palestinian refugees in the region, due to limited employment opportunities, scarce economic resources, and limited access to basic health and social services—exacerbated as a result of state-imposed restrictions on employment and opportunities to seek education (Jacobsen 2000).

Health and social services are provided by a variety of international as well as governmental and non-governmental organizations. The United Nations Refugee and Works Agency (UNRWA) was set up in 1948 specifically to provide educational and health services to the Palestinian refugees. However, due to the increasing population of refugees, and political factors, schools have become unable to accommodate the number of school children.

The project began as a follow-up to the Urban Health Study (UHS) conducted by the Center for Research on Population and Health (CRPH) at the Faculty of Health Sciences, American

University of Beirut. The study included a survey of health and social circumstances of youth in three underprivileged communities in Beirut with a history of displacement. The Burj El Barajneh camp was one of these communities and this manuscript is focused on that community. The intent of the Urban Health Study from its inception was to develop long-term relationships with the three communities. Therefore, community leaders were engaged early on and community input was solicited during the development of the original survey. Subsequently, a decision was made to follow the principles of Community Based Participatory Research (CBPR) (Israel *et al.* 1998; Minkler and Wallerstein 2003). One of the key principles of CBPR is to engage representatives of communities equitably in all phases and aspects of a public health research project, from defining the research question, to planning and implementation, to evaluation and interpretation of findings (Israel *et al.* 1998; Cargo and Mercer 2008). ‘Participatory research is fundamentally about who has the right to speak, to analyze and to act’ (Minkler and Wallerstein 2003). With this in mind, a community coalition—described in more detail below—was set up in Burj El Barajneh to guide the project phases.

## The process of logic model development

The process of logic model development consisted of three phases (Figure 1). Phase 1 was the exploratory (needs assessment) phase with the objective of assessing youth issues using several data collection methods. Phase 2 was the problem identification phase with a main objective to define a priority health issue and analyse its determinants. The final phase was the intervention development phase with the main objectives of defining specific evidence-informed interventions and activities to target identified determinants. Each phase will be described in more detail below.

### Phase 1: Exploratory phase

The data collection methods used in phase 1 were a combination of quantitative and qualitative techniques and engaged a variety of stakeholders, ensuring that both an emic and an etic perspective were gained; and maximizing the interface between science and practice.

The process of logic model development began with the dissemination of results of a needs assessment survey conducted with never-married youth aged 13–19 years. The survey was conducted in spring 2003 by the CRPH as part of the larger study, and as a follow-up to the UHS household survey. The household sample was chosen using a probability proportional to size sampling design. Data related to adolescents were gathered through face-to-face interviews with never-married adolescents aged between 13 and 19 years identified from the household roster. The data were collected by interviewers recruited from the community and trained intensively by CRPH staff and study investigators. Consent was requested of both parents/guardian as well as the adolescents themselves. Response rate for the adolescent survey was 96.4% in Burj El Barajneh camp. The Urban Health Study and all surveys were approved by the University Research Board.

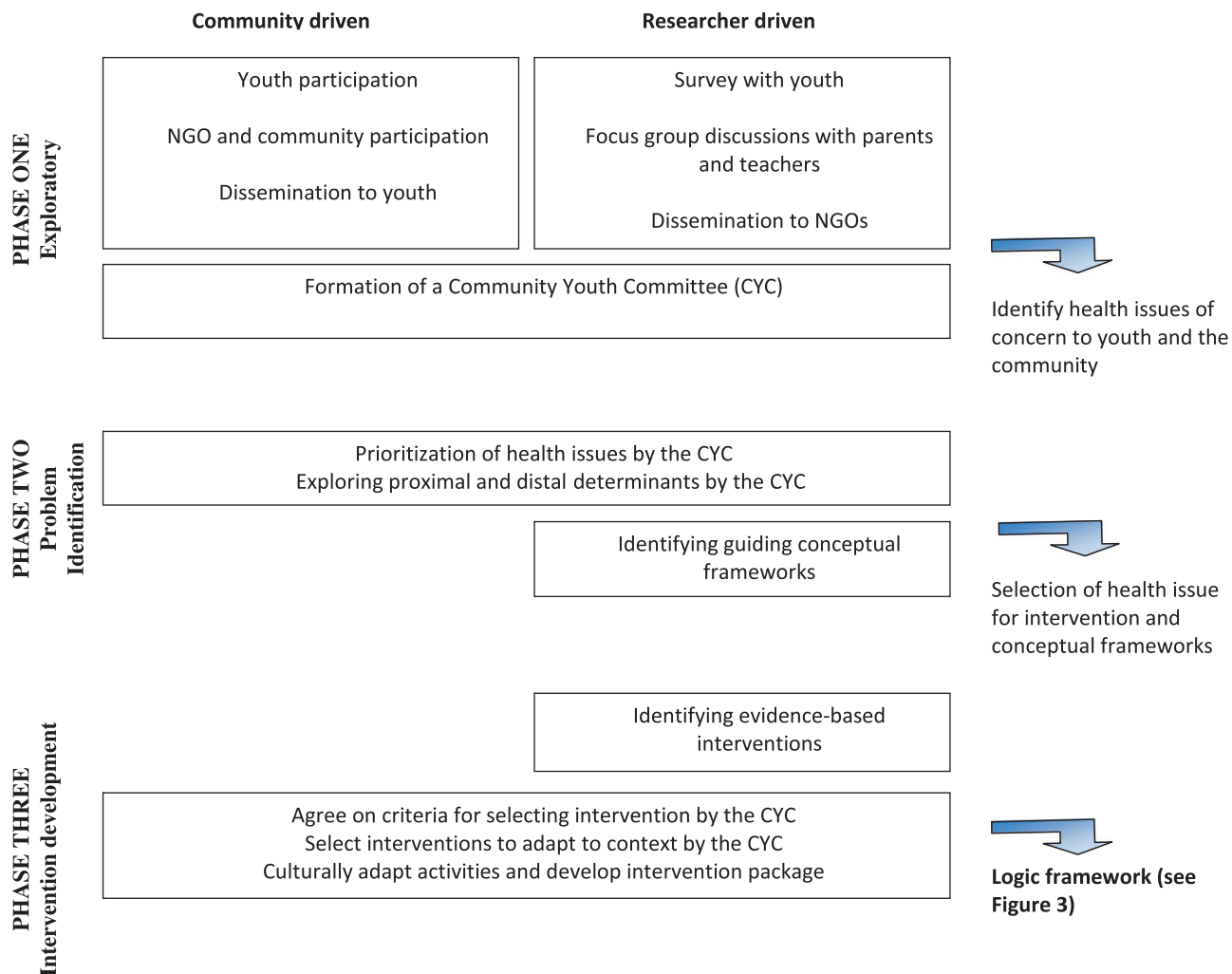


Figure 1 Phases in the development of the logic model

Selected results indicated that youth surveyed were relatively disadvantaged (Table 1). They lived in households of mean annual income of 4854000 Lebanese Liras (approximately US\$3236; Euro 2215). Only 54% of the sample of youth were currently enrolled in school and 27% were working. Many of them were exposed to stressful life events such as having a family member hospitalized (60%) or having parents who needed to repay a loan (48%).

The results were disseminated in June 2005 in a meeting with organizations and individuals that work and live in the camp. NGOs that work with youth in the Burj El Barajneh camp as well as UNRWA and funders of youth projects in the camp were invited to the first dissemination meeting. In addition, several youth activists not affiliated with NGOs were invited. In total, 26 NGOs or activists were invited to that first meeting; and 23 attended. Discussions at this meeting verified the results, indicating that community practitioners' 'felt need' matched scientifically assessed need. The discussions also indicated interest in moving forward to intervene with the camp youth.

At this first planning meeting, a Community Youth Committee (CYC) was formed and all those in attendance were invited to join.

Since its inception, the CYC has been involved in all aspects of the logic model development and intervention planning. The CYC is a grass roots coalition composed of 17 NGOs that work with youth in the Burj Camp, funders of projects in the camp, representatives of UNRWA, community residents, youth, and members of the Urban Health Youth Working Group from the American University of Beirut. Seventeen organizations (including UNRWA) attended at least five times at different stages of the project. About eight NGOs attended almost every meeting. Participation of youth on the CYC was perceived by all members to be a priority. Therefore 18 young men and women aged 17–25 years—identified by the participating NGOs as active in their community—were invited to attend the CYC meetings. Five attended regularly but were not active participants, due to the cultural deference to age. In order to empower the youth, a Palestinian Youth Coalition (PYC) was established in Burj El Barajneh camp. This coalition included all the youth (18) and selected two to represent them at CYC meetings.

The CYC committee established internal rules and regulations regarding membership, attendance, voting and decision making that were thoroughly discussed and agreed upon in June 2006. When needed, subcommittees were established to enhance the

**Table 1** Selected results from the 2003 survey of youth aged 13–19 years living in Burj El Barajneh camp ( $n = 590$ )

Social or health indicator	Percentage or Mean
Mean annual income of households	4 854 000 Lebanese Liras <sup>a</sup>
Mean age	16.72 ± 2.054
Female	48%
Currently enrolled in an educational institution <sup>b</sup>	54%
Currently working	27%
Of these, those who work more than 40 hours/ week	67%
Of these, those who earn <75 000LL per week <sup>a</sup>	90%
Never been to visit a doctor	16%
Hospitalized in last year	16%
Family member or relative hospitalized in last year	60%
Mother or father lost a job in the last year	24%
Parents had to repay a loan in last year	48%
Could ask a family member for help if needed	88%
Know most/many people living in their area	77%
Trust few people or no one living in their area	94%
Feel safe walking alone in area at night	61%
Belong to any kind of group (social, community, sports)	29%

<sup>a</sup>1500 Lebanese Lira = US\$1 = Euro 0.68.

<sup>b</sup>Educational institution = school, university, technical school.

efficiency of work on specific tasks. The agenda for each meeting was developed by the academic team and additions were made by CYC members when needed. Minutes were initially taken by the academic research team and subsequently by a member of the CYC.

The frequency of the meetings of the CYC depended on the stage of planning and implementation of the intervention. During the initial stages of choosing the priority health issue and developing the logic model and intervention, meetings were held weekly or every other week. This eventually changed to once per month during the recruitment phase, and about once every 2 months during the implementation and evaluation phase.

All meetings of the CYC were documented in detailed running notes taken by a research assistant, which described what was said and by whom. These were summarized into minutes distributed to all CYC members. The minutes documented main points and related reflections as well as any decision taken. The running notes, and minutes, provided a rich history of the ideas, debates and decisions at every stage of the planning, implementation and evaluation of the intervention. Issues were discussed thoroughly in the meetings and often spilled over to following meetings. Whenever possible, decisions were arrived at through consensus. When divergent viewpoints were strong,

a vote was taken, where majority rule applied. In the early stages of the coalition, each organization had one vote irrespective of the number of organizational representatives. This meant that the university had one vote only as well. As trust built, the decision was made to allow each individual to have a vote. Generally, consensus was achieved after thorough dialogue on a particular issue.

One of the first decisions taken by the CYC was to explore the survey results in greater depth. For this purpose, focus group discussions were conducted with youth aged 13–19 years of both genders to: (1) get youth feedback on the results; (2) explore with youth issues that were not included in the survey but important in their lives, and (3) begin to prioritize youth issues (Makhoul and Nakkash 2009). After hearing the results and providing their perspective on the data, the youth then prepared and practised skits (short plays) that showcased their prioritized issue, and presented them to an audience of the CYC and other adults from the community. These skits highlighted the importance of parents and teachers in the lives of youth.

The exploratory phase also included conducting focus groups with mothers and teachers of youth aged 13–19 years with the objective of getting their perspective on youth health and social issues. Parents emphasized that youth have no guarantees: they live in difficult socio-economic circumstances, are not well engaged by the school system, and have no work opportunities. Their daily life pressures inside and outside the house affect their mental health. Teachers discussed their difficult situation: they are underpaid, have to work double shifts, and they themselves come from the stressful environment that the children come from. They stated that the relationship between teachers and students is not ideal. Although the teachers are exposed to many training workshops, these are often irrelevant and inapplicable to their context and unique classroom circumstances.

## Phase 2: Problem identification phase

The second phase of logic model development involved prioritization of issues and exploring determinants. The results of the data analysis from phase 1 were categorized into main health/social themes and determinants. Five main health or social issues seemed to pervade the data analysis in phase 1. These were violence, mental health, school drop-out, tobacco use and drug use. With the CYC, each of these issues was ranked according to a set of criteria: size, seriousness, effectiveness of solution, as well as acceptability to the community, feasibility and legality. Each of these criteria was rated from 1–3; each was given equal weight and a total was obtained. The decision on ranking of each criterion for each issue was made by the group keeping in mind evidence as well as community context. When there was disagreement, dialogue ensued leading most often to consensus. When a vote was necessary, the majority rule applied, with the academic team having one vote as all other organizations. The Basic Priority Rating system (Spiegel and Hyman 1978) was used as a guiding framework in the prioritization. School drop-out and mental health received the highest overall ranking and were thus selected as primary outcomes for intervention.

As the academic team began to think about interventions, three frameworks guided our thinking: the Ecological Model of Health Promotion, Positive Youth Development, and Social Cognitive Theory. These were strengthened through discussions with the CYC and the results of the data collection methods. Although frameworks are usually an academic endeavour, the specific choice of frameworks in this case was guided by community and context. The Ecological Model of Health Promotion (McLeroy *et al.* 1988) served as the primary model of reference. This emanated from our training as public health practitioners, as well as from the data. Youth kept emphasizing the importance of engaging parents and teachers with them in common interventions.

With respect specifically to a conceptual framework for youth, we chose to take a Positive Youth Development (or assets) approach (Nansook 2004). The CYC was keen on focusing on positive aspects, especially in an environment so fraught with negative situations and risks. This approach aims to ‘promote development to foster positive youth outcomes’ (Catalano *et al.* 2002). It engages every child, and the whole child, and focuses on interactions between the child and his/her social environment (Catalano *et al.* 2002).

With respect to the outcome of mental health, the choice was made to focus on positive mental health defined as ‘a person’s ability to cope with adversity, and avoid breakdown or diverse health problems when confronted with adverse experiences’ (Korkeila 2000). It is similar to the concept of resilience (Fergus and Zimmerman 2005). Despite the restrictions on their opportunities for education, health care and employment, as well as their marginalization within the Lebanese context, the youth of Burj El Barajneh are clearly resilient; they exhibit constant hope and have access to high levels of community social capital. An emphasis on ‘immunizing’ the youth and preparing them for adversity was chosen. The emphasis on positive mental health rather than mental illness facilitated community endorsement. Despite this, the terminology used created some resistance as the term for mental health in Arabic could be confused with mental illness. A decision was taken to stick to the term as a way to raise awareness within the community. The detailed consent procedures applied for participation in this intervention facilitated community understanding. With respect to theoretical frameworks, Social Cognitive Theory (SCT) was chosen (Baranowski *et al.* 2002). SCT is uniquely fitting to the context as it posits that human behaviour, personal factors and environmental conditions interact in a complex and interrelated manner. As one walks through the camps, and understands the socio-political context of Palestinians in Lebanon, and specifically youth, the reality of the influence of environmental conditions on behaviour and health is hard to escape.

Once the outcomes and conceptual frameworks were selected, determinants of mental health and school drop-out were reviewed in the literature. The research team used a wide search strategy through search engines such as Medline, with the intent of exploring determinants at a variety of levels (McLeroy *et al.* 1988). These were linked to each of the main outcomes on a large cardboard sheet, in concentric circles of ecologic influence from individual, to interpersonal (peers, families), to organization (schools) and to those relevant to the

larger environment (context of Lebanon and the camp). For example, problem solving skills were identified as a determinant of mental health at the individual level, healthy parent–child relations at the interpersonal level, neighbourhood safety at the community level, and access to education at the policy level.

Once these evidence-based factors were linked to the outcome, the research team reviewed all the data that were gathered and added determinants that were evident from the survey, and from the focus groups. For example, mothers mentioned that problems at home (family problems) affect youth mental health. They also mentioned that poverty as a structural determinant affects youth mental health. This map was shared with the CYC in a working meeting. Members then added (on coloured pieces of paper) other determinants which they found relevant from their experience working in the context. For example, CYC members felt that youth in Burj El Barajneh—as a result of the discrimination—sometimes feel that they are inferior to others and that this affects their mental health. At the interpersonal level, they cited regular conflicts within families between siblings and parents, which in their experience influenced youth mental health. And, at the school level, they cited the rigidity and traditional curricula. This mapping process was the result of the interface between evidence (science) and practice (community expertise) (Figure 2).

Once the map was complete, the CYC discussed windows of opportunity. A decision was made to focus only on the proximal determinants (individual, interpersonal and organizational). Despite the recognized importance of distal structural factors in both these outcomes, the CYC acknowledged the impossibility of changing political, sectarian and legal factors linked to being a Palestinian refugee in Lebanon. Within the range of proximal determinants, those perceived by the CYC to be most amenable to intervention were selected as targets of change.

### Phase 3: Intervention development phase—the logic model takes shape

The last phase of logic model development included defining interventions. The emphasis on a scientific process led to a search for evidence-based interventions. Four evidence-based reviews of mental health interventions for youth were examined (Durlak and Wells 1997; Greenberg *et al.* 2000; Greenberg *et al.* 2001; Browne *et al.* 2003). Within these reviews, specific interventions were selected by the CYC based on the following criteria:

- (1) The outcome measure was related to mental health or positive youth development;
- (2) The target age group was appropriate. With respect to age group, mental health issues become especially relevant in this context at age 14 years when huge numbers of Palestinian refugee children drop out of school as revealed in phase 1. The CYC had emphasized the importance of a preventive intervention. Therefore, the age group of 10–14 years was selected as ideal for the intervention;
- (3) The intervention was intended for a universal (rather than targeted) audience;
- (4) The length of the programme;
- (5) The programme involved parents and/or teachers;



Figure 2 Map of determinants of youth mental health from scientific and practical perspectives

- (6) The setting of the programme was in school or the community (rather than in a clinical setting);
- (7) The main activities of the programme fit the identified determinants; and
- (8) The programme was perceived to be adaptable to the context of the camp.

The interventions included in the reviews were summarized based on the above criteria, and then shared with the CYC in a day-long meeting. Extensive discussions ensued. This interface of evidence with lived experience resulted in the selection of three evidence-based interventions as most appropriate to the context: Stress Inoculation Training, Improving Social Awareness and Social Problem Solving, and Positive Youth Development Programme (Maag and Kotlash 1994; Bruene-Butler *et al.* 1997; Kegler *et al.* 2005). The manuals of these interventions were requested and received from the organizations. As these interventions collectively included activities addressing the identified determinants, the sessions in each were added to estimate the scope of our intervention. Context specific sessions were also added. In keeping with the ecological model, activities with parents and teachers were included.

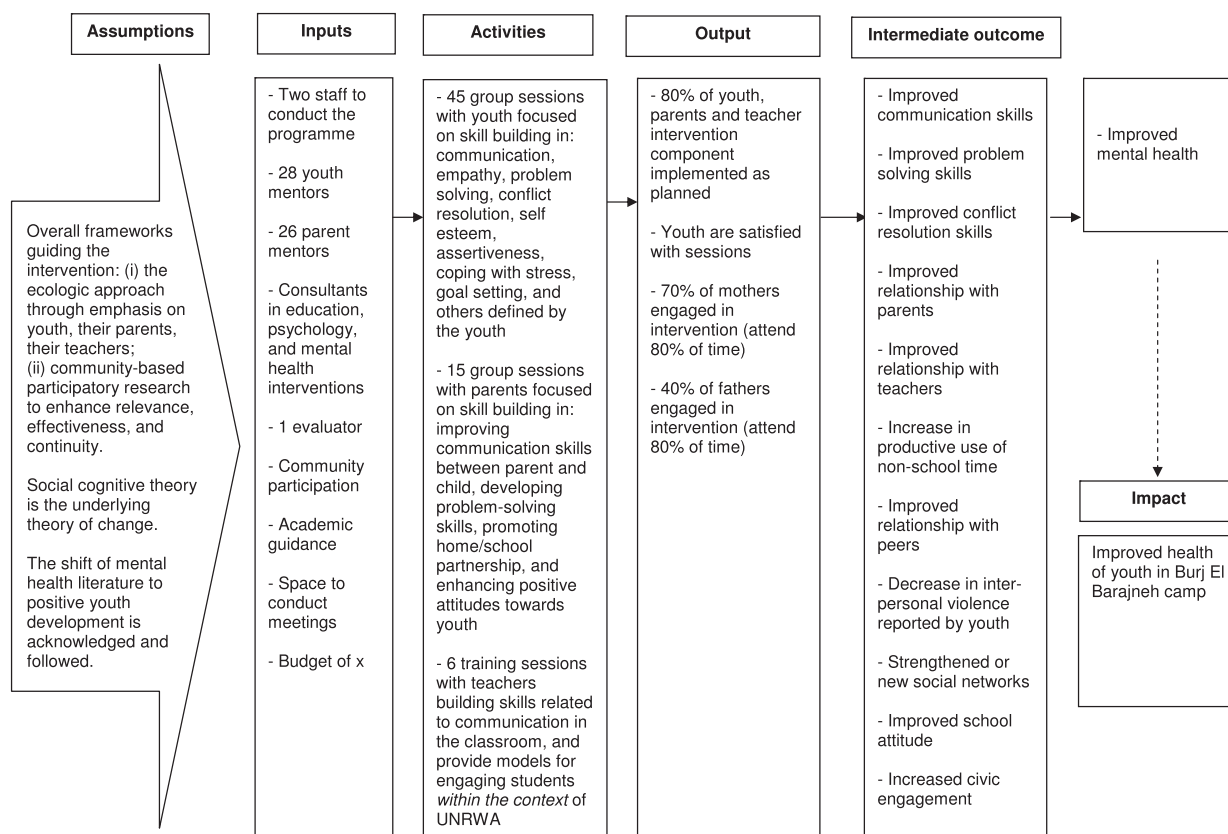
However, the setting of the intervention was considered to be important to change. Although the vast majority of mental health promotion programmes take place in the school system within the curriculum, we are unable to work within the school curriculum of the Palestinian refugees due to the increasing population within the refugee camps with no increase in school

buildings. As such, each school building houses two different schools, with double shifts. There is no room in the curriculum for change. Given this barrier, the intervention implementation was shifted to extra-curricular activities.

### Outcome

The outcome of the participatory process described above is a logic model that described an evidence-informed, community-based relevant intervention (Figure 3). Based on the intermediate outcomes and with community input this intervention was named Qaderoon. The logic model is framed by the conceptual frameworks described above. They pervade the choice of activities, the involvement of youth, parents and teachers, and the impact on outcomes. The intermediate outcomes are the identified determinants, such as improved communication skills, improved problem solving skills, improved relationship with peers, parents and teachers, improved self esteem, increased attachment to school, and others. The main outcome is to improve mental wellbeing of youth aged 10–14 years.

Based on the logic model and relying on the manuals of the selected evidence-based interventions, the Qaderoon intervention sessions for youth were developed. We found that each manual covered some of the desired objectives so that we needed to use activities from all the manuals to achieve all the intermediate outcomes. Although the manuals were focused on young people, none dealt with issues specific to Arab youth or to refugee youth. Therefore, cultural adaptation was needed.



**Figure 3** The logic model for our youth mental health promotion intervention

The process of cultural adaptation was carried out by a graduate student in psychology, a member of the CYC with experience in education in the camp with youth, and a young person from the camp with a master's degree in social work and a bachelor's degree in sociology. The process was guided by the research team and included several steps:

- (1) Review of articles focused on differences between youth of different cultures or on adapting interventions to different populations, with a special focus on comparing how the Palestinian youth react to intervention programmes that promote social and life skills versus other young peoples' reactions to the same intervention programmes (Miller and Billings 1994; Frydenberg *et al.* 2003; Rousseau *et al.* 2003; Dwairy 2004; Eisenbruch *et al.* 2004; Dwairy 2005; Srour and Srour 2006).
- (2) Based on the review, several key principles were set for the adaptation of the activities in the manual: focus on terms and expressions used by youth in our context; focus on interactive activities rather than lectures; decrease the need for writing because writing skills are not very developed; focus less on introspection as this is not common in the culture and more on collective activities focused on social and cognitive skills; consider gender issues as the community is conservative and girls and boys are segregated in school; consider the use of art and other forms of expression; extend the timing of activities to allow for enough exposure to concepts that are not as common in our context.

- (3) Sessions from each of the evidence-based interventions were reviewed (by theme: communication, conflict resolution, etc), and activities were adapted with the principles in mind. Each session began by identifying the session objective, followed by a detailed description of activities to meet the objectives and time allocated to each.
- (4) A process evaluation sheet was developed for each adapted session.
- (5) Two sessions were pretested with youth in the camp and adjustments made as a result.
- (6) The completed manual was shared with the CYC for feedback.
- (7) Ten sessions were pilot tested with youth of the same age group recruited from schools in another camp and changes made accordingly.

The final youth intervention included 45 sessions with young persons. Fifteen parent sessions and six workshops with teachers were also developed in partnership with the CYC and with the main objective of mirroring the youth activities.

## Discussion

This paper has described the involvement of the community in developing a logic model for a community-based intervention. As is maintained in the literature on community health promotion programmes, logic models are useful in guiding planning, monitoring implementation of activities and in

evaluation of impact. However, as discussed above, the practical utility of logic models is limited if stakeholder input is not part of the development process.

Despite the intent to engage as wide a range of NGOs and community members and youth as possible, barriers to participation emerged. Underserved communities are often the object of academic research, usually with little return and benefit. This results in research fatigue and a sense of mistrust between communities and universities. Even when clearly stating the intent to be fully participatory, doubt remains. Time and transparency eases this doubt. In addition, a sincere willingness to listen to community input and make decisions based on it facilitates trust building. Tension between NGOs that compete for funds, as well as between NGOs and UNRWA based on historic differences of opinions on community needs, resulted in stressful early coalition meetings. The presence of the academic team as a neutral party and the continuous efforts to be (and be perceived as) non-biased facilitated the smoothing of relations.

In communities that are patriarchal, cultural norms may prevent youth from speaking vocally in front of adults, especially when they disagree. This is especially true in close-knit small communities where everyone knows everyone else. In this case, the textbook rules of engagement of youth and adults around the same dialogue table may not be feasible, and alternatives must be found. In our case, the youth created their own committee where they felt free to talk and empowered two representatives to attend the CYC meetings. Patriarchal communities also impose specific roles for males and females. In our context, males are the bread winners; and in this disadvantaged community, that often meant working more than one job. Engaging them thus becomes difficult, as they have very little time off, and justifiably would rather spend it with families. The CYC helped in identifying possible ways to get input from fathers, including having fathers that were members of the CYC engage them as peers. As is evidenced above, community engagement requires flexibility to achieve the ends of participation.

Although NGOs in communities implement a variety of interventions, these are most often driven by funding priorities and rarely, if ever, developed based on a thorough planning model. Although the NGOs were willing and ready to be engaged in the process, they found various aspects of it difficult, which resulted in each stage taking more time than originally planned. For example, we had planned for one meeting to finalize prioritization. However, the CYC had a very difficult time prioritizing as in essence they were choosing one problem over others, when all are important in the context. We discussed this for a long time, indicating that the prioritization only meant that we would begin working on a specific problem, not that others were not important, and that the process of planning and implementation could later be applied to other issues. We had also initially thought to use a numerical system for prioritizing, but the CYC members felt more comfortable with a star system (one star, not very high priority, three stars high) as it was more visual.

Cultural barriers were overcome through the familiarity of the research team with the community context, supported with further logistic assistance from the local committee members

when needed. For example, the issue of mixed gender groups was discussed at length with the CYC. All felt that despite the conservative nature of the community, mixed gender groups were acceptable when the intent was educational and to serve the community.

From the perspective of academics, perhaps one of the most difficult aspects of engaging communities in planning is the time commitment required to do so. Participatory research requires trust building first, and capacity building of both academics and community members, which entails more time than having an 'expert' develop and implement a research project alone. This could be viewed as a limitation of the method; however, the product is much more relevant, more sustainable and more likely to meet needs and solve community health issues. This time commitment includes many hours spent in the field, which is not acknowledged in traditional academic methods of assessment, and therefore dialogue and buy-in from deans and chairpersons is necessary.

It is hard to quantify the relative weight given to evidence-based versus community-informed decision making. This is a limitation of the method. We have outlined in Figure 1 the various components which were driven more by researchers or by community. Both played a part in guiding the planning and implementation process. We feel this is appropriate given that most of the evidence is from the North, and in contexts vastly different from the conditions facing youth in the refugee camp. The current project adds to the international evidence base. In settings of such disadvantage, research-based priorities and community-based priorities are often not different. Also, in choosing to apply CBPR as a method, the researchers acknowledge the importance and relevance of community-based priorities in guiding research. This methodology requires a specific attitude: a passion and a willingness to be patient and spend much time on the process or community building; a willingness to be an activist rather than a pragmatist (Morgan 2001); a willingness to be a facilitator of a process, rather than an expert; as such a willingness to engage in a process of co-learning where all stakeholders, including practising professionals and researchers, learn.

A variety of research implications result from this participatory logic model development process. A qualitative inquiry into the CYC's perspective on participation would help to clarify the benefits and challenges. Interviews were conducted with members of the CYC and indicated high commitment and increasing trust with time (Abdulrahim *et al.* 2010). Once data are collected at pretest, the validity of the logic model in this context can also be analysed. This analysis has recently begun. Finally, the challenges and facilitators of sustainability of community participation in disadvantaged contexts and in communities where participation in any aspect of public life is limited are important questions for research.

## Conclusion

The logic model for this intervention was an outcome of an iterative process involving community members and academics. The researchers believe that this process of joining science with practice in the development of the logic model through partnership with community resulted in a relevant and



grounded picture of the pathways of influence. The process of logic model development also strengthened our relationship with the community and built trust based on a transparent process.

The logic model was developed prior to obtaining funds for intervention. The CYC was committed to the planning process and was willing to wait for the funding, rather than be driven by donor agendas. The thorough planning process did result in a successful grant proposal, and the intervention was implemented during August 2008–May 2009.

The logic frame was critical in all phases of planning, implementation and evaluation. With regard to monitoring and evaluation, the logic model was a guiding beacon. We chose and/or developed measurement instruments that fit the ultimate and intermediate outcomes listed in the logic model. In addition, we developed our process evaluation plan and outcome evaluation plan with reference to the logic model.

We recommend the development of a logic frame to guide intervention planning, implementation and evaluation. We also recommend the use of a participatory approach to improve the chances of a more relevant, feasible and likely sustainable intervention. We would also like to caution about the possibility of challenges that researchers may face, such as the drive of funding agencies to scientific rigour at the expense of true community participation. Researchers may consider planning for possible obstacles and challenges in the initial plan and budget to avoid the temptation to cut corners with participation. This way, the relevance and sustainability of outcomes are not compromised.

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## Ethical Approval

The Urban Health Study and all surveys were approved by the American University of Beirut Institutional Review Board.

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