Title:

A qualitative assessment of the effectiveness of a group diabetic education programme using motivational interviewing in underserved communities in South Africa.

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For M Med Family Medicine research assignment

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"**Declaration**

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university for a degree.

Signature: ..... **Date:** 27/10/2011 ....."

Abstract

Background

This study is a qualitative assessment of a group diabetic education programme using motivational interviewing (MI) in underserved communities in South Africa. The programme was delivered by health promotion officers (HPOs) who are mid-level workers trained to deliver health education messages. The aim of the study was to explore the experience of the HPOs in the training course and in facilitating the group education sessions, and from an understanding of their perspective to contribute towards an in-depth evaluation of the educational programme.

Methods

The study made use of three focus group interviews with 14 health promoters who delivered the educational programme in 17 health centres in the Cape Town area. Interviews were recorded and transcribed verbatim. The data was analysed using the Framework method.

Results

Training was perceived as successful and the use of small group education as the main teaching method mirrored the challenges involved in group diabetes education. HPOs felt confident in their ability to deliver the group education after training. HPOs reported a significant shift in communication style and skills, but felt the new approach was feasible and better than usual. Resource materials were found to be relevant, understandable and useful. HPOs felt that the number of sessions and topics should be increased and that family members should also attend. HPOs struggled with poor patient attendance and a lack of suitable space at the facilities. HPOs reported that patients who attended demonstrated improved self-efficacy and self-care.

Conclusion

This qualitative assessment of HPOs perspective on a group diabetes education programme using MI showed that HPOs can deliver such a programme with the necessary confidence after adequate training. The HPO's perspective needs to be triangulated with other research projects focused on the patient outcomes and perspectives and evaluation of the HPO's fidelity and competency. This study however supports wider implementation of the educational programme.

Introduction

In 2010 the International Diabetes Federation reported a prevalence of 4.5% for diabetes among South Africans between the ages of 20 and 79 years, with an expected increase to 5.6% by 2030.[1] In South Africa the greatest prevalence of diabetes is found in the Indian community of Durban (13%) [2] and the elderly Coloured community of Cape Town (28.7%).[3]

Diabetes makes a significant contribution to the burden of disease [4] and is amongst the commonest diagnostic categories in ambulatory primary care.[5] The complications of diabetes, such as blindness, amputation, cardiovascular and kidney disease, lead to significant morbidity and mortality.[1,6] It is estimated that in the age group 20 to 79 years of age, 6% of deaths in Africa were attributable to diabetes in 2010.[1]

The Western Cape is still struggling to improve the quality of care for diabetes. Despite improvements over the last 3 years, the most recent audit done in the Western Cape showed that only 48% of diabetics had an HbA1c test in the last year and only 35% were controlled (HbA1C <7%).[7] Another concerning factor in the audit was that group education in the participating health facilities decreased from 90% to 78%.[7] Health centres that gave didactic talks to groups of patients in the waiting room are likely to have recorded this as group education and so the effectiveness of this education is probably low. Recently it was found that when primary care providers promote lifestyle modification, they often do not have sufficient knowledge to provide practical advice to patients.[8]

Over the last few years several interventions on different aspects of diabetic care have been implemented in the Metro District Health Services to try and improve the quality of care. An integrated chronic disease audit and quality improvement cycle [7] was implemented. The use of a fundal camera for retinal screening in primary care was started at some primary care facilities. [9] An appreciative inquiry process between health workers responsible for diabetic care, to improve the annual review of the diabetic patient, was also started.[10]

However, these initiatives did not focus on preventative measures like patient education or the empowerment of patients to look after their own diabetes. In a paper published by the World Health Organization in 2002 about innovative care in chronic conditions the following statement was made: "*Patients and their families are the most undervalued assets in the health care system. Their potential to affect outcomes is undeniable and their capabilities should be leveraged fully in any model designed to improve care for chronic conditions. They need motivation to change and maintain daily health behaviours, adhere to long-term therapies, and self-manage their conditions.".*[11]

Delivering education to patients has been implemented via different strategies. One such strategy, recommended in the new Western Cape Chronic Disease Policy[18], is to set up community based support groups via local non-government organisations, with input from the Community Health Centres. Implementing support groups was seen as a way to improve adherence and to increase self-management among patients.

Another strategy was suggested by the appreciative inquiry process, which recommended a facility based diabetic group education programme delivered by health promotion officers (HPOs). The type of information needed and the way in which it should be structured was also discussed during the inquiry process. [10] The suggestions from the inquiry formed the foundation on which the researchers developed a new educational programme.

Group diabetes education has been proven to be effective in improving diabetes knowledge reducing the need for diabetes medication, improving HbA1c, increasing weight loss and lowering blood pressure.[12] However, the literature on training mid-level workers in group motivational interviewing (MI) is very limited. [18] Though individual MI counselling has been researched more extensively, particularly in high-income countries, the use of MI in groups is not well documented.[13] Only one study was found from Africa, which was conducted in Zambia and used MI to educate the population about safe drinking water practices. After the intervention they reported an increase of chlorine sales (used to purify the water) of two to four times higher in the community visited by MI-trained volunteers than in the community where only the usual educational materials were used.[14] A guide on training counsellors for MI in groups was developed in America by Wagner and Ingersoll to help with alcohol abuse. This was non-educational though, in the sense that there was not much informational content, and it focused on changing patient's alcohol abuse patterns.[13]

In the Cochrane review on group diabetes education, the 12 studies included in the review made use of doctors, nurses or dieticians to conduct the group educational session. [12] No studies that made use of mid-level workers to deliver the group sessions were found. Groups may not be as effective as individual sessions but according to Wagner and Ingersoll groups do have the following advantages: [13]

- They create a support system for patients
- They reinforce the notion that the patient is not alone in their experience
- They may be cost effective, in that fewer counsellors are needed and more patients can be counselled in the time available.

This study focused on the training of health promoters in group MI and their subsequent experience of implementing the educational programme, which is described in more detail below. The results will add to the literature on how to train mid-level health workers from low and middle income countries in diabetic education and specifically group MI. The results can also be triangulated with the results of a larger randomized controlled trial on the effectiveness of the education (results not yet available) and will help to interpret them. Feedback from the health promoters will be useful in terms of modifying future training and revising the educational programme

The aim of the study was to explore the experience of the HPOs in the training course and in facilitating the group education sessions, and from an understanding of their perspective to contribute towards an in-depth evaluation of the educational programme. Specific objectives were to:

- Obtain feedback on the 4-day initial training programme provided to the HPOs
- Identify from the HPO's perspective the most useful and effective components of the programme (including the design of the sessions, the resource materials provided, the diabetic content and the communication/facilitation skills and style)
- Identify from the HPO's perspective the least useful and effective components of the programme (including the design of the sessions, the resource materials provided, the diabetic content and the communication/facilitation skills and style)
- Make recommendations for future training and revision of the education programme

Methods

Study design

Before describing the study design for the work presented in this research assignment an outline of the larger trial, to which this study contributes, is given.

Pragmatic cluster randomized controlled trial

As mentioned above this study was part of a larger pragmatic cluster randomized controlled trial, which is evaluating the effectiveness of the group diabetic education programme delivered by HPO's, using a guiding (motivational interviewing) style, in community health centres in Cape Town, South Africa. In the larger study 34 health centres were randomly assigned to either control or intervention groups. In the intervention group (17 health centres) the patients received a structured education programme of four sessions over a period of one year. These were conducted by HPOs with groups of 10-15 diabetic patients at a time. The four sessions consisted of the following:

- Session 1 understanding diabetes;
- Session 2 understanding the medication;
- Session 3 living a healthy lifestyle;
- Session 4 preventing complications.

Group educational materials were developed and provided to assist with discussions and exercises. For example a flipchart, food cards, and true/false question cards. The health promoters were further trained in their knowledge of diabetes and in a guiding (motivational interviewing) style of communication as well as group facilitation during two workshops. The first 4-day workshop was held immediately before they started the educational programme and the follow up 2-day workshop half way through the intervention.

Learning the MI style involved a way of being with patients that elicited talk about changing behaviour, encouraged collaboration, respected patient's choice and control, kept the conversation on topic and demonstrated empathic understanding of the patient's viewpoints.[19] Specific skills that were taught included open ended questions, using the elicit-provide-elicit strategy to exchange information and how to summarize what was heard. The control group of patients received usual care at their health centres. The researcher was not involved in conducting the trial or training the HPOs.

Evaluation of the HPOs

My study, presented in this research assignment, was a qualitative exploration of the HPO's perspectives on their training and implementation of the group education, by means of focus group interviews (FGI).

Setting and identity of the researcher

The HPOs are mid-level workers who have been trained and employed in community health centres in South Africa. HPOs have a secondary school education up to at least Standard 8 and once employed have additional training in the knowledge and skills required to deliver health education messages and promote health. There are currently 120 health promoters in the Province and the policy of the Department of Health is to have a HPO at every community health centre.

Although HPOs have experience in health education, they are used to delivering their message in front of the patients, while they sit in the waiting area of the facility. They do not usually engage in counselling with specific patients or groups. Their communication style has been one of lecturing, telling, advising or directing patients in what they should do.

Patients with diabetes are meant to have an annual Body Mass Index calculated, urinalysis performed, as well as blood tests for HbA1C, cholesterol and creatinine. An annual foot examination, visual acuity check, and retinal assessment is also expected. No formal health education programmes exists. Most CHCs see patients on a particular day of the week in a "club" whereby a nurse practitioner can quickly review the patient and identify those that need to see a doctor.

I am a MMed student who is specializing in family medicine at Helderberg District Hospital. I am employed as a clinical manager in adult medicine, and HIV/TB services. I have a special interest in managing chronic diseases like diabetes, TB and HIV. Although I recognise the value of having HPOs to help with behaviour modification and education of patients with chronic diseases, I have no personal experience of working with HPOs in my hospital. I therefore have no preconceived ideas of the competency of HPOs or how they might perform in such an educational programme. Although the majority of the HPOs are from different racial and socio-economic groups I do not think that this had a major influence on the interview or analysis process.

Selection of participants

All 14 HPOs that delivered the group education programme were invited to participate in the FGIs. Note that some HPOs delivered the education programme in more than one health centre.

Data collection:

I conducted three FGIs in English.

The first FGI took place at the end of the four day training programme to receive feedback on the training itself and the initial reactions of the HPOs to the programme. The second FGI took place after the first 2 sessions (understanding diabetes and understanding the medication) had been implemented and focused mainly on the initial experience of the HPOs with the education programme. The third FGI took place after the education programme was completed and again focused on the experience of the HPO's in delivering the education.

The FGIs took place at Tygerberg Campus in the Division of Family Medicine and Primary Care. All the HPOs were able to communicate easily in English. The interviews were conducted in an open, non-judgmental, and respectful manner. The researcher acted as an independent person in this interviewing process and had no influence on the training process or the diabetic sessions, therefore the HPOs had no contact with the researcher other than the interviewing process. This helped the HPOs to be honest without influence from the other researchers or trainers.

An interview guide was developed before each interview with the help of Professor Mash, the supervisor to make sure all the topics were covered. The first FGI focused on feedback from the initial 4-day training workshop and explored the HPOs perspective on the proposed diabetes programme, the structure of the training workshop, the facilitation and training style of the tutors, any changes made by the HPO's as a result of the training, and logistical or organizational issues around the training.

The second and third interview focused on the design of the educational sessions, the resource materials provided, the diabetic content, the communication/facilitation skills, organisational issues and effect of the education on patients.

Data analysis

All the sessions were audio-taped and transcribed by a professional typing and transcription company. Data analysis was performed by using the Framework method. [15] This included the following 5 steps: (1) Familiarization of the interviewer with the data obtained, (2) Creating a thematic index, (3) Coding the data according to the index, (4) Charting the coded data and (5) Interpretation of the results.

The analysis was performed primarily by the principal researcher with help from the supervisor, especially in the creation of the thematic index and the process of charting and interpretation. Excel was used to help with organisation, coding and charting of the data. A summary of the first two interviews was presented to the HPO's at the last interview to validate if the researcher had captured and interpreted their interviews correctly.

Ethical considerations:

Ethical approval for the main study had already been granted by the Health Research Ethics Committee of Stellenbosch University (N09/10/260) and this study was approved as an addendum. A written consent form was signed by the HPOs. Information obtained from the HPOs was stored, analysed and reported on in a confidential manner and without disclosing specific identities.

Results

A summary of the HPOs demographics are given in Table 1. The majority of HPOs were therefore middle-aged coloured or black women, speaking Afrikaans or Xhosa, with no higher education and an average of 16 years of experience as a HPO. All 14 HPOs attended the first interview, 10 the second and 8 the final interview. The decreasing number of HPOs interviewed did still represent all the different racial groups and ages and did not influence the quality of the interviews.

Table 1: Profile of the study participants

No.	Age (yrs)	Race	Sex	Educational level	Years of service	Home language
1	49	Coloured	Female	Matric	7	Afrikaans
2	35	African	Female	Matric	4	Xhosa
3	50	Coloured	Female	Degree	23	English

4	58	Coloured	Female	Matric	30	Afrikaans
5	38	African	Male	Matric	4	Xhosa
6	61	Coloured	Female	Matric	20	Afrikaans
7	59	African	Female	Matric	17	Xhosa
8	59	African	Female	Matric	24	Xhosa
9	30	African	Female	Matric	1	Xhosa
10	34	Coloured	Male	Matric	14	Afrikaans
11	49	Coloured	Female	Matric	24	English
12	51	African	Female	Higher Diploma	24	Xhosa
13	50	African	Female	Matric	17	Xhosa
14	48	Coloured	Female	Matric	15	Afrikaans

The following themes were derived from the FGIs.

Feedback on the training

The HPOs noted that the training process mirrored the desired educational process in the sense that it involved the HPOs in a group process of learning and behavioural change and utilised the same communication skills and strategies. In many cases HPOs took the role of the patients in simulating group sessions or had to role play facilitation of the group. The training allowed HPOs to immerse themselves in the learning of the new materials and communication style and to simultaneously stand back and reflect on how they were learning. This way of training built their confidence and simulated the situations they would have to face when delivering the sessions themselves in the CHCs. They felt that the training improved on the skills they had before:

> *"For me also the group participation sort of created the reality of what we are going to be met with when we get there. So it really puts you in that position of preparedness, to be aware of what you are going to go through."* (FGI 1)

> *"…Because it (group discussion) makes everyone to put something on the table, to share ideas, to participate, to build our confidence so that when we get back to the community we cannot be stuck anymore."* (FGI 1)

" We brought the skills that we had, but what happened here is it added more and far much higher value and 'polished' the actual work that we do." (FGI 1)

At the end of their training the HPOs felt confident that they would be able to deliver the four sessions in the CHCs and that their clients would benefit from the proposed diabetes programme. They were excited about the future of their groups and showed a high level of commitment to the programme.

"Nothing will prevent me to do this." (FGI 1)

The HPOs felt that their knowledge of diabetes improved. This also built their confidence and helped them to educate their patients about the disease, its complications and appropriate self-care:

"I think I have learnt more about diabetics, especially the flip chart because it shows us how diabetes works in your body. At least I have something now that can build my confidence more and more." (FGI 1)

"I actually feel more confident in the sense that I can now make the links between the complications from diabetes with smoking and from amputations and what alcohol does and how it affects." (FGI 1)

The HPOs had no negative comments regarding the logistical and organizational aspects of the training.

They felt that the trainers were helping them to understand and comprehend the MI process:

"Everything they (the trainers) were doing they were relating to the material so it was so good. They (the trainers) also managed to make us participate in the group session". (FGI1)

The HPOs were excited about the resource materials provided and felt that they would improve the patients' quality of life in future.

"... because now I can go back to the community and explain to the people and they can look at the pictures and maybe it is going to make more sense to them to understand diabetes, especially when you come to elicit and provide an elicit for them to make a change in their own life for their own benefit to have a more quality life in the future." (FGI 1)

Changes in communication style and skills

It was evident after the training that most HPOs understood the MI-style of interviewing in groups. They felt that there was a shift away from closed-ended questions towards open-ended questions that would encourage elaboration and participation:

> *"....Making use of more open ended questions to get more feedback from the clients and interaction from them."* (FGI 1)

The HPOs understood the concept of exchanging rather than transferring information using the strategy of elicit-provide-elicit. They learned how to elicit what was already known or what information was wanted from the patients, provide them with relevant information and elicit a reaction to this information:

> *"...Be able to elicit a lot of information from patients and then also be able to correct or provide or even affirm the information that was shared."* (FGI 1)

The HPOs understood that listening was an important communication skill within MI:

> *"I can provide information and then listen some more and then do a summary."* (FGI 1)

> *"I now know how to listen"* (FGI 1)

The HPOs conceptualised that they should move away from educating the patients in a teaching or didactic fashion and move towards a style that was more collaborative, facilitatory or guiding:

> *:..To engage in discussions with patients where patients feel that we are not teaching, but we are exchanging information."* (FGI 1)

> *"Yes, I am going to change! I am going to be a facilitator now. I am going to ask the clients what do they think about the topic that I am going to talk about and when they give me information I will just add more and ask them how are they going to change or how are they going to implement that into their lifestyles."* (FGI 1)

The HPOs felt that the new style improved the way information was communicated with patients:

> *"It could be a good programme because the approach that we use is much different and the people understand it much better and we get a lot of input from them. Much more than we used to get, when we used the old way of conveying our messages to the people."* (FGI 3)

However, one HPO felt that the new style of communicating can be time consuming because some patients want to tell their whole history to the group. Other HPOs felt that it is sometimes difficult to control the talkative patients among the less talkative ones.

> *"The new style with letting them (the patients) talk can be very long sometimes because they want to go back ten years and then come to the present."* (FGI 2)

> *"Especially if it is the first person doing the talking he doesn't want to come across like being rude or what so you have to sort of let them talk."(FGI 2)*

From the HPOs perspective they found it was easier to implement the new communication style than they anticipated:

> *"I also never knew that it would be so easy to adapt to the new style of getting your message across. I think it was a very good course."* (FGI 2)

The patients realised that this was a new way of being educated and encouraged the HPOs to continue with this.

> *"They (the patients) asked us 'why didn't you do it like this before, we have been here in this institution for a long time but you didn't do it?'"*(FGI 2)

Design of the educational sessions

The HPOs overwhelmingly felt that the programme was needed in their setting and should continue in future and even expand to other conditions as well. They felt that an extra topic on sexuality in diabetes should be added in future and that the diabetic patient's partner or a family member should also attend some of the sessions:

"This is a great programme. I think it should continue and I think it should continue with the other chronic diseases as well." (FGI 3)

"…Because a lot of them experience sexual problems being a diabetic. Their partners don't understand what is going on especially the men and they would like to have a gathering where they can have their partners with them. So the partners can also hear what the problems are that a diabetic gets and then they can talk about it." (FGI 3)

The resource materials

The resource materials were regarded as a valuable component of the programme by the HPOs. The HPOs felt that it worked well to help the patients to visualize what was shared. The patients understood the sessions better with the help of the resource materials. The resource materials were applicable in the relevant sessions they were used. The HPOs used the resource materials to re-structure the patient's menus and to literally show them how big a portion size is. They used the flip charts to explain the pathological process of diabetes.

"What helped more now is the actual material because now they can look at it. Before they had to visualize it." (FGI 3)

"Especially the portion sizes were quite an eye opener. Because you could show them the pictures and now you organize your own menu, this is how you can adjust it according to your circumstances." (FGI 2)

Organisational issues

Several HPOs had a problem finding suitable space at their facilities to hold a group session. Facilities had few spaces suitable to group interaction, especially in the mornings when the health centres were full and space was committed to other purposes. Many spaces were less than ideal in terms of noise and other disturbances. A few made plans to rather use other facilities in the community; whilst others made special arrangements at their health centres.

"I also have a problem at my facility about accommodation. I started by going into the community because in our area there is a library and there is a rank office and

there is a youth centre. So I went out and tried Plan B because my facility could not accommodate me with a group." (FGI 2

The HPOs felt that it was important to discuss what they were doing with the facility manager and to get all other staff in the facility on board. This helped with organisational issues such as the timely dispensing of patients' medication by the pharmacist on the same day as the group session takes place. The facility manager also helped with these organisational issues. Some HPOs had trouble with the pharmacists who felt that the patients coming to the sessions can't be treated differently to other patients. At another facility the pharmacist made a very good contribution to the flow of the sessions by helping patients who attended at least three sessions first. This increased patient participation because once the patient completed the sessions they got VIP status and were helped first at the pharmacy for the rest of the year.

"But you know what, you can arrange if somebody comes to the group, and their medication is for the Friday or whatever, I would go to the Facility Manager, not doing things on my own because then you get into trouble. I would give the cards to her and she would arrange that." (FGI 2)

"Our pharmacist, she suggested that if you did three of the four sessions I had a sticker that I put on their card. So when they come to collect medication or they are just coming from doctor, they get first preference. They put their card in and then almost immediately their medication is made up and they leave, for the rest of the year." (FGI 3)

Poor attendance and its consequences

All the HPOs had problems with poor attendance and people coming on the wrong dates for their group sessions or out of sequence. This led the HPOs to re-structure their sessions. The HPOs had to be prepared for any one of the four sessions on a particular day, because they did not know which sessions the patients would have previously attended:

"There (second session) was also a new person in the session. I had to first summarize the first session before I could go into the second session." (FGI 2)

"This is my bag, everything is in here. So if they already had session one or most of the people must have session three, everything is in this bag. We actually said it is a good idea because now you come and you must bring session two's things but then

you see that most of them have session three here. So everything was in here so you just pull out whatever session you must do. That is how I coped with it." (FGI 3)

The HPOs gave their feedback on why they thought there was poor patient attendance overall:

- Patients weren't contacted to inform them of when they were expected to come for the next session:

  "The most people that I got were people that said they were never phoned." (FGI 2)

- Patients were working and could not get time off from work to attend the sessions.

  "A lot of them were working. They couldn't attend the groups. That was one of the barriers that I experienced." (FGI 2)

- Patients shared cell phones with family members and then never received the SMS message. In one of the FGIs a case was reported where the husband was in the Eastern Cape and phoned to ask why a specific text message was sent to ask that he attend the health centre. In the end his wife was at the health centre earlier in the day, but missed the session because the cell phone was with her husband in the Eastern Cape:

  "Most of the reasons are that the SMS message is not working to our people because they are not using their own cell phones." (FGI 2)

- Delayed cell phone messages, because of network problems, could also cause patients to receive the information too late.

  The other one said that the SMS is after 10h00 of which he was supposed to be in the group at 10h00. So sometimes it takes time because of the network". (FGI 2)

Improvement suggestions

The HPOs made a number of suggestions to improve the educational programme, which were mainly aimed at increasing attendance.

- The HPOs felt that there should be a standardized attendance certificate that they could hand out to patients who attended the sessions during working hours:

> *"Also a request from some people attending the groups was that if we can get a letter maybe from….A letter for work stating that they are part of this research. Like something so that their bosses will know why they need to take off."* (FGI 2)

- The HPOs suggested that the patients should rather be telephoned than sent a text message on their cell phones:

> *"If somebody can just phone them and then talk to them I think it will work rather well than sending a SMS to them."* (FGI 2)

- The HPOs wanted to have a glucose monitoring machine available for each group where the HPOs could test the patients as a motivation for the patients to lower their blood glucose and attend the sessions.

> *"Another suggestion is that maybe if you have a little machine then they can come to you to the day hospital then you do it. (Glucose finger prick test) Then they come maybe once a week and then they can be monitored week by week."* (FGI 2)

Perceived changes in the patients

The HPOs reflected on a number of changes that they saw in the patients as a result of the educational programme:

- Self-efficacy: The HPOs perceived that the sessions improved patient's confidence and sense of control over issues such as their diet and medication, despite their circumstances:

> "*They (the patients) are more in control."* (FGI 2)
>
> *'I am 58 years of age. I am a diabetic for about 10 years and since I attended the sessions with [the HPO] it gets more understandable for me. For my first*

few years I did not understand anything about the diabetic but since I have attended the sessions with [my HPO] it gets more interesting and I feel myself. I just want to thank [my HPO] for guiding me and giving me more information about diabetic. I know how to eat and how to use my medication.' (A letter one of the HPOs received from a grateful patient)

- Self care activities: The sessions helped the patients to understand the importance of their medication, leading to increased overall adherence to treatment. Weight loss was reported among some patients and one HPO started an exercise programme with the group after the patients recognised that they needed to exercise to lose weight. Some reported smoking cessation after the programme was delivered.

  "She (a patient) is now taking the medication and she is taking the insulin as prescribed." (FGI 3)

  "One of them lost a lot of weight and some of them are still trying and what some of them was saying that you eat all the healthy stuff, but it is just that they are overeating." (FGI 3)

- Glycaemic control: The HPOs could see that there was an improvement in the patient's blood glucose levels.

  "Their sugar levels they really dropped." (FGI 3)

Discussion

Key findings

From the HPOs perspective this was a viable and effective educational programme. It was evident that the HPOs felt that the training process in group MI was effective, and equipped them with the necessary skills to deliver the sessions. This shows that this training method can be used to train mid-level health workers from low and middle income countries and that they can be trained in group MI.

The feedback on the sessions was dominated by frustration with poor patient attendance, discussing the reasons for this and suggestions to overcome this problem. The problem of patient attendance may have been enhanced by the study design which required the same group of patients to attend the sessions. Outside of a research study a more pragmatic approach to attendance could be adopted on an ongoing basis that would allow patients to attend more spontaneously and when convenient to them.

Implementing the group MI style was easier than expected and there was positive feedback from the patients attending the sessions. The patients themselves appeared to have made positive changes because of this. The resource materials were perceived as relevant, understandable and useful in delivering the sessions and a valuable addition to the programme.

Problems at CHCs were mostly focused on space issues and this needs to be addressed in future. HPOs developed innovative ways of solving the space problems faced, although they needed to discuss all their plans with the other key stakeholders at the facility.

The resource material that was used in the study was perceived by the HPOs to enrich their sessions. They felt that it helped patients to visualize what was said in the groups and that misinterpretations of what was said could be avoided. Though resource material may increase costs, it was seen as an important factor in the sessions.

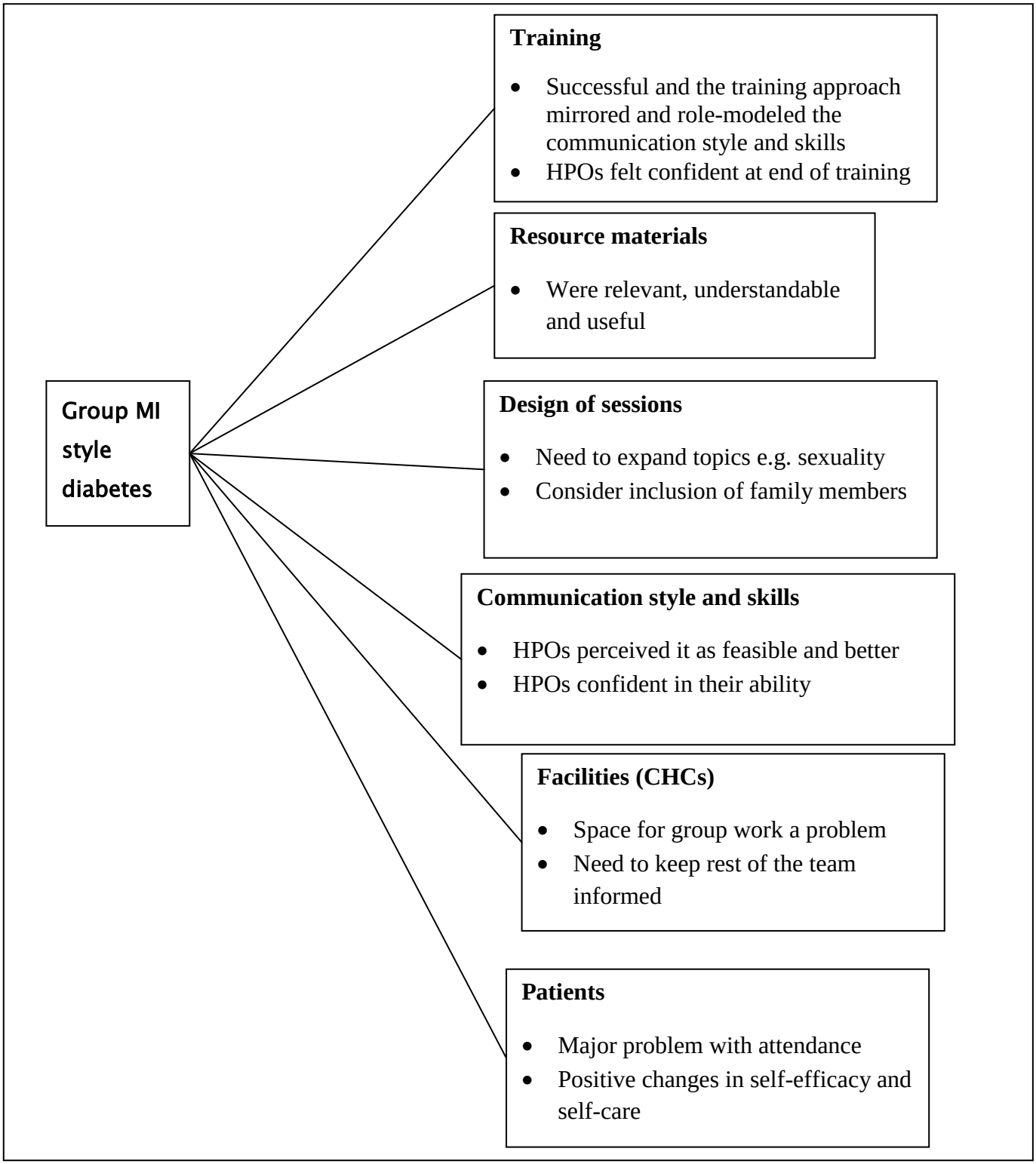

Figure 1: Summary of the HPO's experience

Comparison with existing literature

The best article on group diabetes education was a Cochrane review that included 12 different studies. [12] Interestingly all these studies made use of tertiary educated people such as doctors, nursing sisters or dieticians to facilitate the groups. My study suggests that it may also be possible to use mid level workers, like HPOs, to conduct these groups if they are provided with effective training. Another study already showed that their knowledge of diabetes education messages, once trained in the subject, is on par with doctors.[16]

A guide developed by Wagner and Ingersoll [13] recommended that counsellors should be trained in group MI to help alcohol abusers stop drinking. My study suggests that group MI may also be useful in the context of diabetes, although its effectiveness has yet to be analysed in the larger study. The study gives much needed information on the training and experience of mid-level workers in group MI and no other article in the literature could be found on this topic.

Though we still have to wait for the results on how effective the programme was in terms of self-care activities it seems to be perceived as effective by the people who delivered the sessions. The manager of the HPOs has also requested that the other HPOs be trained as she is convinced the educational programme is working. They also received positive feedback from the patients attending the sessions. From the HPO's perspective they had the skills needed to deliver the programme and the patients perceived the programme as positive. This will be confirmed by two pending studies about the perspective of the patients and evaluation of the HPOs competency. [19, 20]

Strengths and limitations of the study

The data on the effectiveness of the programme is not yet available to determine if the programme is as effective as the HPOs perceive it to be. The analysis of the patients' perspective and the HPOs fidelity to the programme and competency in MI by direct observation and recording is also not yet available. This report, therefore, gives a one sided perspective of the HPOs only.

Another limitation was that the principal researcher collected and interpreted the data alone and this may increase the chance for assumptions, values and beliefs to influence the process. The researcher was assisted in the process of data collection and analysis by her supervisor.

Language may have influenced the FGIs as only English was used and though the HPOs were fluent in English it was their second language. They mostly speak Afrikaans and Xhosa as a first language. Participants might have been more comfortable speaking in their first language, and might have expressed themselves better.

One of the strengths of the study was that we did made use of respondent validation after the first two sessions and the HPOs did feel that they were correctly interpreted and quoted. Another strength of the study was that the principal researcher was an independent person and should not have influenced the HPOs views in the way that one of the trainers or other researchers might have done.

Implications and recommendations

The results of the other parts of the study on the effectiveness of the programme, perspective of the patients, fidelity and competency of the HPOs and cost of the intervention should be obtained before making any final recommendations. However from the perspective of the HPOS the following recommendations could be supported:

1. Expand the training of HPOs in MI style groups to other HPOs in the province
2. Include the resource materials in future educational programmes
3. Consider expanding the approach to other chronic conditions
4. Innovative ways to remind patients about dates should be developed or explored that are suitable for the setting.
5. Expand the sessions to include other topics e.g. sexual problems and diabetes
6. Including family members in some sessions may improve outcomes
7. Plan space for group education in health centres

Conclusion

HPOs perceived the approach to training to be successful and felt confident in their ability to deliver the education programme. Feedback on the most useful components of the programme centred on the improvement the new communication style and skills brought to the sessions, how this let to positive changes in the patients and how the resource materials improved the patients' ability to understand and comprehend their disease. Feedback on the less useful components centred on issues of poor patient attendance and lack of space in the facilities. The HPO's perspective needs to be triangulated with other research projects focused on the patient outcomes and perspectives and evaluation of the HPO's fidelity and

competency. This study however supports wider implementation of the educational programme.

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