

Introduction

Diabetes is the third leading cause of mortality worldwide [42]. An estimated 96 million people have diabetes in the

project. Facilitators were selected based on experience, communications skills, demonstrated motivation and familiarity with the area. None of the facilitators had previous group facilitation experience, but 14/16 had worked in communities for non-governmental organisations (NGOs) and 12 had worked as data collectors in our baseline survey [15]. Facilitators were paid 8000 BDT per month (around US\$95).

Facilitators were line-managed by two coordinators. Coordinators had previously supervised PLA interventions on maternal, newborn and child health. They were both married women, with a Master's level of education, living in Faridpur. Coordinators were line-managed by a District Coordinator (DM), who reported to a Senior Group Intervention Manager (SGIM). Both the DM and the SGIM had managed previous PLA interventions.

Facilitators used a manual to guide discussions (Table 1). The intervention had four phases: problem identification, planning together, implementation and evaluation (Figs. 1 and 2). We used Diabetic Association of Bangladesh materials, and sought input on the manual design from an endocrinologist & diabetologist, a health education specialist and a nutritionist working in BIRDEM (Bangladesh Institute of Research and Rehabilitation in Diabetes Endocrine and Metabolic disorders) hospital in Dhaka. The manual was also informed by formative research [26]. For each meeting, the manual contained open questions to initiate discussions, and 'message boxes' of important points. Meetings had facilitation tools, such as storytelling, games or body mapping to engage participants [8] and facilitators used picture cards and a pictorial chart to explain diabetes, its causes and symptoms, and ways to prevent and control it.

The SGIM trained the DM and coordinators on the manual content and meeting process, and they piloted meetings one to eight with four men's groups, and four women's groups in one non-study cluster. Piloting informed meeting length, topic sequencing and comprehension. On finalisation, facilitators were recruited and trained in phases. They received 4 days training from a diabetologist, and a nutritionist about diabetes prevention and control. The SGIM trained facilitators on PLA, community entry, and meetings one to eight (phase 1 problem identification) over 4 days. They subsequently received 4 days training for phase two (planning together) and three (implementation), and 2 days training for phase four (evaluation). Coordinators each supervised eight facilitators through monthly meetings in Faridpur, and community observation. Facilitators also used their own tools and methods and shared ideas in monthly meetings.

We planned a minimum coverage of one group per 200 population aged ≥ 30 years with at least one men's and one women's group in each intervention village. The

requirement to have separate men's and women's groups resulted in a higher population coverage than planned, with 1 group per 145 population aged ≥ 30 years (range: 101–199). We engaged with village leaders and community members in each village to make social maps of household clusters, mosques and market areas to identify the most appropriate venues for group meetings. Coordinators and facilitators visited households to spread information about the groups and organized meetings in venues and at times convenient to participants. There were 122 groups facilitated by 16 facilitators, and each facilitator was responsible for 6 to 9 groups each month. Group attenders were not given any incentives.

Methods

Setting

Faridpur is around 2000 km² with a population of over 1.7 million, and a mainly agricultural economy of jute and rice farming. Primary healthcare is provided at the village level through Community Clinics (CC) and Family Welfare Centres (FWCs) [29] who have received diabetes screening and referral training. Glucometers and blood glucose testing strips should be available at CCs and FWCs but re-supply is irregular, and blood glucose testing was not routinely available. Village level private health care is available through informal health workers and drug vendors who provide blood glucose tests. Services for diabetics are provided in upazilla health complexes, and in Faridpur headquarters at the Diabetic Association of Bangladesh hospital, but these are too far away for many diabetics. There were 14 CCs, 22 FWCs, and three upazilla health complexes in PLA intervention areas. The population in Faridpur is mainly Bengali and 90% are Muslim [3]. 8.9% of men and 11.4% of women aged ≥ 30 years have diabetes with only 24.6% being aware of their status, and 75% of known diabetics had sub-optimal control [16].

Data collection

The intervention was participatory and complex and therefore we used the Medical Research Council framework [21] for process evaluation research to 1) evaluate the fidelity of the intervention to the participatory theory and method 2) describe the implementation of the intervention, and 3) explore how the implementation of the intervention affected its effectiveness. We used structured observation, narrative observation, and focus group discussions to collect data using a concurrent nested mixed-methods research design [11]. We collected qualitative and quantitative data at the same time and used qualitative data to validate and explore quantitative results every 4 months. Facilitators recorded attendance on paper forms and presented reports to coordinators. Coordinators supported facilitators, and

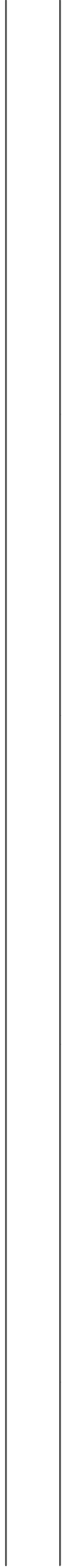


Table 1 (Continued)

Study	Study design	Study location	Study period	Study population	Study size (n)	Study results (prevalence & risk ratio)
Study 1*	Case-control	USA	1998-2000	122 cases, 122 controls	122	122 cases, 122 controls
Study 1	Case-control	USA	1998-2000	122 cases, 122 controls	0	122 cases, 122 controls

planned to observe and collect data at a minimum of 30 meetings per month. Coordinators conducted narrative

Data management and analysis

community and policy efforts to act in synergy [40]; and specific capacity building to enable coordinators and SGIM to support group engagement with policy makers and health workers.

External validation of the PLA approach

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Consent for publication

All authors consented to the publication of this article.

Competing interests

The authors declare that they have no competing interests.

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