CHAPTER 4

BARRIERS TO AND EXPECTATIONS OF PERFORMING PHYSICAL ACTIVITY IN FEMALE SUBJECTS WITH TYPE 2 DM MELLITUS

INTRODUCTION

Results form several important studies demonstrate that complications of diabetes can be prevented or delayed by controlling risk factors such as hyperglycaemia, hypertension and hyperlipidaemia. [55,56] Despite knowledge gained through these studies, adherence to treatment guidelines is low. [27]

The results of the first phase of the study have shown that the women with Type 2 DM attending the out-patient Clinic of the Mamelodi Hospital, are typically overweight, have high blood pressure, poor blood glucose control and lead sedentary lifestyles. These findings indicated that their adherence to treatment guidelines were not optimal. A logical next step would be to establish what the barriers to treatment adherence in this population of women would be.

The literature review has shown that patient-based barriers to diabetes care include socio-economic status (SES), out-of-pocket costs and physical access to services, transportation, and availability of health care personnel. It has also been shown that patients of a lower socio-economic standing have worse complication risk factor profiles, including glycaemic control and diabetes knowledge. [240]

Patients in Mamelodi have to travel to the Mamelodi Hospital to attend the diabetes out-patient clinic due to lack of suitable trained primary care providers in the suburb. Patients with lower income may want to see a doctor, but can afford neither the transport nor the hospital fee. It has been shown that such patients were less likely to report good health and had higher HbA_{1c} values. [241]

Access to quality diabetes care may also be a barrier to diabetes care. [242,240] The diabetes out-patient clinic at the Mamelodi hospital services approximately 3000 subjects annually. Routine blood tests are seldom done and only if indicated clinically. [243] The outcomes of the Epidemiology of Diabetes Complications Study have shown that care received from a diabetes specialist is associated with better self-management of the disease. [244]

Health beliefs may also be barriers to diabetes care. A heavier physique is indicative of health and happiness among many ethnic groups. [242] Food eaten and offered is a reflection of social status and prestige in many areas in the African tradition. [245]

Furthermore, the concept of a chronic disease is poorly understood by some African cultures and only acute symptoms are recognised. [22, 242]

Glasgow and co-workers [191] did a literature review on psychological barriers to diabetes self-management and reported that low self-efficacy and low levels of family support contribute to low levels of self-management and diabetes-related quality of life. Diabetes-related distress and depression may also be barriers of effective self-management according to these authors.

AIMS OF PHASE TWO OF THE STUDY

The aims of this study were to investigate the personal and environmental barriers to doing exercise in black females with Type 2 DM Mellitus residing in Mamelodi. The participants' knowledge and perceptions of exercise and the kind of exercise they wanted to do were also investigated. The last aim of the study was to establish the outcome expectations of performing physical activity in this sample of subjects.

METHOD

Ethical clearance was obtained form the Ethics committee of the Pretoria Academic Hospital) Number 116/99). The superintendent and matron of the Mamelodi Hospital also consented to the study.

The initial conceptual framework is presented in Figure 4.1.

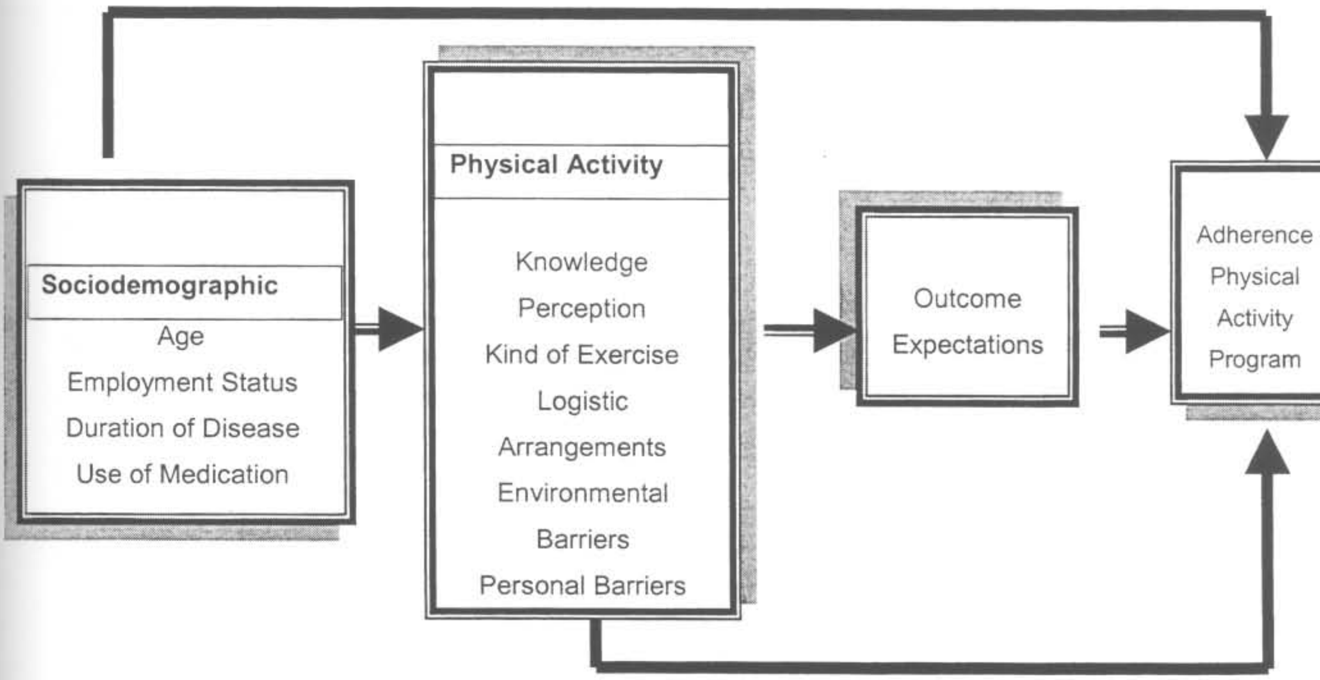

FIGURE 4.1 INITIAL CONCEPTUAL FRAMEWORK OF FACTORS INFLUENCING THE INITIATION AND MAINTENANCE OF PHYSICAL ACTIVITY IN BLACK WOMEN WITH TYPE 2 DM

STUDY DESIGN

Demographic and qualitative data were captured. The phenomenological approach by means of focus group interviews was used to provide an understanding of personal and environmental barriers to doing exercise in this sample of patients. The participants' knowledge and perceptions of exercise and the kind of exercise they wanted to do were also investigated in this way. [32]

SUBJECTS

The convenience, purposive sample consisted of a subset of a larger study that had been conducted one year prior.[246] Twenty-eight black women with Type 2 DM, between the ages of 48 and 70, who participated in the previous study, were contacted by telephone. All the women were attending the Mamelodi Hospital Diabetic Out-patient Clinic in Mamelodi. Subjects from the same gender and socio-economic background were used to ensure homogeneity of the group. [249] The only exclusion criterion was disinterest in doing exercise.

Four to 10 subjects were recruited for each focus group to avoid no shows, an unproductive discussion of too small a group of subjects or the danger that smaller discussions may start in a too large group. [32] Subjects were compensated for their transport costs and were served refreshments and received an incentive after the focus group. The data capturing commenced on the 22nd of March 2001 and was completed on the 10th of April 2001.

INSTRUMENTATION

Structured questions were used. The author developed these questions after a literature review and consultation with colleagues. [32,203] Open, probing questions around a topic were used to get maximum depth in the answers from subjects.

The focus group technique was a cost-effective method to obtain in-depth information from a homogeneous group that may be useful in developing intervention programs for risk reduction of chronic diseases. [247] It was also an effective method of obtaining data from subjects with a low educational level. [248]

The exploratory approach was followed to understand the needs, language and beliefs of the sample and to gain insight into the subjects' thoughts about exercise and what their thoughts on possible barriers were. Their outcome expectations could also be established this way. [249]

The open response format of the focus group provided an opportunity to obtain large and rich amounts of data in the participant's own words. However, generalisation of the results is difficult, because small numbers of subjects are interviewed and they are usually not randomly selected.

SETTING

The focus groups took place in a relaxed, informal setting at the Mamelodi Day Hospital, which was accessible, convenient, non-threatening and accepting to the participants and encourage open discussion. It had adequate seating, ensuring maximum opportunity for eye contact with both the facilitator and other group members. The two audio-tape recorders were placed centrally to ensure good quality recording.

INTERVIEWS

A skilled and expert group facilitator, a qualified physiotherapist, who was knowledgeable about Type 2 DM and familiar with group dynamics conducted the interviews. She also translated the questions into isiTswana.

A fieldworker, a qualified Tswana speaking nurse, was trained to take detailed field notes and record behavioural data.

The research team met beforehand to prepare the venue, test the equipment and to clarify each member's role. The focus groups were conducted in isiTswana.

The first question was simple and neutral to allow the participants to feel comfortable and the get to know a little bit about the other persons around the table and to allow rapport to be established. All the questions were addressed the group as a whole, taking care not to single out individual participants. The questions logically progressed from the general to the specific and were asked in the four main categories. The questions are presented in Table 4.1.

TABLE 4.1

QUESTIONS USED FOR INTERVIEWS DURING FOCUS GROUPS IN ENGLISH AND isiTSWANA

Knowledge and perceptions / *Kitso*
Do you want to do exercise?
A o blatla go ikwetlisa?
What do you perceive exercise to be?
Go ya ka wena, o akanya gore go ikwetlisa ke eng?
Why do you think it is important to exercise?
O akanya gore botlhokwa ba go ikwetlisa ke eng?
Logistical / *Ditlhomamiso*
What sort of exercise do you want to do?
Ke mokgwa ofe o batlang go ikwetlisa ka one?
Do you want to exercise on you own or in a group?
A o batla go ikwetlisa oleng mong kgotsa le batho ba bang?
What is the best time of day for you to exercise and where do you want to exercise?
Ke nako efe va letsatsi e e gosiametseng go ikwetlisa?
Where do you want to exercise?
O batla go ikwetlisa felo gofe?
Environmental and personal barriers / *Dikgoreletsi*
What will keep you from exercising?
Ke eng se seka go thibelang go ikwetlisa?
What would make you leave and exercise program?
Ke eng se seka dirang go re o tlogele go ikwetlisa?
What would make you stay in an exercise program?
Ke eng se seka dirang gore o kgothalle go ikwetlisa?
Expected outcomes / *Ditlamorago*
How do you think you can benefit from doing exercise?
O akanya gore ditlamorago tse mosola tsa go ikwetlisa mo go wena e ka ba eng?
How do you want to feel if you exercise?
Maikutlo a gago, o batla a bajwang morago ga go ikwetlisa?

RESEARCH PROCESS

The subjects reported on the day of their appointment to the research venue at 09:00 in the morning. Each subject was welcomed and introduced to the research team members. Informed consent was obtained from each patient after the aims, procedures and possible benefits of the study were explained to them. Subjects had the opportunity to ask questions before the consent form was signed, witnessed and each subject received a signed copy of her own consent form. A short demographic questionnaire was then completed.

The subjects, who consented to the study, were thanked, given a nametag to provide a basis of building greater rapport between the facilitator and the participants. It also enabled the facilitator to direct questions at a group member by name and simultaneous eye contact. It also develops greater identity and cohesiveness between the group members.

The facilitator welcomed the participants and introduced herself and the fieldworker. Subjects were asked to introduce themselves as an icebreaker. The facilitator explained the purpose of and the course of the focus group discussion. The importance of each participant's contribution was stressed. The rules for the group discussion were given and the role of the fieldworker was explained.

The use of the two audio-tape recorders was explained and subjects were ensured that the recordings will only be listened to or looked at by the researcher and that the participants will stay anonymous.

A definition of physical activity and exercise was given. The research question was put forward and participants were asked to participate in the discussion. The facilitator addressed the questions to the group as a whole and no subject was singled out. Asking inquisitive questions, using summaries and reflection, without interfering with the dialogue of the interview, facilitated active participation of all group members.

The fieldworker documented the order in which subjects spoke to aid voice recognition of the recording. Non-verbal behaviour such as eye contact, posture, gestures between group members were also documented.

After the focus group, subjects were thanked and acknowledged for the useful information. Teas and eats were served.

Debriefing with the research team was done to discuss important information during the post-group discussions.

The focus groups with different participants were conducted until a clear pattern emerged and subsequent focus groups repeated information. [250,251]

POSSIBLE SOURCES OF BIAS

Multiple focus groups were held to decrease threats to external validity. Careful selection and training of the facilitator in the manner of questioning, reduced bias in data collection. Aggressive and dominant subjects were prevented from taking over the discussion.

STATISTICAL AND DATA ANALYSIS

Demographic data were entered into a file on the Statistics – program on the computer, screened for missing values and ranged checked. Data were analysed using Statistics ® software. Data were summarised with descriptive statistics: mean, SD, median, range, frequency and percentage.

The qualitative data were analysed using a grounded theory approach. [251] The tape recordings were transcribed in extenso. The Tswana transcripts were transcibed and then translated into English by a trained multilingual nurse working at the Mamelodi hospital. Detailed field notes were made both during and immediately after the observations at the hospital.

Transcripts were read through several times by the researcher to get a sense of common themes that were relevant to the research question. [251]

OPEN CODING

Line-by- line analysis was done to generate categories. Notes were made, throughout the reading on general themes in the transcripts. This enabled the researcher to become more fully aware of the participants' frames of reference. Open coding was done by reading through the transcripts again and by making as many headings as necessary to describe all aspects of the content. These headings formed the concepts identified.

AXIAL CODING

Similar concepts were then grouped together into broader categories. In this way the numbers of categories were reduced. Repetitious and very similar headings were removed to compile a final list of categories. These were then coded. [251]

IDENTIFICATION OF THEMES

Making connections between the categories identified the most important themes from the data. From this, the theory or relationships between categories could be identified. [251]

RELIABILITY CHECK

An independent qualified physiotherapist, who is also a qualitative researcher, was asked to review subsets of the data and to generate categories without seeing the researcher's list. In this way researcher bias was reduced. Lists were compared, discussed and adjustments were made.

The degree to which the chosen categories covered all aspects of the interviews were evaluated and adjusted. Each transcript was then worked through with the list of categories and sub-headings and coded according to it. Ten percent of the data was given to an independent researcher for a reliability check at the researcher's coding scheme. A percent agreement was performed between independent researcher's and the researcher's codes. The use of the codes that were unclear was identified.

Decision rules were created to clarify the use of the codes that were unclear. Another small subset was then re-coded until the inter-rater reliability was 85%.

This process ensured that the researcher's codes and categories were understandable, exhaustive, mutually exclusive and independent. [251]

Each coded section of the interview was then cut out of the transcript and all items of each code were grouped. The cut out sections was pasted onto sheets, headed-up with the appropriate headings and sub-headings. All sections were filed together for direct reference when writing up the findings. Copies of the complete interviews and the audio tape recordings were kept in a save place.

TRUSTWORTHINESS OF THE DATA

Credibility of the data was obtained by the fact that the researcher did not facilitate the focus groups. In this way the researcher could not have influenced the subjects with her knowledge in the field (*reflexivity)*.

Field notes were kept throughout the research process. The researcher discussed the research process and findings with an impartial colleague who has experience with qualitative research (*triangulation)*.

The transferability of the data was improved by providing a dense description of the background information on the subjects. The description of the exact methods of data gathering, analysis and interpretation contributed to the auditability of the study. A colleague, who was not involved in any other aspects of the study, but who is familiar with the process of category generation was asked to read through two transcripts and to identify a category system. It was then discussed with and compared to the researcher's category system (*confirmability)*.

The exact language of the interviews was analysed with meaningful segments of speech (*thick low inference data)*.

RESULTS

The results are presented in the following order:
Demographic, focus group data and integrated results.

DEMOGRAPHICAL DATA

The demographics of this sample by ethnicity, employment status, receiving pension, duration of diabetes and type of medicine used are provided in Table 4.2.

TABLE 4.2

DEMOGRAPHICAL DATA

Demographics		N	%
Ethnic group	North Sotho	5	18
	Ndebele	4	14
	Zulu	5	18
	Mopaedi	3	11
	Tswana	5	18
	Tsonga	2	7
	Other	4	14
Employment status	Full day work	1	4
	Part-time work	1	4
	Unemployed	26	92
Pension	Yes	14	50
	No	14	50
Duration of disease (years)	1-4	8	29
	5-7	7	25
	8-10	4	14
	11-13	4	14
	17-19	2	7
	20-22	3	11
Medication	Insulin injections	5	18
	Tablets	23	82

The mean age of the sample group was 60,18 years (6.55). Ages ranged from 48 to 70 years, with a median of 60.5. Other ethnic groups included single Coloured, Mopele, Moswazi, and Motebele subjects. All of the metioned ethnic groups could understand and speak Tswana.

FOCUS GROUP DATA

The subjects were relaxed during the focus groups. They laughed easily and used a lot of hand signs and body movements during talking. Three subjects got up and demonstrated how they would do certain household tasks.
The following categories were derived from the data:

- Perception of exercise.
- Personal barriers.
- Environmental barriers and logistical arrangements.
- Outcome expectations of an exercise program.
- Adherence to an exercise programme.

PERCEPTION OF EXERCISE

All 28 subjects reported that they were doing household chores and that they saw that as a way of exercising. Household chores consisted of doing laundry, going to the shops, cooking, washing, gardening, cleaning the home, carrying a baby on the back.

Walking as a way of exercising was mentioned 40 times during the 5 focus groups, however the intensity of walking ranged from walking far distances to a walking as a possible way to exercise.

Two of the participants put it like this:
" I always walk distances and I do household chores and that way I exercise"
" To me exercise means going to the garden to water my crops and harvest and then go home. When I arrive home, I clean the yard and then I sit down. In the afternoons I take a walk around my yard."

Subjects also expressed the following benefits of exercise:

TABLE 4.3

SUMMARY OF IDENTIFIED BENEFITS OF EXERCISE

Identified Benefit	N	Frequency of response	Percentage %
Weight loss	28	9	32
Better circulation	28	6	21
Helps for Arthritis	28	17	61
Body stay healthy	28	6	21
Constipation	28	1	4
Sleep better	28	1	4
Improve blood sugar	28	10	36
Feel better	28	7	25
Relaxes them	28	5	18

In the words of one of the participants: "*Sometimes when you wake up, you are not feeling well, sometimes you meditate about your problems, but when you exercise, you don't concentrate on those things and you become happy and you believe that everything will be fine.*"

PERSONAL BARRIERS

Subjects expressed psychological and physiological barriers to exercise. Psychological barriers were stress-related, not feeling well and forgetfulness.

"When you arrive home an you feel bad and you meditate on other things in life and your sugar level goes up…."

"I am meditating a lot about my problems and you know diabetes makes you forgetful"

" I am always on and off and I can't be active"

Several subjects also mentioned that their bodies were " *already sick with diabetes*".

Two subjects also felt that they had lost too much weight.

Two more subjects indicated that they were too lazy to exercise. *" I know that we are supposed to exercise, its just that we are so lazy to exercise"*

Subjects also indicated that they did not know what other exercises to do apart from walking and doing household chores and that they were not used to make choices regarding health care for themselves. One subject was of the opinion that people would think that she is insane if she exercise, it is for older people.

Two other subjects indicated that they did not want to lift their legs in lying, did not like running around and that they did not want to wear gym clothes.

One subject felt that diabetes patients were not treated well at the Diabetes clinic and had to wait long time to see the doctor, only not to be informed about their illness.

"Sometimes you come in very tired and the doctor do not tell you anything….. "

Physiological barriers to exercise are presented in Table 4.4

TABLE 4.4

SUMMARY OF PHYSIOLOGICAL BARRIERS TO EXERCISE

Identified Physiological barrier	N	Frequency of response	Percentage %
Tiredness	28	10	36
Arthritis	28	10	36
Foot problems	28	6	21
Sore body	28	4	14
Respiratory problems	28	3	11
Other illnesses	28	2	7

ENVIRONMENTAL BARRIERS AND LOGISTICAL ARRANGEMENTS

The lack of a convenient venue to do exercise in was the main environmental barrier. Sixty-one percent of the subjects staying in different areas of the Mamelodi community indicated that the Mamelodi Day Hospital was too far to travel to on a regular basis. The subjects wanted a venue for diabetics only, because they felt that there would not be harmony if other people joined the group. The venue should be easily accessible due to the cost of transport. They did not want to do exercises on Thursdays, because it is the day when they go to church. The majority of the subjects also felt that the exercise classes should not be on a clinic day, due to the long waiting periods at the clinic.

One subject mentioned that the community members were impatient with the older people, walking slowly.

OUTCOME EXPECTATIONS

Subjects had the following outcome expectations from an exercise program:

- Better health

  "When you wake up, you should not feel tired and heavy; your body must be flexible"

- Improved quality of life

  " We want to have a good life, there is nothing that can conquer a good life"

- Education

  "Apart from exercises, we need some advises one how to handle the illness and how to deal with problems like stress"

- Weight loss

  " It will help me reduce my appetite, because people with diabetes eat a lot"

- Stress relieve

  " I want to feel relaxed and peaceful….now after we have exercised we will be laughing and we will feel very good afterwards"

- Better control of the HbA_{1c}

  " I will remember that my sugar level is high"

- Group support

  "Advises that we can give each other, as we meet and chat"

- Fun

  " Attending exercises to be fun, so that we always want to come back again next Tuesday and that you will be looking forward to that day"

ADHERENCE TO THE PROGRAMME

The factors considered by the subjects to influence their adherence to an exercise programme are presented in Table 4.5.

TABLE 4.5

FACTORS INFLUENCING ADHERENCE TO THE PROGRAMME

Positive influences	Negative influences
• A program suitable for their physical abilities	• Visitors
	• Illness
• Good working relationship	• "Not feeling well"
• Group support	• Social responsibilities
• Only diabetes patients	• Household chores
• Agreement with program	• Cost of transport
• Patience of presenters of program	• Family affairs
• Improvement in health	• Difficulties at home
	• Tiredness
	• Laziness

Subjects felt that they were compelled to try the exercises if they were serious about their health.

"We won't stop as soon as we have started, it is not possible, we follow what we have been told…but if you are disrespectful you will not come to exercise"

DISCUSSION

Qualitative research methodology was used to improve the understanding of the perception of exercise, personal and environmental barriers to doing exercise and outcome expectations of an exercise program in a sample of mainly older female Type 2 DM Mellitus patients, attending the Mamelodi Diabetes Clinic. The sample group consisted of 11 ethnic groups of whom 92% were unemployed. The duration of the disease ranged from one to 22 years and 82% of the patients were using oral hypoglycaemic agents.

PERCEPTION OF EXERCISE

All 28 subjects reported that they considered doing household chores namely gardening, housework and walking as exercise. This perception of exercise by the sample corresponded well with the types of physical activity for older people as documented by the World Health Organisation. [252] It also correlates with the role of women in the African tradition, where the younger women usually do the hard physical work, while older women look after the home and small children. [23] Walking is done at a slow place when attending community functions and going to church. Kriska, [253] also reported that housework and family care taking, appears to take a substantial portion of the total energy expenditure of women in an average day.

In spite of this finding, the results of the first phase of the study demonstrated that the subjects were leading a sedentary lifestyle. [246] It makes therefore good sense to include the activities considered by the sample to be exercise in any planned intervention.

Overall, evidence points to the benefit of continued regular moderate physical activity. It does not need to be strenuous or prolonged and can include at least 30 minutes of daily leisure activities such as walking or gardening, which are readily attainable by this sample group. [254,255]

PERSONAL BARRIERS

Personal barriers are patients' representations of their illness, including disease-related beliefs, emotions, knowledge and experiences. Subjects in this study expressed lack of knowledge, psychological and physiological barriers to exercise. These findings correlate with the results of a recent study by Samuel-Hodge and associates [203], on the influences on day-to day self-management of Type 2 DM among African-American women. Being tired can be attributed to multiple causes including general life stress, physical exertion and diabetes. Older adults with diabetes are often incorrectly stereotyped as being slow and unmotivated in managing their diabetes. Diabetic complications can interfere with sleep and increase the risks of falls. Fear of falling will force patients to reduce their mobility.

Sameul-Hodge and co-workers [203] who reported that health-related stress was described in terms of "worry" and feeling "tired", have also described the psychological impact of Type 2 DM. According to Glasgow et al, [191] diabetes-related tiredness may be caused by the psychological impact of the disease on the patient in terms of fear and worry about the disease. This is also demonstrated by the following quotations by participants in this study: *"I am meditating a lot about my problems "*and *" I am already sick with diabetes".*

The physiological barriers can be attributed to a sedentary lifestyle and complications of Type 2 DM, such as hypertension and macro-vascular disease. [2] Bopape [195] examined the beliefs and attitudes of patients with Type 2 DM in the Northern Province of South Africa and reported that patients, who were diabetic and hypertensive, reported that they were short-tempered. They also complained about complications such as dizziness, fatigue, exhaustion, disrupted sleep, blurred vision and foot cramps.

The lack of diabetes knowledge can also contribute to health-related stress: *"Sometimes you come in very tired and the doctor does not tell you anything."*

Subjects indicated that they did not know what other exercises to do apart from walking and doing household chores and that they were not used to make choices regarding health care for themselves. In a recent focus group study on African American women's exercise barriers the following was stated: "We as Black women have not been taught about exercise, where this is like a luxury thing. I was not taught the value of exercising or eating right until I got to be an adult..." [256]

The Consumer Information processing theory [175] states that knowledge is essential for patient to make a decision to start exercising. The World Health Organzation [173] states that an individual would have to have technical knowledge and skills of the required health behaviour. An effective diabetes management program must therefore address these barriers. It should also respect an individual's habits, routines and lifestyle and incorporate social support. [184]

ENVIRONMENTAL BARRIERS

The lack of a convenient venue for exercise was the main environmental barrier mentioned by the majority of the subjects. The women with Type 2 DM in Mamelodi stay in nine different divisions spread over an area of 48,9km^2. Community resources and venues are scarce and usually used for several other community activities. Others have also reported no access to exercise facilities, cultural appropriateness of women walking alone and their safety. [32,108,151]

OUTCOME EXPECTATIONS

The major expectations of the subjects were that the exercise programme would improve their functional capabilities, increase their knowledge and improve their well being. These outcome expectations support findings by Crosson, [256] who reported outcome expectations such as decrease in weight and release of stress in her focus groups with African American women.

The findings of the current study also correlate with findings from the study by Maillet et al. [32] She reported that subjects wanted education and support from their families.

ADHERENCE TO EXERCISE

Researchers have been unable to conclusively distinguish strong characteristics of exercise adherence and exercise non-adherence. [174,192]

The following categories could however be identified:

- Attitude towards exercise
- Support by significant other persons
- Perception of control
- Motivation

The responses of the subjects in the present study have shown that the same categories will also influence their adherence to exercise. Subjects had a positive attitude towards exercise, because they had a good perception of exercise and knew what the benefits of exercise were. The need for support by significant other persons was expressed by their need for good working relationships, patience by the presenters of the exercise program and group support. The respondents wanted to have control in the program by stating that it should be suitable for their physical abilities, that they should agree with the program and that it should be for diabetic patients only.

The negative influences on adherence to exercise mentioned by the subjects may be an indication of poor motivation to do exercise. Extended adherence and compliance with behaviour changes is a critical factor in the success of a diabetes self-management programme. However, the decision not to comply with such a program may be quite reasonable, particularly if the program does not meet patient expectations, is inconvenient or conflicts with other priorities, such as social responsibilities, household chores and family affairs. Exercise is voluntary and time-consuming. It can therefore interfere with other activities and responsibilities of daily life. [27]

Oldridge and Spencer [257] have shown those barriers to exercise; specifically lack of spouse support and inconvenience was associated with the highest risk for dropout from an exercise program.

CONCLUSION

It can be concluded from the results of this qualitative study that the subjects had a good perception of exercise. They knew the benefits of exercise and wanted to have a better quality of life by means of feeling better and improved functioning on a daily basis.

However personal and environmental barriers may contribute to a risk for dropout from an exercise program if it is not addressed. Patient beliefs, attitudes and behaviours are influenced by cultural and socio-economic factors and are important. The relationship of culture to health beliefs, attitudes and behaviour is especially important in the treatment of diabetes, which usually includes changing patterns of eating, physical activity and other culturally embedded behaviours. If a diabetes exercise program is to effective, it must be sensitive and relevant to the culture of the people expected to carry them out.

It is clear from the results that a co-ordinated team approach is needed to address these outcome expectations. Clark et al [142] also endorses such an approach in a recent publication on changing the way diabetes is treated.

The findings of this study contributed to the planning of the exercise intervention in a number of ways. Since the subjects indicated that they their perception of exercise was doing household chores and walking, it was incorporated into the home-exercise programme.

The patients also expressed lack of knowledge about exercise and it was therefore decided to have fortnightly educational and exercise sessions at the Mamelodi Hospital to educate the patients, to supervise the home-programmes and to improve exercise skills. The conceptual framework was therefore revised and is presented in Figure 4.2.

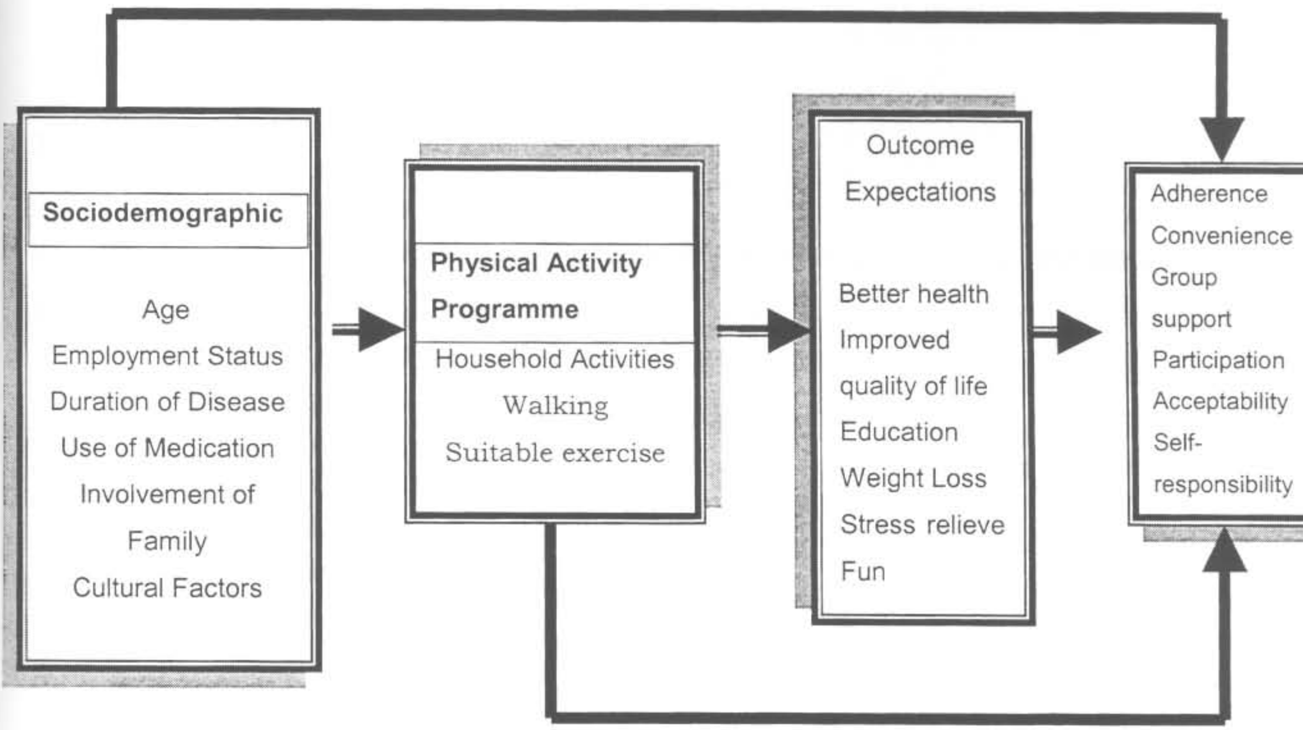

FIGURE 4.2 REVISED CONCEPTUAL FRAMEWORK OF FACTORS INFLUENCING THE INITIATION AND MAINTENANCE OF PHYSICAL ACTIVITY IN BLACK WOMEN WITH TYPE 2 DM

The Mamelodi hospital physiotherapy department was chosen as an exercise venue, since participants who would be recruited to take part in the study came from the all the sections of Mamelodi. They all know the hospital well, since they come there for follow-up visits on a regular basis.

Furthermore, due to logistical, resource and financial constraints it would not have been possible to do and control the planned intervention in the different sections of Mamelodi. The intervention is described in Chapter 5.