

The interaction between health service providers and people with diabetes in Palestine

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Acknowledgement

All my greatest appreciation to the Institute of General Practice and Community Medicine, University of Oslo, and all its staff. Especially, my research supervisor Gerd Holmboe-Ottesen who guided me through all the stages of the study. And my co-supervisor Professor Jak Jervell whom I benefit a lot from his experience and advice.

Thanks to the Community Health Unit, Birzeit University. And to Mrs. Hanan Halabi for her great help to me during my fieldwork in Palestine.

All the love and gratitude to my parents, dear fiancée, sisters, brother and my friends in Norway and Palestine whom their presence in my life gave me all the strength and faith in my work and study.

Thanks to NORAD for giving me this great scholarship, which enabled me to complete my Master studies in Oslo.

I wish my study would contribute in helping my people in Palestine, whom are in need for all the efforts offered.

Abstract

BACK GROUND: The prevalence of diabetes is increasing in the whole world and in Palestine. Prevention of the disease would help to stop the epidemic. Education is an important element in diabetes prevention and treatment. **OBJECTIVES:** Study the inter-linkage between diabetes health education and diabetes patients' self-management practices, to detect main barriers between educational intervention and the final outcome of controlling diabetes. **DESIGN AND METHODS:** 152 diabetes patients with an age ranges between (35-65), selected from three different un-specialised health clinics were interviewed, using pre-prepared questionnaires. The data was analysed by using SPSS. In addition to 2 focus group discussions held at the clinics, where 12 diabetes patients participated in it. 12 health workers were interviewed as well, using in-depth interviews and an interview guide. The data collected was analysed qualitatively. **RESULTS:** Out of 152 people with diabetes, 71% were females. 55% of the participants aged over 55 years old. The majority of the patients did not attend educational sessions at the clinics they visited because there were no scheduled educational sessions held there. 20% of the patients believed that diabetes education is important because it will help them to know how to control their disease. The knowledge of people with diabetes was considered good in some areas concerning diabetes, such as diet and foot care. There was no significant association between patients' level of knowledge about diabetes complications and the patients' educational background and duration of having diabetes. But the results showed significant association between knowledge of foot complications and the knowledge of foot care with the fact that the patients developed foot complications. Patients adhere well to prescribed medications but they do not emphasise on practising other means of self-management to combine with the medication treatment. The current crisis was considered the major barrier to diabetes education and self-management. **CONCLUSION:** people with diabetes recognise the deficit in diabetes education in their clinics. They wanted to learn more about diabetes and its management. The health workers wanted to improve diabetes education provided in their clinics, but all the efforts are postponed till the situation in Palestine gets better. There were no significant differences between the three clinics concerning diabetes education and the way it was performed.

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List of Abbreviations

CT-----	Computed Tomography
DPN-----	Diabetes Peripheral Neuropathy
FBS-----	Fasting Blood Sugar
HCC-----	Health Care Committees
HSC-----	Health Services Council
HWC-----	Union of Health Work Committees
IGT-----	Impaired Glucose Tolerance
MCH-----	Maternal and Child Health
MOH-----	Ministry of Health
MRI-----	Magnetic Resonance Imaging
NCD-----	Non-communicable Diseases
NGO-----	Non-governmental Organisation
PHC-----	Primary Health Care
QIP-----	Quality Improvement Project
SMBG-----	Self-monitoring Blood Glucose
STI-----	Sexual Transmitted Infections
TV-----	Television
UN-----	United Nations
UNRWA-----	United Nations Relief and Work Agency
UPMRC-----	Union of Palestinian Medical Relief Committees
WHO-----	World Health Organisation

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Chapter one

Introduction

Diabetes is increasing in the whole world, recent estimates predict that the number of persons with diabetes will be more than double, from 140 millions to 300 million in the next 25 years. And the greater proportion of the increase is likely to occur in the developing countries, which are the communities that can least afford it. The estimates are, that diabetes will increase there by 170%, from 84 millions to 228 millions in the next 25 years (1;2)

In Palestine, the prevalence of diabetes is assumed to be increasing, as evidenced by the records. Untreated diabetes causes serious complications such as, lower extremities amputation, vascular diseases and others, and these are seen in hospitals and clinics (3). According to the 1999 Palestinian annual report, the reported leading causes of death by diabetes in the West Bank for both males and females were 4.3% of the total death (4).

Most of the communities are moving towards modernisation, which implies that the number of hospitals and health care centres is increasing, resulting in more people being diagnosed with diabetes every day, and more complications related to uncontrolled diabetes are discovered too.

It is therefore of utmost importance that preventive measures are taken to stop this “epidemic”, first of all to prevent the outbreak of the disease, and secondly to prevent its complications.

Rationale

Recently two cross-sectional studies were carried out by Birzeit University using WHO criteria of 1985 for diagnosis of diabetes, investigating the prevalence of diabetes and its associated factors among people aged 30-65 years old. The first one was conducted in

1996 in a rural Palestinian community in the West Bank. The prevalence rate was found to be 9.8% for diabetes mellitus, and 8.6% had Impaired Glucose Tolerance (IGT). The second survey was conducted in 1997 in urban Palestinian community in the West Bank. The prevalence of diabetes mellitus was found to be 12%, and 5.9% had IGT (3). For women the total prevalence of obesity was 42.1% according to the international standards for a population of 30-64 years. For men, the total age standardised prevalence of obesity was 19.5% (5). These findings implied that more attention should be paid to these problems at the national level. There is a need for effective diabetes self-management, and the role of diabetes education to enhance it.

In this study the researcher will try to collect information from both the health care system and the people with diabetes, about health education and information that are given about diabetes, and diabetes management, and how it is perceived and implemented. The findings will be used as a basis for suggesting how diabetes health education can be improved, taking into account the main barriers that block the way for a successful control and good self-management of diabetes.

Chapter two

Literature Review

Diabetes in general

Definition of diabetes

The term Diabetes Mellitus describes a metabolic disorder of multiple aetiology, characterised by chronic hyperglycaemia, with disturbances of carbohydrates, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The effect of diabetes mellitus include long damage, dysfunction and failure of various organs, and it includes progressive development of the specific complications of retinopathy, with potential blindness, nephropathy, that may lead to renal failure, also neuropathy with risk of foot ulcers and amputation. In addition, the diabetes patient will be in a risk of cardiovascular, peripheral vascular and cerebrovascular diseases (6; 7).

Types of diabetes

- Type 1 diabetes (once known as insulin-dependent diabetes mellitus, or juvenile diabetes), considered an autoimmune disease, where the immune system attacks the insulin-producing beta cells in the pancreas and destroys them, so the pancreas produces little or no insulin. This type is usually developed in the children and young adults, but the disorder may appear at any age. Symptoms are; increased thirst and urination, constant hunger, weight loss, blurred vision and extreme tiredness.

-Type 2 diabetes (once known as non insulin-dependent diabetes mellitus or (NIDDM)). It is the most common form of diabetes. About 90 to 95 percent of people with diabetes have type 2 diabetes. Usually it is developed in adults over the age of 40, and about 80 percent of people with type 2 diabetes are overweight. In this type of diabetes, the

pancreas produces insulin, but for some reason the body cannot use the insulin effectively, which results in the unhealthy build up of glucose in the blood. The symptoms here are not noticeable as in type 1 diabetes. Symptoms include; feeling tired or ill, frequent urination, unusual thirst, weight loss, blurred vision, frequent infections, and slow healing of ulcers.

-Gestational diabetes, is a (carbohydrate intolerance) resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy, and usually disappears after the pregnancy is over, unless it was diabetes type 1. Diabetes in pregnancy may give rise to several adverse outcomes, including congenital malformations, increased birth weight and an elevated risk of prenatal mortality (6;8;9).

Who becomes diabetic?

The prevalence of diabetes mellitus is increasing in the world, particularly in the developing countries. One of the reasons could be the demographic and urbanisation change. But at the same time, it is the total population of the world, which is growing now. It is around 6 billion inhabitants, and will probably increase to 8 billion by 2025. At the same time the population is growing older (7). So, being old, over weight are contributing factors of getting diabetes type 2 (8).

Social causes; the urbanisation and changes in the life style, leads to higher intake of calories, fats, refined sugars, and lower intake of fibres, low physical activity, more cigarette smoking, higher salt intake, increased alcohol intake. All of this leads to obesity, glucose intolerance and diabetes (7;10).

According to some resources that believed in the role of stress in developing diabetes, there was a significant and independent role of physical inactivity, and psychological stress factors that were demonstrated in the development of diabetes (11).

In a present study, which is one of the few randomised controlled trials of lifestyle interventions; the aim was to evaluate a brief psychological intervention that can be integrated into routine usual care, to assist people to make the recommended lifestyle changes. So the topic of stress's effect is still under study. Especially the right way to measure stress, and to which extent it contributes in developing diabetes (12).

Other factors that might increase the risk of developing diabetes, are people who have family members with diabetes (especially type 2 diabetes)(8).

Reasons could also be environmental; the nutritional status of the fetes, where the inverse relationship between birth weight and prevalence of diabetes type 2, hypertension and tendency to coronary heart disease had been discovered. The lower the birth weight is, the greater is the tendency to develop diabetes type 2, in later life (7).

Obesity seems to interact with inheritable factors in determining the onset of insulin resistance, which is responsible for altered glucose metabolism, and pre disposition of type 2 diabetes (13). Because the plasma leptin, tumour necrosis factor, alpha and non-esterified fatty acid levels are all high in obesity. And they all help in developing insulin resistance (14).

But what we can obviously notice, is that body weight and the prevalence of obesity is rising so rapidly in many countries, and the prevalence of diabetes type 2 is rising in parallel. This is referred now to changes in the society towards modernisation. But the causes of obesity epidemic are not clear. More research is needed to establish a basis for prevention (15).

The rising prevalence of obesity is accompanied by increasing number of patients with the metabolic complications of obesity. The major complications come under the heading of the metabolic syndrome. This syndrome is characterised by plasma lipid disorders (atherogenic dyslipidemia), raised blood pressure, elevated plasma glucose, and a prothrombotic state. The clinical consequences of the metabolic syndrome are coronary heart disease and stroke, type 2 diabetes and its complications, fatty liver, cholesterol

gallstones and possibly some forms of cancer. Obesity is a predominant factor leading to insulin resistance, but the mechanistic link between insulin resistance and the metabolic syndrome is complex. The relationship is modulated by yet other factors, such as physical activity, body fat distribution, hormones, and a person's genetic polymorphic architecture (16).

The metabolic capacity of skeletal muscle plays a significant role in insulin sensitivity, and the blood lipid profile. The metabolic capacity of the muscle is a function of the individual's physical activity level. Several of these skeletal muscle features are risk factors for, or linked with life-style induced diseases, such as type 2 diabetes, hypertension, hyperlipidemia and obesity. The role of the skeletal muscles here shows the importance of people maintaining daily physical activity. If skeletal muscle has a high capacity for lipid oxidation, then more saturated fatty acids are oxidised, and more unsaturated fatty acids are build in the phospholipid fraction of the plasma membrane, giving it more fluidity and improved insulin sensitivity (17).

In an overview of gender and diabetes; results of a study done in the United Kingdom showed that type 2 diabetes has pronounced female excess in the first half of the last century. But is now equally prevalent among men and women in most populations, with some evidence of male preponderance in early middle age. Men seem more susceptible than women do, to the consequences of indolence and obesity, possibly due to differences in insulin sensitivity and regional fat deposition. Women are, however, more likely to transmit type 2 diabetes to their offspring (18).

It was proven in some studies that a male family member had a 1.97 times a higher chance of having positive history for diabetes than a female member has. These results were from Tokyo, Japan (19).

And in another study done among Mexican Americans, who had diabetes type 2 and are treated only by diet. Males exhibited higher fasting blood glucose levels than females. Males expressed stronger perceptions of control and social support for diet. Here we see

that males and females held differing beliefs about ability to control their diabetes and degree of social support for diet. The impact of gender differences on ability to integrate diabetes self-care, and on the effectiveness of diabetes programs has not been determined, but should be considered in future research (20).

Men expressed that diabetes had made a positive impact on their lifestyle. These were the results of study done in Australia. Men chose foods with confidence. Their concern about potential complications meant they chose to take better care of themselves. They were confident in their knowledge of diabetes, and while they took responsibility for themselves, being supported by their partner was helpful in managing their disease. They managed their life with diabetes by intrusiveness of the disease (21).

But when assessing the knowledge of people with diabetes, gender and duration of the disease did not appear to influence knowledge scores (22). And at the same time, there were no significant gender differences in coping with stress, which may influence diabetes self-management (23).

Complications of diabetes

The long term complications of diabetes mellitus includes progressive development of the specific complications of Retinopathy, Nephropathy, Neuropathy and features of autonomic dysfunction like sexual dysfunction (6;7).

Macro-vascular disease is the major complication of diabetes (24), which can be prevented by effective treatment of hypertension and hypercholesterolaemia, in addition to the treatment of hyperglycaemia. The macro-vascular disease affected the coronary artery, cerebral vessels and large peripheral arteries of lower extremities. The micro-vascular effect includes kidneys, eyes and nerves. And both of them are major causes of death (25).

Cardiac complications; diabetes patients had a higher prevalence of hypertension, dyslipidemia and obesity. And diabetes itself is a major risk factor for cardio-vascular

diseases. Diabetes patients presents with more frequent acute pulmonary edema, ventricular dysfunction, ventricular aneurysm and congestive heart failure. At the same time, 50% of the patients had pre-existing coronary heart diseases (26).

Retinopathy is the most common systemic disease. Nearly every one with type 1 diabetes, and more than 60% of those with diabetes type 2, develop retinopathy by the time they have diabetes for 20 years, due to the damage in the retina of the eye from the high blood sugar. This is capable of leading to blindness. Systemic screening examination is very important to prevent diabetes retinopathy (27;28).

Nephropathy; about 20%-30% of people with diabetes type 1 or type 2, develop kidney disease within 15 years. Because of the chronic high blood sugar which damages small vessels in the kidney, and resulted in kidney failure (28).

Diabetes peripheral neuropathy (DPN); is another complication of diabetes. About 30%-40% of people with diabetes develops nerve damage that can lead to numbness and tingling, pain or insensitivity to touch. Reason for this could be from the effect of chronic high blood sugar on blood vessels that supplies nerve cells (29;30;28).

Foot complication usually leads to ulceration and amputation. This is the most common foot complication of diabetes (31), also the most costly complication, especially in communities with inadequate footwear. It is the result of both vascular and neurological disease processes. Diabetes is the commonest cause of non-traumatic amputation of the lower limb, which can be prevented by regular inspection and good care of the foot (9).

The prevalence of gastrointestinal symptoms is found to be higher in diabetes patients than in non-diabetes patients. These symptoms can be like heartburn and constipation (32).

Metabolic syndrome; when the patient has diabetes mellitus or glucose intolerance with two or more of the other components. Like impaired glucose regulation, or diabetes,

insulin resistance, raised arterial pressure, raised plasma triglycerides, central obesity, and microalbuminuria (6).

Table 1- Risk of morbidity associated with all types of diabetes complication (33).

Type of complication	Relative risk compared with non-diabetes patients
Blindness	20
End stage of renal failure	25
Amputation	40
Myocardial infarction	2-5
Stroke	2-3

Diabetes in the Middle East:

Over the past two decades, there had been changes in the lifestyle of eastern Mediterranean countries, towards urbanisation. Which led to an increase in non-communicable diseases, such as cardiovascular diseases, hypertension and diabetes mellitus. The prevalence of diabetes mellitus in some of these countries is estimated as shown in the table (34;35;36;37).

Table 2- Prevalence of diabetes in some of the Mediterranean countries.

The country	Male	Female	Rural areas	Urban areas	Age group
Oman	13.1%	12.8 %	—	—	Between (30-64)
Jordan- Diabetes -IGT	14.9% 9.0 %	12.5 % 10.3 %	—	—	25 years and over
Saudi Arabia	12.0%- Urban 7.0%-Rural	14.0%-Urban 7.7%-Rural	—	—	15 years and over
Egypt	—	—	4.1%	5.7%	10 years and over
Isfahan-Iran	—	—	—	7.8%	40 years and over
Iraq	—	—	4.8%	—	15 years and over

In a study done in Egypt, using cross-sectional design, the glyceamic control and prevalence of microvascular and neuropathic complications were described among Egyptians with diagnosed diabetes. The results were; 42% had retinopathy, 21% albuminuria, 22% neuropathy, clinical nephropathy prevalence was 7%, blindness 5%, and foot ulcers were only 1% (38).

Other studies were made in Egypt and Jordan to measure the prevalence of obesity and related diabetes. The results from Egypt were; 16% were obese and 4.9% had diabetes. This was in rural areas. In lower urban areas; 37% were obese and 13.5% had diabetes, and in higher urban areas 49% were obese and 20% had diabetes. But in Jordan the overall prevalence of obesity (BMI \geq 30Kg/m²) was 49.7%; 32.7% in male and 59.8% in female (39;40).

Experts of the world health organisation had expressed their concern, over the potential perils of inadequate attention to the prevention of non-communicable diseases, both in developed and especially in developing countries. According to WHO estimates, all non-communicable diseases, in many cases, are preventable. Account for at least 40% of all deaths in developing countries, and 75% in industrialised country (41). Since diabetes is the second cause of death from non-communicable diseases, the importance of preventing it becomes so important. Preventive care in diabetes can reduce complications, like diabetes eye disease (retinopathy), kidney disease, nerve disorder (neuropathy), and cardiovascular diseases. Increasing the proportion of persons with diabetes, who receive each preventive-care practice, could minimise diabetes-related complications, and reduce the morbidity, mortality and costs associated with diabetes (42).

The importance of diabetes education and its role in preventing diabetes and diabetes complications will be discussed in the following.

Health education

Knowledge

There are two types of knowledge; knowing that and knowing how. These are two separate types of knowledge.

Knowing that means, having knowledge organised in proposition and prescriptions, knowing what is the case.

Knowing how; is having practical knowledge, to know how to do things and how to perform certain tasks. So it is possible to know that without knowing how, and to know how without knowing that (43).

According to Tones, Tilford and Robinson, there are three models in health education;

1- Preventative model; their goal is to persuade individuals to take responsible decisions. Means, to adapt behaviour, which will prevent disease in the primary level, to prevent the onset of disease and reduce incidence. Then at the secondary level, to prevent the development of existing disease, minimise its severity, reverse its progress and reduce prevalence. And finally in the tertiary level; means to prevent deterioration relapse and complications promote rehabilitation and help adjust to terminal conditions. In this study I will focus more on the secondary and tertiary level (44).

2- Radical-political model; the goal here is to get to the roots of the problem, try to achieve social and environmental change by triggering political action (44).

3- Self-empowerment model; by helping people to discover and use their innate ability to gain mastery over their disease, to encourage learning and behaviour changing in the patient. There are five steps to apply empowerment, start with identifying the problem, explore the feelings of the patient, set the goals, make a plan and evaluate the results.

Shifting from the acute-care/compliance-focused paradigm to an empowerment/collaborative approach requires a new vision of diabetes education, and a new definition and enactment of the roles of educators and patients. Our practice is

always an expression of our vision. Therefore, if our vision is transformed, our practice will most likely change to reflect our vision. Eliminating the concepts of adherence and compliance makes it possible for our patients to discover and actualise their personal responsibility for their diabetes self-management. Also, it helps us to practice diabetes education as win-win collaboration among equals' (45).

So, we have to create an environment, where the patient feels safe and accepted, by establishing a relationship with patients, when the educator recognises the role of the patient as a manager of his or her daily diabetes care and try to meet the patient agenda. Then we provide knowledge and skills that one needs to become a decision-maker of his own care (46).

Diabetes education

Diabetes education in general

Diabetes education is the most fully developed of all the field of patient education practice, and the oldest. It started in 1930s. Studies showed that education and self-care programs, leads to reduced costs associated with diabetes (47).

Our goals in Diabetes health education are;

- Late complications of diabetes should be prevented
- Diabetes should not cause symptoms in daily life.
- Management should not make life too complicated.
- Diabetes type 2, should be discovered as early as possible, before late complications appear (6;48).

The effect of diabetes education; it improves the patient self-management, which in turn improves glycemic control and health status. But still we do not know what type of education produce what particular benefit, for which type of patients. Few studies had been done on how education produced behaviour changes (49).

According to one of the Swedish studies, adjusting to sex and age, low educated patients had a 40% excess of all-cause mortality compared with high-educated patients. So diabetes people with a low attained level of education, have an increased vulnerability to diseases, and a higher total mortality (50).

The low education is associated with increased risk for metabolic syndrome in middle-aged women. They are not only at a high risk for having cardiovascular diseases and type 2 diabetes, but they are also at high risk for the metabolic clustering of risk factors (51).

The diabetes educational programs are underused. Physicians can improve program attendance and outcomes for people with diabetes, by implementing interventions designed to address the identified barrier (52).

The education of people with diabetes should preferably be an active process, run by the people with diabetes themselves. The aim here is to empower persons with diabetes, to make their own decisions, to make themselves independent of the health care system, to use it for advice rather than care and instructions. Patients should learn to fit diabetes care into their life rather than fit their life into diabetes treatment regime. The patient then should learn a number of skills, acquire much knowledge and learn to feel in control of their own diabetes. So knowledge should be practical rather than theoretical (7).

How to do it?

When addressing diabetes, we should try to practice redesign. Try to change interactions with patients from the typical, rushed fifteen minute problem oriented visit, to something that is more planned and more organised. To go into serious approach of self-management; means more than providing one pamphlet or one class, but it means ongoing attention to patients efforts in areas such as diet, exercise and self-monitoring.

Many doctors with their growing caseloads do not have time to give to people with diabetes the attention they need. Too often they tell the patient to lose weight or get more exercise, without ensuring that real lifestyle are taking place.

The diabetes patient needs more than pre-printed menus and one time lesson in finger pricks. They need long-term individualised educational and nutritional counselling, they need also to learn about the various glucose meters and medications, and then get comfortable using them.

Some patients need ongoing attention and an understanding ear, when they fall off the wagon (53).

A team of physicians and diabetes resource nurses should work collaboratively in a group setting with the patient, to develop a care plan with specific goals, to reduce the patients' risk for having a problem related to diabetes (54).

The diabetes educator, as extended specialist, may work with the primary care physician in their offices. There, they educate and help patient in managing his condition. Like helping him into the track, adjust or initiate insulin, by teaching the injection technique and sites for injections where there is enough subcutaneous tissue, in thighs, abdomen, arms and buttocks to vary the point each time, or to recommend new medication that the physician would prescribe (55;54).

In planning a diabetes educational program, we should assess the patients needs which can be sensed of personal powerlessness, fear related to complications, recognition of knowledge deficit, and inability to link behaviour to outcome, and a clear vision of what kind of educational setting would interest the patient (56).

In spite of the aetiology of hyperglycaemia' induced damage of kidneys, eyes, nerves and arteries, the intervention studies showed that the occurrence and progression of these complications could be prevented by optimal control of blood sugar, hypertension and

dyslipidemia. In addition to life style changes in weight control, increase physical exercise, smoking cessation, which contributes in preventing diabetes and coronary heart diseases. So morbidity and mortality caused by diabetes mellitus can be decreased, by secondary prevention through regular screening, early detection, appropriate treatment of chronic complication and improved diabetes education, which is needed among health professionals and diabetes patients (57;1;54).

About 50-80% of the complications can be prevented (7).

What do people with diabetes need to know?

In diabetes education we should focus on some points, that could be of great importance. For example;

Diet; there is an urgent need to raise the level of awareness regarding food and nutrition issue. It should expand to cover all segments of the population including rich and poor, rural and urban area (10).

In the Arabic countries, it is vital to promote the concept of balanced diet through the use of mass media, and other means of education (10).

Until 1982, the diet recommendations for diabetes patient were mainly restricted carbohydrates. But the new recommendations allow greater carbohydrate intake, while restricting fat intake, and continued on restricting sucrose and other simple sugars, and these are not necessarily completely avoided. Also to focus on the total energy intake, emphasise on fibre intake, fruits and vegetables, beans, peas, lentils should be included, and the use of less salt (55).

The importance of individualise dietary counselling, to overcome the main contributors to barriers to dietary adherence in diabetes patients, which are identified as lack of time,

lack of symptoms, lack of education (including follow-up), poor self-esteem, lack of empowerment and misinformation from family, peers or others with diabetes (58).

Exercise and weight loss; it is known that diabetes occurs more commonly among overweight people (10).

In the United States the obesity rate is increasing, and the diabetes incidence is increasing too. Now it is related to inactivity, and the kind of fast food. Which implies the need of a major education program in the schools in order to reduce this risk (59).

Obesity is increasing through out the world. The average intake of dietary energy and protein in most middle-east countries, are higher than the recommended dietary allowances. While the problem of under nutrition is well known there, health problems related to over weight are increasing as part of these countries become more affluent and urbanised. Obesity is more commonly associated with life wealthier and developed countries. But also is found in areas with nutrition transition, when cereal based diet is replaced by diet high in calories, animal fat, and less fibre combined with sedentary life style. Diabetes is more prevalent in women than men (60).

Physical exercise improves the glycemic control, insulin sensitivity and cardiovascular risk factor. It benefits individuals with diabetes type 2 in a great way. But researchers need to focus on type, dose and magnitude of effects of physical activity, (and its subcategory exercise) on glycemic control, within the context of program acceptability and feasibility (61).

It takes 15-20 years before the increase in body weight is followed by the onset of diabetes. And another 5-15 years before diabetes causes more serious complications, such as renal failure, blindness and amputation. This means that middle-east countries will face much higher costs of health care in 10-20 years, unless nutrition interventions to prevent diet-related non-communicable diseases begun immediately (60).

For elderly patients with diabetes, promoting regular exercise and weight loss, in addition to treatment of depression, preserves and improves the functional status of their life. Also it increased the survival rate (15).

Patient education and co-ordinated approach of physicians, nurses and other health care providers, in a multidisciplinary treatment of the obese patients, is also important to reduce burden of cardiovascular diseases of the population (13).

Patient education on foot care; diligent assessment by the practitioner is necessary to ensure adequate foot health. To instruct on daily inspection for ulcers and signs of infection, and to instruct daily cleaning (62).

In foot care; the patient himself plays a crucial role in the prevention of diabetes foot disease. So, education on foot care is important. Evaluation of the knowledge of foot care is needed to identify areas that require stress in educational program (63). Therefore, in order to prevent peripheral neuropathy, strict glycemic control and daily foot care is needed (29).

Another area to focus on in diabetes education is smoking. It interferes with beta-cell function. So a strategy to stop smoking should be planned (64). The number of cigarettes smoked daily and number of pack-year exposure, seem to be associated with development of impaired fasting glucose and type 2 diabetes (65).

Results of educational interventions resulted in positive changes in the process of care. For example; the percentage of untreated patients is decreasing. Also the patients' knowledge improved in various aspects such as diet and exercise. The patients' behaviour improved in adherence to diet, and in compliance with medications (66;47).

In a review of intervention programs, a lot of researches have been done concerning diabetes knowledge and compliance, one of them in Egypt, which is an example of a developing country. In this research, Nahid and Yusria found that 90% of diabetes

patients had poor knowledge about diabetes. 83.7% had poor knowledge about complications of diabetes. And 96.3% had poor awareness of how to control the disease (67).

While in another research about patients' habit in seeking care, also done in Egypt, showed that 78% regularly attend medical centres. 64% followed diabetes instructions, 89% compliant with prescribed therapy, 8% do blood self-examination and 26% checked their urine for sugar. Which tell us, that health care providers should be trained in the area of information, education and communication (68).

Strategies of diabetes education

The first step in education is to assess what the patient wants, and to establish a relationship between the patient and the health service providers. The role of the health care professionals is an advisor, facilitator of learning and provider of necessary services. But their main role is to help people with diabetes not to become “patients” (7).

We should assess what diabetes patients think about their disease. A study was done among urban African American with diabetes, showed that patients with diabetes had variation in degree to which they believe that diabetes affect their life, and how aggressive they wish treatment to be. Which conclude wide variation in the attitude towards diabetes and treatment. So providers should explore these issues and help patients resolve their ambivalence, if patients' preferences are to be respected (69).

Giving education is not enough. Researches found that there is a gap between what the patients are taught (their knowledge), and what they are actually doing. So the strategy to reduce the gap is by increasing the patient motivation and ability to comply with the health regimen (70).

But modern diabetes self-management programs, reflects movement away from a goal of regimen compliance, to a goal of patients' empowerment. Which emphasises on self-

efficacy, and the impact of diabetes on the totality of persons' life. Goals includes enhancing the ability of the patients to identify, and set a realistic goals to apply a systematic problem-solving process, to manage the stress caused by living with diabetes, and to identify and obtain appropriate social support (47).

Understanding the interrelationship between physicians clinical environment, knowledge of the patients and theories of the disease, these elements are inter moved in the physician-patient specific narratives that influence their interactions in primary care settings (71).

Communicating through stories, which provides an indirect way of confronting the conflict between the concept of the disease and wellness, helping in the transition of a new concept of living well with the disease, and facilitate application of knowledge and behaviour changes (72).

Diabetes self-management

Diabetes self-management is defined as a set of skilled behaviours engaged in managing ones own illness. Good self-management of diabetes is essential for reducing long-term health consequences and for preventing disability (73).

Primary aim of type 2 diabetes management is to prevent complications by lowering the blood glucose level, and to decrease cardiovascular risk profile. An important component is the active role of the patient in controlling diet, smoking habits and physical exercise. Self-care behaviour that often needs to change and adhere to lifelong medical therapy. The cornerstone of health care is to support active patient participation, by guarantee the continuity of care to integrate education in health care and to encourage patient attendance (74).

Good management of diabetes is a necessary step towards its control. And blood glucose testing forms an integral part of it. A study was done in India, to assess the importance of

education and occupation in relation to knowledge about good control of diabetes. The results showed a total lack of knowledge regarding self-care of diabetes in all educational and occupational categories (including patients who were qualified doctors). This calls for an urgent need to create greater public awareness (75).

Compliance and non-compliance

A lot of health care providers label some patients as non-compliant. This label is often incorrect. We blame the patient for treatment failure sometimes. We must separate out those who are making the efforts to change their life style from those whose efforts have failed, due to insulin resistance. For example, the patient may be adherent to the treatment plan, diet and exercise, but the treatment should be considered, with the help of the nurse or dietician. Our message here, empower your self, by becoming an active participant in your own diabetes management (76).

When we educate diabetes patients about their illness and motivate them to pursue intensive treatment physician usually inform them of the risk of serious complications. But the patients' perceptions of the risk of major complications and the benefit of intensive treatment is found to be overestimated. This study was done in the United States (77).

In one study patients perceive diabetes as full of complications, emotions, symptoms and behaviour changes. They respond to hyperglycaemia' care with fear, frustration and uncertainty. The barriers to stay on prescribed diet were habit, cultural ritual, ideal body image and limited budget (78).

In looking for barriers to compliance with guidelines for diabetes retinopathy screening, the very poor low rate of screening has implications for quality of life of patients with diabetes long-term costs of caring for them, and social costs due to lost of productivity (79).

In self-monitoring of blood glucose (SMBG) adherence, there is a considerable gap between actual and recommended SMBG. These barriers could be low educational level and financial barriers for paying for the strip (80).

Alcohol consumption may also be associated with poorer compliance (81)

Ignoring diabetes may seem as irresponsible as smoking cigarettes or driving drunk. But in many ways it is more understandable. For one thing; the disease moves so slowly that people with diabetes often feel perfectly fine. About one third of those with diabetes type 2, do not even know they have it (53).

Denial can be a powerful obstacle to treatment. Because of the fact that diabetes has genetic roots, many people at risk have already watched a relative go blind or lose a leg, not knowing that treatments has improved dramatically over the past decade. So they assume wrongly that complications are inevitable. And they would say; “what is the point of giving up food I love when I am going to go blind anyway?” (53).

Denial of the disease increases with time during the first five years of evolution of the disease. It is associated with poor metabolism control, but not associated with knowledge of diabetes, belief in conventional medicine, social support or perceived stress (82).

Factors that are associated with non-compliance could be divided into;

Factors related to experience, and subjective understanding of the illness.

Factors related to doctor-patient relationship.

Factors related to treatment.

Factors related to the environment of the patient (83).

Chapter three

Palestine

Tips from the history

Palestine is situated on the eastern cost of the Mediterranean Sea. Bordering Lebanon in the north, Jordan in the east, Egypt and Red Sea in the south.

The total area of Palestine is 26,323km². The Palestinian area, the West Bank and Gaza Strip are little over 6,000km²: 5,690km² for the West Bank and 365km² for the Gaza Strip. In spite of their limited area, those two small strips have the most exceptional climate and topographic structure. The West Bank and Gaza Strip are divided into several smaller districts.

The Palestine problem became an international issue towards the end of the first-world war with the disintegration of the Turkish Ottoman Empire. Palestine was among the several former Ottoman Arab territories that were placed under the administration of Great Britain. All but one of these Mandated territories became fully independent state, as anticipated. The exception was Palestine. The Mandate had as a primary objective the implementation of the “Balfour Declaration” issued by the British Government in 1917, expressing support for the establishment in Palestine of a national home for the Jewish people.

From 1922 to 1947, large scale of Jewish immigration from abroad took place, the number swelling in the 1930s with the Nazi persecution of the Jewish population. Palestinians demand independence and resistance to Jewish immigration led to a rebellion in 1937, followed by continuing terrorism and violence till 1947 when the British Government turned the problem to the United Nation.

The UN proposed the partitioning of Palestine into two independent nations, one Palestinian Arab and the other Jewish with Jerusalem international. In 1948 Israel envisaged in the partition plan and proclaimed its independence as Israel. In the 1948 war Israel expanded to occupy 77% of the territory of Palestine, and a larger part of Jerusalem. Over half of the indigenous Palestinian population were fled or were expelled.

In the 1967 war, Israel occupied the remaining territory of Palestine, until then under Jordanian and Egyptian control, and the remaining part of Jerusalem. The second exodus of Palestinians estimated at half a million were also brought up. The security-council resolution 242 called for Israel to withdraw from the territories it had occupied in the 1967 war.

In 1991, a peace conference on the Middle East was convened in Madrid with the aim of achieving a just, lasting and comprehensive peace settlement through direct negotiation between the two nations. This led to a mutual recognition between the government of Israel and the Palestine Liberation Organisation and the representative of the Palestinian people. This agreement brought several positive developments such as; the partial withdraw of Israeli forces, the elections of the Palestinian Council and the presidency of the Palestinian Authority, the partial release of the prisoners and the establishment of a functioning administration in the areas under the Palestinian self-rule.

In September 2000, the second Intifada started a long series of violence and killing of civilians took place. Both Palestinians and Israelis were killed. The Israel forces used all types of heavy weapons against civilians. Till this date April 2002 more than 1500 Palestinians were killed. The Israeli forces surrounded all the occupied territories and closed all the roads. In March 2002 the Israeli tanks and helicopters entered the Palestinians towns and cities which led to situation described as a massacre. (84)

Demographic characteristics

The Palestinian population characteristics are shown in the following table.

Table 3- Population characteristics in Palestine (85)

The indicators	West Bank	Gaza Strip	Both West Bank and Gaza Strip
The population size including East Jerusalem (2000)	2,011,930	1,138,126	3,150,056
Male	50.6%	50.4%	50.5%
Female	49.4%	49.6%	49.5%
The population growth rate (per year) 1997	3.5%	4.7%	3.79%
Fertility rate in 1997	----	----	6.1
Literacy rate-1995	84.1%	84.9%	84.3%
Male	91.7%	91.1%	91.5%
Female	76.3%	78.6%	77%
Registered refugee-1997	26.5%	65.1%	37.1%
Maternal mortality rate per 100,000 live births 1995	----	----	70-80
Infant-mortality rate per 1000 births 1997	-----	-----	24.2
Life expectancy at birth 1999- Male	70.96 years	72.01 years	----
Female	74.79 years	74.95 years	

Age distribution of the population has important implications on the health status of the population, due to the different health needs, the different patterns of health care utilisation and the different health status among the various age groups.

The distribution of age and sex showed that 46.9% of the total population is under 15 years. This pattern is more pronounced in the Gaza Strip, where 50.2% are under 15 years, while it is 45% for the West Bank. The age group under five years old still constitutes the largest proportion; 18.5% of the population. The ages of 60 years and over constitutes 4.7% of population. Up to the age 40-44 years there is gender predominance towards males, in age group 45-49 years there is no gender predominance. Then after, gender is more predominant towards female's (86).

The Palestinian world population is estimated at more 7 million. Only 3 million of them live in Palestinian areas. 42% of all the Palestinians are living in the occupied territories and Israel. The rest of the Palestinians are distributed in Jordan, Lebanon, Syria and the rest of the Arab world.

The Palestinian population growth is considered as one of the highest rates in the world. The average Palestinian family is about 7 persons. About 70% of the Palestinians lived in small villages with the population of no more 5,000 inhabitants. 15% lived in refugee camps and about 15% lived in towns. There are more than 30 municipalities, but only 14 of those can be called cities, counting more than 20,000 inhabitants. (87). In 1997 the urban population is estimated at 44%, the rural at 30% and about 16% of the population reside in refugee camps (85).

Health system in Palestine

The Palestinian health care system is a mixture of public, non-governmental, United Nation Relief and Work Agency (UNRWA) and private (profit and non-profit) service delivery, with a developing governmental health insurance system. Remarkable improvement have been made in the last five years since the Palestinian National Authority assumed responsibility for the health sector, with enhanced linkage between the Ministry of Health and related ministries such as the Ministry of Education, Social Affairs, Finance, Planning and International Co-operation, Supplies, Industry,

Agriculture and Environment. This has improved the public health functions of the system (85).

The three most prominent providers of health services in Palestine are the Ministry of Health (MOH), the United Nation Relief and Work Agency (UNRWA), and Non-Governmental Organisations (Egos). The MOH is responsible for a significant portion of primary health care (PHC); secondary care and some tertiary care services.

The number of primary health care facilities in the West Bank and Gaza Strip in 2000, are shown in the following table

Table 4- Distribution of PHC centres in Palestine by providers, 2000

Provider	Gaza Strip	West Bank	Palestine
MOH	43	316	359
UNRWA	17	34	51
NGOs	40	145	185
Total	100	495	395

Data from 1998 showed that there were 54 government and non-government hospitals in Palestine territories. 43 Hospitals were in the West Bank and 11 hospitals in Gaza Strip. In the West Bank there were 9 government hospitals and 34 non-government hospitals. In Gaza Strip there were 5 government hospitals and 6 non-government hospitals.

Governmental health services

In 1994, the Palestinian Ministry of Health took over responsibility for health services in Gaza strip and West Bank. Great improvements and developments in terms of quantity and quality of health services including policies, regulations, infrastructure and human resources development have been achieved. Since then health care in Palestine is first and foremost the responsibility of the MOH. Thus, it is essentially a public and a governmental responsibility. Being so, it is regulated by mandates issued by the Palestinian National Authority. The Ministry of Health runs now 359 full time primary

health clinics, and 14 hospitals. Because the government employs few specialist doctors, it is unable to offer many of the services needed by the population.

The Ministry of health is looking forward to build a “Universal Social Health Insurance” through which sustainable and equitable health services can be achieved. Enrolment in Government Health Insurance grew from 20% of the total West Bank and Gaza Strip population in 1993 under Israeli occupation to over 50% in 1998.

Primary health care services are provided for free for those enrolled in the government health insurance scheme. Patients without insurance using government hospitals must pay a fixed fee with additional fees for investigations, surgery, medications, and other treatment. Maternal and child health (MCH) services are free to all people regardless of insurance status.

Tertiary level services and certain advanced diagnostic techniques are purchased by the Ministry of Health on behalf of insured patients, from non-governmental hospitals in Palestine, Israeli hospitals and from Egyptian and Jordanian hospitals.

UNRWA health services

Since 1948, the UNRWA has been responsible for the provision of health services, for Palestinian refugees in the Gaza strip, West Bank and other Arab countries in the Middle East. The UNRWA operates only 51 centres in Palestine. The number of refugees in Palestine is 1,428,891. Therefore the ratio number of refugee per centre is about 28,000 refugees per centre in Palestine. The UNRWA has been offering health services, free of charge to all refugees. She also plays a distinguished role in the program of vaccination in co-operation with MOH, in addition to curative services, antenatal and postnatal care, and other specialised services. At the same time, all refugees in Gaza Strip and West Bank have the accessibility to governmental health services. Palestinians holding a refugee card are eligible for free basic health services from the UNRWA. They are allowed to attend any of the UNRWA medical centres in the area of their residency, as well as being

hospitalised in any of the local hospitals and the UNRWA will pay the expenses after the patient brings a referral from the UNRWA headquarter. Some patients might also be referred to foreign hospitals for further care on expense of the UNRWA.

NGO

The non-profit part of the NGO sector, was first initiated in the late 1970s, and became well established during mid 1980s. The development of the NGO sector came as a direct consequence of the many restrictions, which were imposed by the Israeli Military Authorities on the charitable sector, during the 1970s. As a result of the inability of NGO sector to obtain licenses from the Israeli Military Authorities, most of the NGO clinics had to operate in defiance of the occupation registration laws.

Four main NGOs operated in the occupied Territories. They comprised the Health Services Council (HSC), the Union of Health Work Committees (HWC), the Health Care Committees (HCC), and the Union of Palestinian Medical Relief Committees (UPMRC).

In 2000, the NGOs health sector operated 185 mini PHC centres in Palestine with a larger number of centres in the West Bank than in the Gaza Strip. Some of them have medical laboratory equipment to perform simple investigations, as well as mini pharmacies, that provide the attendants with low priced medicine (86).

Private-for-profit sector services

The private-for-profit sector is expanding significantly particularly in the urban areas of the West Bank. At the end of 1994 there were 164 private clinics operating in the rural West Bank. And in addition to individual private practitioners, medical companies are expanding the provision of advanced diagnostic and secondary level services. The two largest companies- Arab Care Medical Services and Medlab Palestine- are each investing sums in the region of \$14 million in the provision of advanced diagnostic testing and secondary level services.

The private health sector development has been encouraged by the Palestinian Ministry of Health as a way to reduce dependence on the Israeli and foreign hospitals. Diagnostic testing such as CT and MRI scanning will initially be provided at a lower cost than in Israeli hospitals.

The number of people enrolled in private insurance schemes is also expanding rapidly. The two main companies providing health insurance are the Arab Insurance Company and Al Mashriq. With Al Mashriq, the premium for an average parent family with four children is \$22 per month. Coverage includes primary health care and secondary care up to a maximum cost of \$4930 per person in a one-year period.

The percentage distribution of Palestinians by health insurance in 1996 showed that in Ramallah area 55.1% of the people were insured. While in Jerusalem around 91.1% were insured. In Bethlehem and Jericho only 39.1% were insured.

Obstacles to establishing an effective health system

A-The Israeli closure, checkpoints and the separation between health organisations in West Bank and Gaza Strip, which blocks effective co-ordination between them. The Palestinian Authority is seriously constrained by the geographic limits on its authority. It is also prevented from supervising environmental issues in the West Bank.

B-The isolation of Jerusalem causes significant problems for Jerusalem hospitals and patients. There are four hospitals in Jerusalem where patients can be treated for oncology, burns, cardiovascular surgeries, and complex neonatal and paediatric surgical problems. Many patients have developed serious complications and some have lost their lives due to the restrictions on entrance to Jerusalem. In addition to the staff working in these hospitals, many health professionals have been consistently denied access to their places of work.

C-Other barriers like, mall-distribution of health services and infrastructure between various areas of West Bank and Gaza Strip, where most of the services do exist in the urban areas.

D-Another problem is the growth of the private sector and the need for a strategic vision for development among and between the health provider's (88).

Health promotion and education

Until 1994 there had been no substantial efforts made to develop national strategy and programs concerning health promotion and education in Palestine. However, health professionals have started serious efforts to build capacity in health promotion, education and prevention a long time ago, especially through the NGO's. In 1995, the MOH established a new division as an integral part of the existing PHC directorate, for health promotion and education in Gaza Strip. Which was followed in 1997 by a similar division in the West Bank. The efforts started earlier in 1995 with the epidemic of cholera in Gaza. A wide committee including MOH, UNRWA, 15 NGO's and other concerned ministries was established. They worked on developing a unified concept for health promotion and education in Palestine, after identifying the national needs for the health promotion and education. They also worked on establishing a national ownership and leadership for health promotion and education, and to invest in it by allocating adequate funding for relevant programs.

Health promotion and education related activities include planning for establishing such programs as school health, and centre for health education materials, in addition to dissemination of health information through special health education programs, using Palestinian television for mother and child health, youth and prevention of disease. Special activities of the department of health promotion and education covered most of the target groups of the Palestinian society. The department had approached all available communication routes, including the Palestinian national TV, newspapers, and face-to-face programs, among others. Developing skills for the different target groups had been

an important task for the department as well. The department had been closely co-operating with a wide range of public and other bodies, including PHC and MCH, schools, mosques, universities and the mass media (85).

The organisations offering health education services were the Catholic Relief Services, Government PHC posts, UNRWA clinics, Community Charitable Societies, NGO clinics, and Caritas clinics.

In the following table the access of communities and populations to health education services by community size is shown.

Table 5- Communities and population with access to health education services by community size.

Community size	Community with access to health education %	Population with access to health education %
< 500	8%	13%
500-999	32%	33%
1000-2999	36%	39%
3000-4999	46%	46%
5000-9999	64%	62%
>9999	69%	66%
Total	32%	53%

The national priorities of health promotion and education started with Reproductive health and STI's, then the chronic diseases followed by accidents and the rest of different diseases. The national programs in chronic diseases for public awareness and education are operational with involvement of health providers and community participation.

The national strategy was to make necessary medications available and affordable to all patients with chronic diseases including diabetes, cancer, asthma and hypertension. Establish a support system for promotion and use of epidemiological surveillance systems that can monitor those preventable chronic diseases, disabilities and identify the major risk factors related to morbidity and mortality variations. Expand the health promotion to include home visits program. To develop a special programs to change behaviour and life style of citizens especially for those who are suffering from chronic

diseases. To develop and assure access to high quality, cost effective screening and early diagnostic services designed to identify persons with risk factors, and to diagnose disease at earlier stages. Develop systematised rehabilitation services for individuals with chronic conditions especially for coronary heart diseases and stroke patients in order to reduce preventable complications. To inform people on regular basis about life style, behaviour and health, and to initiate and support public media campaigns, targeting on high risk groups in order to promote early detection of chronic diseases such as diabetes, cancer and hypertension (85).

Diabetes Mellitus

Diabetes Mellitus, especially type 2 diabetes is a serious disease and a cause for growing public health concern in both developed and developing countries. In many countries it is now a leading cause of death, disability and high health care cost.

The World Health report 1997 paid attention to diabetes: WHO warns that diabetes is one of the most daunting challenges posed today by virtue of its frequency, its costs and suffering imposed by its complications. Also, diabetes is no longer a disease of the affluent, it is now the third world problem and the developing countries will bear the brunt of the diabetes epidemic in the 21st century.

Despite the deficient statistical data and the prevailing of political situations, which are affecting negatively all aspects of, life, there were real efforts to organise and implement a unified strategy for the prevention and control of diabetes in Palestine.

Great efforts have been done in the domain of the surveillance of diabetes and improvement of the services in co-operation with Quality Improvement Project (QIP). Like training of 155 physicians and nurses, improvement of patient files establishment of a database for diabetes patients and the establishment of an appointment system for patients. All of this is to improve the network diabetes clinics and to decentralise this service.

The reported incidence rate (new registered cases) of diabetes in Palestine is 123 per 100,000. Incidence rate of diabetes in Gaza Strip is less than in West Bank; this may be due to under reporting and under developed diabetes network clinics.

Distribution of incidence rate of diabetes by age groups showed that the most onset age group of diabetes is 15-19 years, and increases gradually at the age group between 30-49 years old. The highest incidence rate is reported in the age group over 50 years old.

The distribution of diabetes type 2 by sex of patients is about 35.4% in males and 64.6% in females. The highest incidence of type 2 diabetes among females might be explained by the higher prevalence of obesity, multi-parity and more attendance of female to health centres than males.

The incidence of diabetes patients with obesity is 44.5% in males and 55.6% in females. About 17% of type 2 diabetes patients who are followed by the governmental health clinics are suffering from major complications: retinopathy 19.2%, nephropathy 8.1%, neuropathy 40.4%, cardiovascular 26.3% and peripheral vascular diseases 6%.

In the whole population of Palestine, diabetes is considered the ninth leading cause of death with 3.8% of total deaths. The highest mortality rate of diabetes is in age group 60 years and above, with rate 185.7 per 100.000. Distribution by sex shows that females have slightly more mortality rate than males.

According to the data from the government clinics, the number of visits of diabetes patients to the government PHC diabetes clinics is shown in the following table

Table 6- Number of visits for diabetes patients to government PHC diabetes clinics.

Type of diabetes patient	Number of visits	Proportion from the total visits
Patients managing with insulin, type 1	7,860	6%
Patients with type 2 diabetes	39,056	29.6%
Patients managing with diet	9,508	7.2%
Patients managing with oral hypoglycemic	62,969	47.8%
Patients receiving combined therapy (oral and injection)	12,438	9.4%

There are several types of health sectors that provide special services to diabetes patients in Palestine. These types of clinics are shown in the following table.

Table 7- Clinics offering special services to diabetes patients by clinic type

Clinic type	Number of clinics offering services	Percentage
Government	3	2%
UNRWA	14	70%
NGO	26	20%
Charitable	3	4%
Private	0	0%
Total	46	9%

The objectives of the Ministry of Health strategy for diabetes care emphasise on the early detection of diabetes in high-risk groups, the prevention by early diagnosis and proper management of diabetes patients to prevent or delay complications. In addition to improving diabetes education of health professionals by continuous education and training, and improving the education of diabetes patients by specialised personnel in the field of diabetes education and nutrition (85).

Chapter four

Research objective

Main objective

To study the inter linkages between diabetes health education and the diabetes patients self-management practices, in order to detect the main barriers between the educational intervention and the final outcome of controlling diabetes. How can such measures be improved in order to establish a better interaction between providers of knowledge, and the recipients, to enhance successful self-management?

Sub-objectives

1. To investigate the approaches in giving advice, information, and education, by health care providers to people with diabetes.

- What type of diabetes education programs is found?
- Is diabetes education/information performed or not?
- What are the barriers to giving education/information?
- What do the health care providers know, and teach about diabetes?

2. To investigate how advice, information and education are received and implemented in practice in diabetes patients

- What do diabetes patients know about their disease and its complications?
- How do they perceive their disease?
- What kind of information have been given to them, according to the patients?
- Where do they get information from?
- Are they satisfied with the kind of care and information given to them?

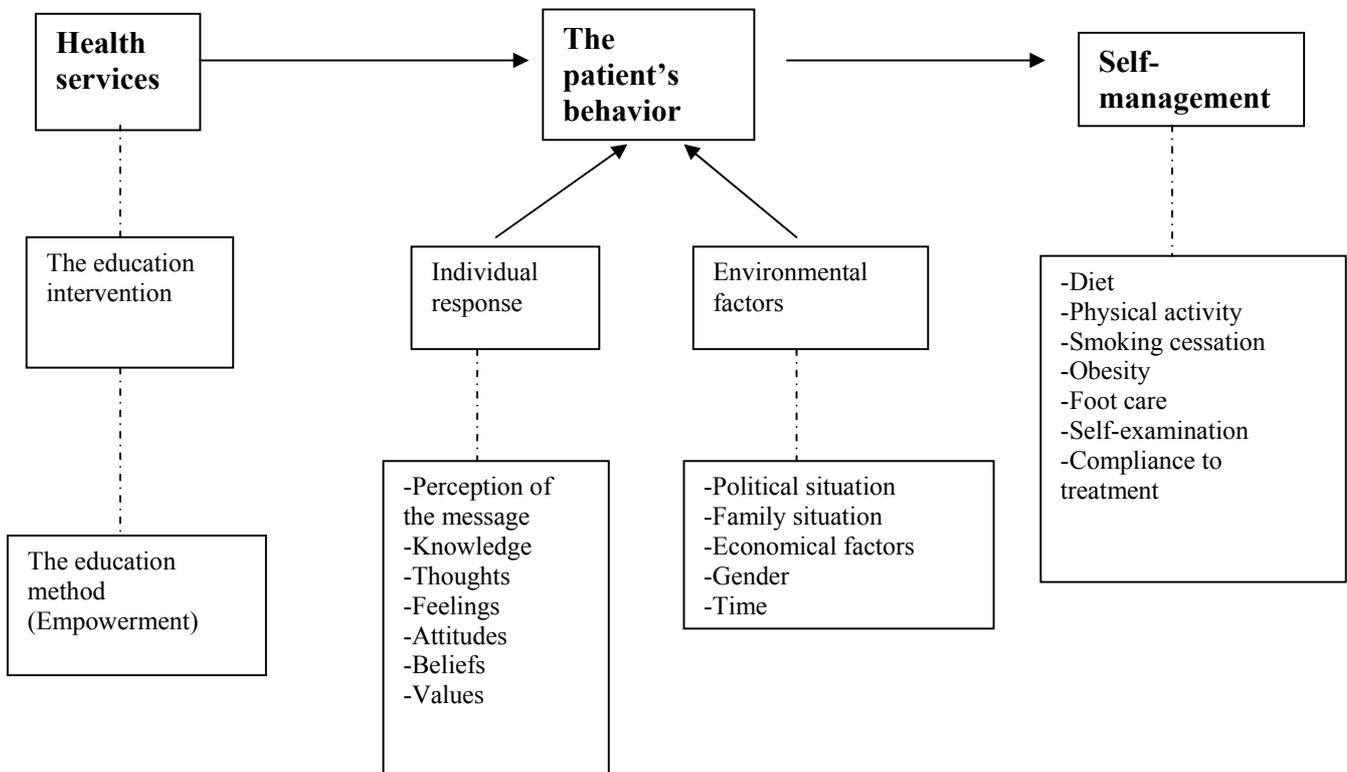
- How do patients use this knowledge in dealing with their disease, and what means of self-management are they using?
- What are the barriers for proper self-management?

So in this study the focus will be on the kind of interaction between the both sides, to figure out how knowledge and perceptions will influence the behaviour or practices.

3. To discuss in the Palestinian context how diabetes education can empower people with diabetes, to reach our main goal, which is living a better life with diabetes.

The research model

By trying to explain what the researcher will be looking for exactly in this study. This model had been drawn. The definition of some of the concepts mentioned in this model will be followed afterwards.



Definitions of some concepts

- Empowerment; is a process by which persons with diabetes are enabled to play an active role in taking shared responsibility for their care. It is the educational process designed to help patients develop knowledge, skills, attitudes and degree of self-awareness necessary to effectively assume responsibility for their health-related decisions (89).

- Knowledge; often comes from experience, and by information given by educators. There are two types of knowledge; knowing the theoretical principles, which means having knowledge organised in proposition and prescriptions. And the second type is having the practical knowledge or skills, to know how to do things, how to perform certain task (90).

- Thoughts and feelings; both are shaped by the individual's knowledge, belief, attitude and values (91).

- Belief; is derived from parents, grand parents and others we respect. We accept this without trying to prove if they were wrong or right (91).

- Attitude; reflects our likes and dislikes. It comes from our own experience or from those close to us. It might attracts us to things or make us wary about them (91).

- Values; are the beliefs and standards that are considered most important to us (91).

- Diabetes self-management is defined as; a set of skilled behaviours engaged in managing ones own illness. Good self-management of diabetes is essential for reducing long-term health consequences and for preventing disability (92). The primary aim of type 2 diabetes-management is to prevent complications by lowering the blood glucose level, and to decrease cardiovascular risk profile. An important component is the active role of the patient in controlling diet, smoking habits and physical exercise. It is a self-

care behaviour that often needs to change and adhere to lifelong medical therapy. The cornerstone of health care is to support active patient participation, by guarantying the continuity of care to integrate education in health care and to encourage patient attendance (93).

- Compliance; is the degree that the individual follows the advice and instructions provided by health care system to him. It is believed that the improvement in compliance outweighs any negative effects that can have on quality of life (89).

Chapter five

Methodology

Design

In this chapter the practical side of designing this research study. The aim of a good study design and management is to get the best results possible with the limited resources available. A realistic design enables us to control and manage the study effectively, and to produce the results when they are needed (94).

In this study both qualitative and quantitative methods have been used. The cross-sectional descriptive design has been the approach, in which the situation has been assessed at one specific time. The unit of study is the individuals. The research is divided into two main parts.

The first part will focus on the health care services. Three different types of clinics are approached. The first one was a government health care clinic, the second one was an UNRWA health care clinic, and finally the third one was NGO health care clinic. Three different types of clinics were used in order to enable the researcher to investigate separately in the three clinics.

The second part will focus on people with diabetes. Those were picked from the three different clinics. After assessing the different ways that people with diabetes are managing their disease. The researcher looked at the kind of education they have reported to be received. This enabled the researcher to compare the different methods diabetes education is performed in the three clinics, which gives a better idea about diabetes care in different health sectors in Palestine that are found in the clinics.

Study population and sampling procedure

This study has been conducted in 2001 in the city of Ramallah, a strongly urbanised area. Which has a well-defined dominantly Muslim community located in the heart of Ramallah. It is a major city in the West Bank, located 16 km north of Jerusalem.

The original sample consists of both males and females in the age groups between 35-65 years old. People with diabetes have been identified from three different health clinics, and 152 people with diabetes will be systematically selected as a target group. When counting the total number of the diabetes patients who attend each of the clinics every day. This enables the researcher to choose the system of sampling. Like for example, every fifth patient arriving to the clinic and the sixth if the fifth refused to participate. So from the total population a study population will be picked out, by random sampling. Taking into consideration that the number of variables in my study will determine the sample size.

Non-attendance has been considered, for some people may not want to participate. One must be satisfied with 70% attendance, but non-attendance should be minimised. This can be achieved by simple and attractive design and trying to motivate the participants. When the patient who was elected refused to participate, because he/she was in hurry or not feeling well. The researcher gave him his phone number or arranged a meeting with him in another day at the clinic when it was more convenient to do the interview.

All people with diabetes registered in the three different clinics, (Government, NGOs and UNRWA clinics) were included and the necessary information about the participants has been extracted from the available patient's files at the clinics.

Because the election of the patients was randomly, meeting them happened at the nurses' station. There the researcher approached every (n) patient who entered the clinic after he registered his name. They were taken aside, and it was explained to them that they were elected randomly to participate in the study. They were given the papers to read and it

was explained to them that the researcher would be there in case they had any questions. After collecting the number of patients that were planned to be interviewed, that day, for example 3 patients. The researcher went towards the first one, even if he have not seen the doctor yet. But he was assured that he would not loose his turn to see the doctor. When the patient agreed to participate in the study. The interview would start. This had been done in the place where it was prepared for the interview.

Concerning the duration of the interview; the patient was always given the change to tell what ever he wants adding to the answers of the questionnaires. Especially when answering the open-ended questions. And once the patient started talking, everything he said was recorded by writing some points down on a notebook. At the end of the session, the researcher asked again if he had anything else to add. This was done in order to look in depth in the patient's way of life, and the way he looks and deals with his diabetes. So the data will be richer, and meet the qualitative criteria.

In the second part of the study, 9 different health workers have been interviewed, (a semi-structured interview). They were picked from the three different clinics. They were going to be nurses, doctors or nutritionists if they were found there. It is important to choose different health personal in order to find out how diabetes health education is implemented by each of them. After the interview with the people in charge of the clinics, it was known that in each clinic there were one doctor, and one nurse in charge together with a practical nurse. After finishing the interview with the patients, in that particular clinic, the researcher visited the clinic without an appointment and interviewed whoever was on duty. If they did not agree to participate, the researcher would come in another day. The time for that interview would be arranged with the staff, when they think it is more suitable, like at the end of the shift or when the last patient had left.

Date collection

In qualitative research, interviewing is a way of collecting data. It is a kind of social interaction. Face-to-face interviewing has some advantages. For it can be used with illiterates, it permits clarification of questions, and the researcher will get a higher response rate than with written questionnaires. At the same time it has some disadvantages for the presence of the interviewer can influence responses and also the report of events may be less complete than information gained through observations.

It is important to understand cultural differences before interviewing people. This was not a problem in this case for the researcher was a part of the same society. But at the same time a lot of considerations should be made when it comes to the point of asking private or serious questions to the patients. So it would be better if the researcher would be introduced to them by someone they know or trust, like their regular nurse in the clinic. After spending sometime with the patients, the researcher should become a person whom they perceive to be fully human, by their criteria (95).

In this research the researcher had the advantage that he was interviewing Palestinian people, who spoke Arabic. This was his mother language. This is important, especially when using a qualitative method, for two different reasons. First because language is the basic tool in interviewing. The interview represents a form of interpersonal communications. When the interviewer and the respondent negotiate an understanding of the subject in question. Each performing preliminary interpretations of the responses and offering commentary as well as additional questions. Second, the interaction as a whole, in the form of tapes and transcripts will be the objects of further textual analysis and interpretation (96).

Because both health workers and people with diabetes were interviewed, several methods for data collection were used. In order to get the best data from the health workers, in-depth interviews with the three key persons working in the three health sectors (Government, NGO and UNRWA) were used. Open-ended questionnaires were also

used, when interviewing the six nurses and the three doctors working in the three different clinics visited.

In collecting data from people with diabetes in the three clinics 152 persons with diabetes were interviewed. Around 50 persons from each clinic were interviewed, in order to provide an equal number of patients from each of the clinics. More than one collecting data method was used. First the pre-made questionnaires which consists of structured questions and open-ended questions. Second two focus group discussions in two of the clinics visited were conducted.

During data collection from the three key persons in-depth interview was used when asking for explanatory answers. The three key persons were asked to explain briefly about the health system in their sector, the diabetes educational programs that they applied, and the main changes that occurred in the last period. They were asked about their perception of diabetes patients and their compliance with treatment and self-management.

The goal of these interviews was asking for interpretation of action and the meaning. Also trying to identify values about what people strive for and what do they see as constrains to achieve their values. Also to look for discrepancies between what they say and what they do. There is a good way to let people feel free to tell you everything, namely to take the role of a learner. Informants will feel like they are teachers. But there is a disadvantage that the interviewer may inadvertently influence the respondents.

The structured interview was not chosen as an interview technique for the meeting with the three key persons, for several reasons. First of all, there would be a basic assumption that the researcher and the respondent share the same theoretical frame. Second these questions then will be limited in relation to the aim of the study. And finally, the missing data will affect the results.

During the interviews with the nine health workers in the clinics, open-ended questions have been used to allow informants to respond in a wider range, and answer without limitations. The health workers were allowed to tell their point of view about diabetes education and if they practice it or not. As well as, what they thought are the main barriers to perform diabetes education both from their side and the patient's side.

In collecting data from people with diabetes pre-made questionnaires that contained both structured and open-ended questions have been used. Together with a pre-coded questionnaire, which was filled in according to the informant's answers. Notes from special remarks were written down on a separate notebook. It was possible to use one type of questionnaires, in order to detect the kind of attitude of the patient. This is used in relation to cognitive, evaluative and behavioural components, which will contain the informant's beliefs, feelings and actions. Entering data into computer has been done every day, or every other day following the interviews, so information will not be lost. Since it is easier to remember the answers of the respondents when you have a shorter period of time between the interview and entering of the data.

The closed questions in this study were placed for the topics, which are well known. They are simple and less time consuming and more economical. A category for every possible response was created in addition to the "others" category, so the multi-item response may add to the flexibility. Although sometimes the reply may be forced into inappropriate categories, and this is considered as a disadvantage.

In the questionnaires used for people with diabetes there were also another 15 open-ended questions. Using this type of questions will help to pick out what these informants think about diabetes, how they feel to live with diabetes, and if they practice proper self-management or not. The advantage of using open-ended questions is that there will be no pre-coded response, and the respondent writes down the answer in his own words. For the researcher thought, they are difficult to analyse, but they can be followed by closed questions, and reasons for answering may be clarified.

Focus group discussion is another way of collecting data, which was used to collect data from people with diabetes. It has been conducted in the clinic itself, after arranging this with the staff working there, for the place, date and time. In case there was a scheduled educational session, then this could be replaced by the focus group discussion, with the staffs' permission. A note was hanged on the clinic's wall, announcing that there will be a discussion on a certain day concerning diabetes and its management. This was held after the consultation hours, those who liked to stay and participate were welcomed.

Focus group discussion is a way of gathering data of people's opinion in a short time. It is used as a supplementation of the data. Two groups of people were gathered, one in the UNRWA clinic and the other one in the government clinic. They both provided a place with enough room to have the meeting. In each group there were between five to eight participants, both males and females. The aim here was to encourage a collective response and to identify differences in opinion, as well as areas of consensus within a group. The members of the group were not reasonably homogenous, as they may be inhibited and feel uncomfortable with each other, if they are aware of major differences of status or class. But the group discussion is a valuable way of quickly establishing some basic common ground, information and questions for future investigation (95). The researcher started the discussion, and from thereon prepared questions were used to lead the discussion only. The information obtained in this way will depend on who is participating and to what extent they can be honest in answering. So by focus group discussions the researcher aimed on a certain topic, and this is different than the target group discussions, where you aim on certain group of people

Questionnaires

Two types of questionnaires have been developed:

1- Interview questionnaires for people with diabetes, divided into the following sections:

- First part: summarises demographic data such as sex, age, marital status, and education.

- Second part: describes the behaviour of people with diabetes, regarding seeking medical care. They will be asked if they are practising self-examination, check up visits to the clinics and others.
- Third part: describes behaviour of people with diabetes, regarding self-management. They will be asked in the areas of diet, exercise, weight, feet care and smoking.
- Fourth part: a test of knowledge. The knowledge of people with diabetes will be tested, in the areas of general knowledge about diabetes, diet, weight control, medications, diabetes complications and how to control blood sugar.
- Fifth part: describes barriers to proper self-management. Is it lack of knowledge, or diabetes education, financial barriers or food preparation?
- Sixth part: open ended questions. To find out what people with diabetes think about the diabetes education, and its importance. Their perception of diabetes, and what do they think and feel about living with diabetes. (A copy of the questionnaires is attached as appendices in Arabic and English)

2- Interview guide for conducting semi-structured interviews with the health staff. They will be asked about what type of health sector their clinic belongs to, the educational programs they have, means of education they are using and barrier for not implementing diabetes education. (A copy of the interview guide is attached as appendices in Arabic and English)

Methods

In this study, both qualitative and quantitative methods were used. The reason for combining both of them will be discussed in the following.

Mixing qualitative and quantitative methods

The term triangulation of methods is used here, it means mixing both qualitative and quantitative styles of research and data. Mixing has a different, complementary strength. The study will be fuller or more comprehensive. The two methods are used in parallel in

this study (97). Also the findings from one type of study can be checked against the findings deriving from the other type. The aim is generally to enhance the validity of findings. In addition, the qualitative evidence may produce a hypothesis, which can be tested quantitatively (98).

The qualitative research may help to provide background information on context and subjects, acts as a source of hypothesis, and aids in scale constructions. This facilitates the quantitative research, and at the same time the quantitative research facilitates qualitative research by helping with the choice of subjects for a qualitative investigation.

The two methods are combined to provide a general picture, for the quantitative research may fill the gaps in a qualitative study, which may arise. The quantitative research is especially efficient in getting to the structural features of social life, while qualitative studies are usually stronger in terms of 'pro-cessual' aspects and these strengths can be brought together to the same study. So the weaknesses and limitations of each individual method will be counter-balanced by the other method (9).

When a relationship between variables in a quantitative research is established, it is still weak to explore the reason for those relationships. Here comes the use of qualitative method to explain the factors underlying the broad relationships that are established. In case one wants to explore both large-scale, structural features of social life, and the small-scale behavioural aspects, mixing the two methods will be necessary.

A disadvantage of mixing the two methods can be found in generalisation. The addition of some quantitative evidence may lead to the fact that it is not possible to generalise the findings derived from qualitative research in a statistical sense.

This study has a descriptive approach. Focusing on the information about the linkage between receiving information about diabetes and proper self-management. The study combined both a qualitative and a quantitative research technique. Making it appropriate

for different stages of a longitudinal study. In the quantitative part, questionnaires have been used. These questionnaires were built up as described before.

There are some advantages for using structured questionnaire; it is economical and less time consuming, and we may include a larger sample and notice concordance between the medical reports and the informant's reply. But at the same time it has the disadvantages that pre-coded response choices may not be sufficient. Also same words, terms, or concepts may not elicit the same response, and there is a possibility of response bias.

The qualitative method includes the two focus group discussions. The qualitative data has been used to construct the questionnaire and to support the quantitative findings. Information that was collected includes: the health services provided in the clinics, what are the diabetes educational programs found there, the main barriers for following the educational sessions, and how do patients perceive and implement diabetes education.

The other part of the qualitative method was interviewing of health workers, nurses, doctors or nutritionists. They were chosen from three different clinics. In the interview the researcher had used an interview guide, consisting of different questions. This, in addition to meeting three key persons, responsible for each of the health sectors, using some prepared questions. The person interviewed has been asked to talk about the general health system, especially in the clinic that belongs to their sector. Also that person has been asked to talk about the diabetes educational programs, if these programs are being implemented or not, and what future plans they have for their clinics.

Time Frame

In designing a time frame, the time needed to establish trust would be considered, to build up a fuller knowledge about the community. Also to allow relationships to develop to the extent those attitudes can emerge and local people allow the researcher a

sufficiently accurate and intimate knowledge of the community, rather than 'public relations' image of the community (95).

Taking into consideration the location of these clinics, and the time needed to reach these clinics, especially in the current situation, having to pass through several checkpoints in order to reach there. The best time to interview the patients would be considered, which is mainly before or after he meets the doctor. Taking into consideration not to interfere with the nurse's work. It was also important to try to ensure that the minimum time possible will be asked from the respondents compatible with obtaining the information required. And it was wise to add extra time, in case things did not go quite smoothly as expected, especially with the political situations in Palestine, and the difficulties in transportation.

The suggested time frame for the study has been the following:

- Week 32 / 2001- Meeting with the local supervisor, draw a plan for the data collection.
- Week 33 / 2001- Meet the three key persons from the different health sectors and interview them, pick 3 clinics which fits the inclusion criteria.
- Week 34 / 2001- Visit the three clinics, with the company of the local supervisor in order to introduce my self and my study, decide on days to visit the clinics to conduct my interviews with the patients.
- Week 35,36,37,38 / 2001- Conduct interviews with the patients in the government clinic
- Week 39 / 2001- Conduct interviews with the health workers in the government clinic.
- Week 40, 41, 42, 43 / 2001- Conduct interviews with patients in the UNRWA clinic
- Week 44 / 2001- Interviewing health workers from the UNRWA clinic.
- Week 45, 46, 47, 48 / 2001- Conduct interviews with patients in the NGO clinic
- Week 49 / 2001- Interviewing health workers from the NGO clinic.

- Week 50 / 2001- Conduct two focus group discussions
- Week 1-22 / 2002- Data analysis and discussion, writing the thesis in Oslo.

Initial data processing will be done daily, after the interview.

Weekly meeting with the local supervisor has been done, to review the work, and get feedback.

Ethical considerations

Concerning the permission to conduct the interviews with both the patients and the health personal, the researcher had arranged for a meeting personally with three different people. The first meeting was with the doctor responsible for the diabetes clinics in the UNRWA. The second meeting was with the doctor responsible for establishing the diabetes program in the Palestinian Ministry of Health. And the third interview was with a man responsible for the Medical relief clinics, which is considered part of the NGO clinics. In these three interviews a good idea of the health system in general and diabetes in specific was obtained. As well as the location of different clinics, the patients' load and the educational programs they had. In addition the main problems that health system faced were discussed. The researcher contacted the clinics through these people. But a letter has been sent from Beirzet University to these three clinics, in which the study was explained and an official permission has been asked for the researcher to visit the clinics and to conduct the interviews. The clinics were visited before interviewing the patients started, in order to get to know the place, to introduce the researcher, to ask the staff about the working hours, and ask what most suitable time was to do the interviews. After that, the place where the researcher could meet with the patient, privately without disturbances was discussed.

Before starting with the data collection, the researcher made sure to show responsibility to the informants. It was explained that there is no financial benefit for them after finishing the study. But explained briefly what the purpose of the study is, and what the results will be used for. Nothing was promised which could not be kept.

Protection of the informants' rights had been taken into account. To insure confidentiality, mentioning the right to stop or withdraw, considering the consequences of the information, and to make sure not to harm the informants.

A short but fair introduction about the research has been given to the informants. He or she will be the person with diabetes, and he or she will be the same person who is going to be interviewed. The information will be written on a paper, in Arabic, and another paper for, declaration of the informed consent, would be signed by them, also in Arabic. In case of difficulties in getting a signature of the participants, and this is understood due to the current sensitive political situation, the signature of the researcher after telling all the information about the study had been considered enough. (A copy of the two forms is attached as appendices in Arabic and English).

Discussion of the reason why the original plans could not be followed

It should be said that these research results are much affected by the timing of the study. It started one and a half-year after the second "Intifada" began. A lot of changes had happened, due to the political situation. The researcher learned about these changes from the interviews with the three key persons responsible for the governmental, NGO and the UNRWA clinics. They mentioned that a lot of educational programs that had been launched for the patients and for the health personal have been stopped. All of this was much more organised before the time the study was conducted. They even had special health educators in the clinics. Also, the initial plans were to interview a nutritionist but this was cancelled because there was no nutritionist working in the three clinics visited.

Now, most of the programs that the key persons mentioned have stopped for as long as the present situation prevailed. Everyone expressed hopes for things to get better, that roads would be reopened so they could return to the previous schedule and programs. So what was experienced was individualised efforts from some health personnel, dealing with the fact that there were still patients coming to the clinics for treatment. They had

the right to get the best treatment and guidance possible. Whatever the situation would be out there, the best care for the patients should be performed. This was not so easy to be done, because there were a lot of obstacles that would prevent even individualised teaching.

Chapter six

RESULTS

Government Health Services

The key person in the Palestinian Ministry of Health was interviewed who is responsible for the diabetes programs in the governmental clinics and hospital. In this interview, the doctor mentioned important information about the health system in relation to treatment of diabetes. He also described the main changes that occurred in the last two years.

He said that the diabetes programs were started in 1989. The first survey on diabetes in Palestine was in 1988. The prevalence rate was found to be 7-10%. The doctors who used to work in these programs were only general practitioners or medical doctors and not specialists. The first diabetologist started to work with them in 1996. He was employed as a consultant in diabetes in the Ministry of Health.

At that time, they started to work on a more holistic approach in diabetes care. They developed a file for the diabetes patients. After that they started to give lectures and distribute brochures in the primary health centres. A dietician used to work with them as well. This dietician worked for a few years, but then stopped when the new Intifada began.

And just before these programs were disturbed, the diabetes team developed a plan, which included both quick solution and long term goals. The immediate goals were to train 4 nurses inside Israel for 6 months. The long-term goals were to train a nurse for a master program in nutrition.

Training courses for doctors, nurses and others were also given for four months. The courses were about diabetes, also for training the health workers and others different approaches in diabetes care. The courses focused on a community approach by increasing

the awareness of people, for both sexes starting from schools, mosques. In addition, other activities were launched, like organising trips and camping for children with diabetes type 1, so they can share their experience together. Also, education was given through the mass media like, radio and TV about diabetes and diabetes care.

Now there are diabetes clinics in all the main cities in the West Bank. They have started to use the computers, and they trained nurses on how to enter the data.

Other achievements in the diabetes care were;

- Establishing patients' friend society.
- Establishing a unit for non-communicable diseases.

This key person mentioned some of the problems that they are facing;

- 1- Poor communications, due to the absence of telephones, or the patient is old and deaf
- 2- After the up rising started, they have seen acute complications, due to the difficulty in transportation
- 3- Self-monitoring is expensive, and the patients cannot pay for the necessary equipment. It is a problem that the elderly may not know how to do self-monitoring, and their children may not always help them. A new initiative has been doctor's visit to bed-ridden patients in their homes about once a week. They are still doing this till now.
- 4- Some patients have needle phobia, so they start using the pens to give insulin, both for children and adults.
- 5- Time is short, and the staff is little. This means that they are suffering from a high patient load. The reason being that the government sector covers the biggest share of diabetes patients in Palestine.

The MOH have only one diabetiologist, and one endocrinologist in the government clinics in Ramallah. The rest of the West Bank cities have the following distribution;

- Hebron; two diabetiologists.
- Bethlehem; one endocrinologist, and one diabetiologist.
- Jericho; two diabetiologists.

- Tulkarem; one diabetiologist.
- Salfet; one diabetiologist
- Kalkelia; one diabetiologist.

In Ramallah Hospital there is an endocrinology clinic for all the West Bank patients. Some of the diabetes programs started, which were to be supported by Denmark. They tried to start a centre for diabetics, for 3 years, after the Palestinian government was to take over. Unfortunately, when the Intifada started, this program was stopped after one year of operation, due to the political situation.

MOH also started training for emergency treatment of diabetes in the clinics. These courses were given both in the West Bank and Gaza, with the co-operation of the Palestinian Red Crescent. Another course about treating the diabetes foot was also started. But all the courses were stopped after the Intifida

All doctors in different clinics may refer patients to the centre in Al-Bireh, where the diabetes specialist will treat them.

The fees that the patients had to pay were 3 NIS, which is around 6 NOK for each of the medications prescribed, including insulin. The treatment is free of charge. However, the patients are covered by the Government Health Insurance, for which they pay about 1200 NIS/year. Now, a lot of people are treated for free during the Intifada, especially people injured by the Israeli attacks.

The doctor emphasised on the importance of following the National Protocol for Diabetes Care. He said that health staff who are not following this protocol, is doing malpractice.

The first clinic that I started interviewing the patients in was in Al-Birieh City. Actually they are considered as one city. This clinic was a government clinic. The people who come to this clinic had most often the Palestinian Authority health insurance. Most of the patients come from Ramallah, Al-Birieh or from one of the villages surrounding

Ramallah. The patients usually get a monthly prescription, and they can get the medications from the clinic, which has a small pharmacy. The clinic staff consists of two diabetes specialists, two nurses, (one is a registered nurse, the other one is a practical nurse), one general practitioner and a pharmacist. From this clinic I selected 50 patients to participate in my study. In addition, I interviewed a diabetes specialist who works there and two nurses as well.

The clinic is found in the second floor of a building. This building is a usual apartment building and is not build to be a clinic. The building is old with no elevator, which makes it difficult for the elderly to get up the stairs. The clinic needs repainting of the walls, a special waiting area for the patients, a nurse's office, where she can meet the patients and talk to them privately. Many of the patients mentioned the need for a new clinic, and so did the working staff as well. They are waiting for the new building, which is under construction now.

Every time the patient comes to the clinic weight is measured; his blood pressure and capillary blood test for sugar is done, as well as changing of dressing of diabetes feet is also done there.

UNRWA Health Services

In my meeting with the key person, who is a doctor that works in the headquarters of UNRWA in Jerusalem. He mentioned the situation of health services that the UNRWA offers in general and especially in Al-Amaari clinic, where I have conducted a part of my study.

The catchment population of Al-Amaari clinic is 30,000 patients. They come from Al-Amaari camp itself, Ramallah, Al-bireh and the villages around Ramallah.

Patients are usually referred from other doctors to this clinic. The place where the patient was first diagnosed by diabetes will be mentioned in the patient's file.

For every patient there is a file, which is used both for treatment of diabetes and hypertension. This is a part of the patient's health care.

In Al-Amaari clinic, the patients follow the appointment system of monthly visits. The work in the clinic runs all the days of the week, but there is no fixed days for diabetes. This implies that all the patients with different diseases come to the clinic simultaneously. When the patient is diagnosed with diabetes, the nurses open a file for him, and that file is called the NCD, (non-communicable diseases) file.

In the clinic there is the NCD nurse, the staff nurse and a doctor. The nurse receives the patient, measures his blood pressure, weight, and gives him consultation. Then he will enter to see the doctor, and then the doctor may order for him the laboratory tests for checking of diabetes and blood lipids.

They established a diabetes file for the technical instructions on diabetes care for all the clinics. This file can be used all the time and is readily printed out. In this file, the first page includes the diagnosis. After that there is a page for each visit, which shows the general appraisal for the complications, and the FBS. These are the measures that are used to determine if the diabetic patient is controlling his disease or not. The criteria which is used to determine if the patient is well, is having two good results of FBS out of three tests.

There is only one diabetes specialist in the West Bank who works with the UNRWA. Usually, it is the medical officer who first meets the patients, and the patients who are not under good control will be referred to the specialist.

The medications given in the UNRWA clinics are free of charge. They use two different methods to treat diabetes. One is the oral medication, and the other is insulin. Few people use the self-monitoring for checking their blood sugar

One of the UNRWA routines in diabetes care is a protocol, which was placed in the clinics. This protocol is about;

- 1- Reporting, a card is given to each patient explaining the reason for the next visit.
- 2- The patient, who is under control, does not see the doctor in every visit, only every three months. But the patient will come to the clinic to get his prescription and medication.
- 3- The utilisation of health care, which indicates the number of visits, ages and sex of the patients.

Research carried out by UNRWA showed that;

In 1999, the diabetes complication rate was 38.7%.

In 2000, the complication rate was 42.3%. This means that the rate is increasing.

For the hypertension and diabetes together, the complication rate was 53%.

Concerning health education

Brochures about diet are used in the clinics. In addition, lectures are given on the national diabetes day.

Every clinic has its own schedule for education. The NCD nurse implemented it. In addition, there is a health educator who works for the UNRWA, and she makes programs for the clinics, which are implemented in the clinics.

Some problems in diabetes care

- 1- Elderly refuse to take insulin
- 2- Diet, and the fact that the patients find it difficult to change what they are used to eat.
- 3- Non-compliance, the patient may not tell the truth about receiving the medicine.
- 4- None of the patients has his own personal file at home, for self-monitoring and follow up.

Future needs

- 1- Training of staff for counselling techniques.

- 2- Supervision on the work, for nurses and doctors in each clinic
- 3- To have a dietician to work in the UNRWA clinics, for they do not have any one right now.

The Amaari clinic, which is found on the main entrance of Al-Amaari refugee camp. This camp is attached to both Ramallah and Al-Bireih cities. The people who usually attend this clinic have the United Nation Health Insurance (UNRWA). They mostly live in the camp itself or in the close by two cities. This clinic is bigger than the government clinic visited. Consisting of different small clinics. These are clinics for mother and child health, diabetes, and hypertension. There is also a laboratory and x-ray department.

Non- governmental health services (Non profit)

I had a meeting with the person responsible of one of the new health centres in Ramallah. This centre belongs to one of the main NGO health institutions, which is the UPMRC. In this meeting, I managed to collect information about type of services that they provide for patients and especially diabetics.

The UPMRC had started a new diabetes clinic in Ramallah, only one month before. This health centre used to be a centre for heart diseases, which had been transferred to the UPMRC, which is using it as a clinic for chronic diseases.

The clinic has one day for diabetes treatment, as a start. They depend on the WHO criteria to diagnose the patients with diabetes. So in the first visit the patient is checked for fasting blood sugar to rule out diabetes.

On the special day for diabetes they give lectures and distribute posters to the patients. The posters are about diabetes feet care and checking of the eyes.

The mobile clinics are very active in the UPMRC. They have a program for chronic diseases. There is a team, who moves from one clinic to another. They have a driver, and are equipped with a simple laboratory testing machine and a laboratory technician. They

do lipid profile, FBS for the patients. They also measure the patients' weight, height. After that the patient may meet the doctors after doing these tests.

In the clinics, they also have some sessions for teaching breast self-examinations, which are done by a female doctor.

Some social cases are referred to the main office of the medical relief. They usually give them a discount, or the patients may pay nothing. But the rest of the patients usually pay for the consultation and a part of the medication. The patients are transferred from all the 25 clinics from the West Bank, Gaza Strip and the mobile clinics. They are sent to the main office and from there, they are transferred to the clinic in Ramallah

The UPMRC trains the nurses on how to deal with patients who have diabetes, UTI, or diarrhoea. The training courses are both for nurses and doctors. They also work on health promotion projects.

The educational programs in the clinics are not running as it is expected, due to the difficult situation now. But the Medical Relief is trying to continue in the same strategy in diabetes education. In this strategy they depend on the participation of the patient. Usually the nurse gives some lectures in addition to focus group discussions.

Some of the mentioned problems were;

1- when the patient have government insurance, the doctor can order for more laboratory tests for the patient. This is better than the private patient is, because he has to pay for all the tests. This means that in cases when the patient does not have insurance, the doctor will not have all the tests he needs in order to make diagnosis. This also affects the frequency of the doctor's visit, since the patient has to pay for each visit. In addition to the problem that the doctor has to think twice before he prescribes the medicine, he is always limited to prescribe a few of them, and that depends on their prices.

2- Diet and preparation of food. Most of the diabetes patients found it too difficult to prepare the proper food for diabetes. This is a problem that many suffer from.

3- Patient's awareness, and the way they perceive the message. For example, if you tell them not to eat salty food, then they might eat only sweets.

4- The relationship between the patient, and the health workers. In the NGO, there is not enough time to establish a relationship based on trust and dialogue.

5- Misuse of the medicine. Some patients use the same drug for 2 years, without visiting the doctor.

6- Not all the drugs are available, even in the government sector. Sometimes, even the essential drugs are not available, such as drugs for the chronic diseases. According to the doctor's opinion the best way is to work on the prevention of the disease. Chronic diseases are all increasing and they are becoming a burden on the society, and therefore prevention is important.

Since the new centre in Ramallah had only one day of diabetes consultation, and there were few patients who attended the clinic on that day, I decided to conduct my study in one of the remote clinics that belongs to the Medical Relief. This is found in one of the villages near Ramallah. This village is Beddo, located to the south of Ramallah on the way to Jerusalem. This is a small clinic, which gives services to most of the people in that village, and also to two other villages near by. In this clinic, they mostly treat diabetes and cardiac patients. There are also special days for maternal health. In this clinic, they have programs for the schools health, in which nurses from this clinic go and visit the schools in the village. They do simple check-ups for the students and give lectures as well.

There is a small laboratory in this clinic, as well as they provide medications. The medications are sold with prices 25% less than the market. The staff in this clinic

includes a doctor, who is a specialist in chronic diseases, a general practitioner, a gynaecologist and four nurses. In addition, they have an ophthalmologist who visits the clinic according to arranged appointments. From this clinic, I picked also another 51 patients whom I have interviewed.

Description of the sample

The participants in my study were both males and females, but it seems that the number of females were more. From the 152 patients, I had 108 females, and the rest were a male. So around 71% of my sample were females. This is because it was found that in Palestine the prevalence of diabetes between women were more than men, especially in the age group between (60-65). And in my sample, this age group occupied 44.7% from the 152 patients that I have interviewed. The age of the whole sample ranges between (35-65).

This also can be explained with the fact that you get diabetes when you are older in age. And the number of females having more diabetes can be explained by looking at some risk factor, which contribute to diabetes. Like for example; obesity. Which was found, that the prevalence of obesity among women in Palestine is about twice than men.

Table 8- Patients participating in the study distribution by age groups according to sex

Sex	Age groups			Total
	Group (1) 35-44yrs	Group (2) 45-54yrs	Group(3) 55-65yrs	
Male	12	8	24	44
Female	19	29	60	108
Total	31	37	84	152

The minimum age was 35 yr.

The maximum age was 65 yr.

Mean 54 yr., medium 57yrs

55% of the participants were between 55- 65 years old

45% of them were between 35-55 years old

Table 9- Marital status of the participants in the study

Marital status	Frequency
Married	106
Single	9
Widow	36
Divorced	1
Total	152

The above table shows another characteristics of the participants. The numbers in the table shown are expected, for it is normal in Palestine to be married when you are above 35. And very few men or women stay single when they reach this age. Because being married in the Palestinian context means that you have achieved the other half of your religion, and it is much more accepted socially to be married and not to be single or divorced. So that is a reason why there is a tendency for early marriages, so the girl or the boy won't grow old and they are not still married.

Only 3.3% of the participants lived alone. The rest of them lived in two different types of families. First one is the nuclear family, which means, the husband or wife and the unmarried children. They consist of 67% of the participants. And the other type of families is the extended family, which means living with the husband or wife, the married and unmarried children. Sometimes the sister or brother of the husband will live with the family, if they are not married. These consist of 30.6% of the participants. The percentage of participants those lives with (5-16) other people at the same house is counted to be 55% of the whole sample. This percentage is also expected, for it is more accepted socially, when the husband brings his mother and father to live with him. Or he will bring his wife to his parent's home and live with them. Even if he were living alone and one of his parents died, he would usually bring his father or mother to live with him. Or, if he had a sister or brother who are left alone. It is in the Palestinian culture not to abandon the elderly, and they show their respect to the parents, if they live with them, all together.

The level of education of the participants was also considered, from the 152 participant only 30 had finished the high-school or more than school. The rest 80% are either illiterate or did not finish the high-school.

Table 10- Level of education among patients according to sex

		Sex		
Level of education		Male	Female	Total
	Didn't finish high-school	28 (63.3%)	94 (87%)	122
Finished high-school	16 (36.3%)	14 (13%)	30	
	Total	44	108	

As can be seen from the above table, the percentage of females who did not finish the high school is more than males. This is due to the fact that females get married early, and they have to quit school sometimes before finishing it. Due to the fact that most of the participants were old, the educational level among women is low since it was not very common for girls to get education at school 30 or 40 years ago. The priority was given to men to be educated because they had to find a job and take care of the family.

Table 11- Residence of the participants and clinic visited

		The place where the participants live				
Type of clinic visited		Inside the city Ramallah	In a village outside Ramallah	In a city outside Ramallah	In a camp	Total
	NGO	5	40	3	3	51
	Govern.	5	33	10	2	50
	UNRWA	14	11	9	17	51
Total		24	84	22	22	152

The NGO clinic which is situated in Beddo village outside Ramallah have 78% of its patients living in the same area, which implies that the clinic is the most accessible. Most of the patients live within walking distance to the clinic. While in the government clinic, which is found in a city outside Ramallah, (Al-Birieh), only 20% of the patients are living

in this city. The majority around 66%, lives in one of the villages surrounding Ramallah. These patients need transportation to reach to the clinics. In addition, there are frequent closures between every city and village in the West Bank, which means that patients are not allowed to pass through the checkpoints. Sometimes they have to walk through the fields and behind the checkpoints, in order to reach to the clinic. Al-Amaari clinic situated in the camp, around 33% are living in the same camp, and the rest of the patients are distributed between the two cities or in the villages. These patients face the same problem in reaching the clinic.

Looking through the ways that the patients use to reach to the clinics, it was found that 60% of them use the public transportations, while 23% arrive to the clinics walking, and only 16% use their private cars.

Diabetes education and information at the clinics

Non-governmental clinic

When asking the nurses at the NGO clinic, about the approaches they use to give education, they answered that they gave lectures for groups of patients, in addition to face-to-face consultation. Both doctor and nurses on duty are involved in giving the education. The doctor at the NGO clinic explained that the most important thing is to use a language, which is understood by the patient. He said that in personal consultations, he gives the patients time to talk about anything they want. The patients usually start by trying to prove that the reason why they have diabetes is stress, and because of stress they cannot control it. When he starts explaining the real reasons for having diabetes, he feels that they understand and accept what he says. He said that around 90% of the patients accept the fact that diabetes has other reasons than stress. However, some patients refuse to follow the doctor's advice, and then they come back to the clinic with complications. Since most of the patients in this clinic are living in the same village, the news is spread quickly, if someone had amputation of a leg, or lost his vision. So the doctor had noticed that the patient's attitude change after they hear such news. He said that he spends half an hour with every patient, and he makes sure that health education is performed. He

answered most of the patient's questions. He said that the nurse usually talk to the patient while she is weighing him, or measuring his blood pressure.

In my interview with the nurses and doctors at the clinic, they were asked if they have any educational programs in their clinic. The health workers in the NGO clinic, mentioned that they have programs. Which include lectures about diabetes and diet, in addition, to other subjects like first aid in the schools. They usually give the lectures according to the seasons and the disease that are spread in each season. They have ready materials, which include brochures and posters that are given to the patients (I got copies of more than twenty different brochures that were in the clinic). Some activities are done with co-operation with other women clubs. They invite some psychologists. And they do meeting with the women, discussing some important issues like, urine incontinence, and active delivery. A lot of activities are taking place at schools every week, where brochures are distributed and the nurses call the parents, for meetings at the clinic.

According to the health workers point of view, patients would like to attend programs and many ask for the lectures to be given. The kind of education they need depends on their age. The elderly wants to know more about diet, and the youth at schools wants to know about adolescence and other subjects. At the same time, as indicated by the health workers, a lot of patients are careless about education because they are in a state of depression. In addition, they are not aware of the importance of the diabetes education and its importance in preventing complications. They said that the patients nowadays are always in a hurry to leave earlier. This is accepted because of the difficulties in reaching the clinic and back home. Also, most of the women want to go back home to finish their housework. One of the nurses said, "We cannot force them to stay. But sometimes, when there was a good number of patients we start a discussion about one of the subjects related to diabetes. Then it always turn to be a good education session". However, another doctor said that there were no policy related to diabetes education. There is nothing like this in the real practice, and he doesn't know who to blame for this.

When asking about the policy of referring the patients to another clinic, when it was felt that this patient needed extra attention and education about diabetes care and control, there was no policy on this. Usually the patients were referred to another specialist in internal medicine if they have developed other cardiac diseases or hypertension, but not for educational purposes. At the NGO clinic one of the nurses answered that they sometimes refer the patients to a dietician. But most of the patients do not go to him, they prefer to be treated only by their own doctor.

Government clinic

In the government clinic the nurse said that it is both the nurse and the doctor who talk to the patients. There used to be a dietician last year, but she was sent somewhere else. The nurse said that they use one-to-one consultation or group lecturing. She talks to the patients while she is checking their blood glucose and weighing them. The doctor in the clinic continued that this approach was used. He said that he usually meet with the patient alone. He does not have any prepared material. For example, if he has an obese patient, he would talk to him and give him time to advise him on how to reduce weight and the importance of doing this. He said that diabetes needs teamwork, starting from a qualified doctor, and health educator. He admitted that they lack the educational programs.

At the government clinic, the health workers were asked also about the educational programs. The nurse answered that they sometimes had programs. She said that when there was a large number of patients they give them a lecture. They always talk to the patients who do not control their disease properly. And they can tell that from the blood sugar test. They give more attention to the newly diagnosed patients. They have also produced their own materials, which are given to the patients. But the doctor at the clinic disagreed with that, and he said that they do not have any planned or fixed educational programs, and what is done is not considered health education or promotion. He hoped for things to get better, and that proper education will be performed. At the same time he was aware of the fact that this might be a difficult times.

When health workers were asked if they think that diabetes patients follow the advice given to them, most of them answered yes. Some said that it is yes most of the time, but it depends on the patient himself. One of the doctors said; “Around 90% of the patients follow the advice given to them, and they understand the information that they hear. While around 8% of them cannot be reached, in a way that was understood. Then I have to explain thoroughly and very slowly in order that they will get the message. Especially when it comes to diet, and that is a problem. For the majority are not ready to give up what they like to eat and what they are used to eat. They would usually tell us the same answer, “ Young people are dying every day around us, and we are all dying one day, why should I give up what I like”.

UNRWA clinic

At the UNRWA clinic, the nurses answered that it is both the nurses and the doctor who advice the patients. The nurses usually talk to the patient, when checking his blood pressure and weigh. Also, when they got the laboratory results of the patient’s tests, they would give consultation to the patient. They said that they give some lectures to patients group from time to time.

In the UNRWA clinic, the health personal said that they have educational programs, but not on regular basis. They do not always have the printed materials or the brochures to give to the patients. It depends if the head quarter send them these materials, (I got several copies of these brochures and one of them was for diabetes). I noticed also that there were several posters in the clinic, showing feet care for the diabetes patients. They were hanging on the wall.

When asking the health personal about having a special policy concerning feed back from the patient about the educational programs available, every one answered negatively. However, they would sometimes get comments from the patients after a lecture was given. In addition, if a nurse gave extra time to explain details about diabetes care, the comments were mostly positive. The patients seemed to be happy with the educational

programs that have been before, and with the few efforts that were done presently. This was especially true when the patients follow the advice given to them, and they noticed that this led to better control over their disease. One of the nurses said that every patient is different from the other, and their level of understanding varies. It depends on their level of education and IQ. But there were always repeated requests from the patients to repeat the educational sessions and to give more information.

Actually none of the three clinics that I visited had a fixed program and schedule that they followed regularly. This does not mean that the patients are not getting information and advice, but it seems that it depends on the health personnel themselves individually, whether he is interested or capable of giving time to the patient. Furthermore, if he is aware of the best methods for helping the diabetes patient, and to learn about his disease. What is more important is how to empower the patient, in order to help him to take over and control his life-long disease.

Opportunities and challenges in diabetes education

Nurses, expresses that there were no specialised clinic for diabetes, and that they work with the general practice clinics. They wanted a private office, where they could work alone. They said that they know how to use the posters, to give lectures, and to establish special programs. But this is not possible in the current place. One nurse said that she wanted to work only with diabetes patients. She was sure that most of the patients would follow the program because they are always worried about their health, especially the younger ones. Another nurse said that there is a big chance in teaching during the home visits. Then the patients could be followed in the clinic, where they can check their blood sugar level, their eyes and feet. She said they could encourage the patients to attend the lectures if they offer them, for example, free laboratory tests or home visits for follow up.

The doctors said that there was a very big need for diabetes education. There were a lot of opportunities to do it, not only to patients, but also to all the health workers, who deals with the diabetes patients, and the family members of the diabetes patient. There was a need to establish a clear policy with specific objectives to raise the awareness about this

disease, starting from school students, both males and females, to prepare lectures and workshops and to spread information through radio and television. One doctor mentioned the need to have a dietician who can answer the entire patient's questions, because he did not have enough time. He had to see a lot of patients in one day. He said that he used to check the patient's eyes every visit, but he could not do this any more, due to lack of time. He said that the health staff was desperate, and their main concern now is how to return to their homes safely.

The knowledge of the health workers

From the first meeting with the three persons, who are in charge of the three clinics I understood that there have always been opportunities for educating the health staff. A lot of courses had been given. And a lot of nurses used to go, even to the Israeli centres, to attend courses about diabetes. But since the situations changed one and half year ago, all of this stopped. Still there are local lectures and meetings held in the clinics for both the nurses and doctors. So they can get up-to-date, and increase their knowledge about diabetes.

I asked the health workers about sources they got information about diabetes from. Some of them said that they learn by themselves, they read books and brochures, and watch special educational programs on television. Some said that they have been sent many times during the last year to attend lectures and courses about diabetes and diet to different places and universities.

I asked the health workers, about the advice they give to the diabetes patient on diet, physical activity and smoking. The usual answers were;

Concerning diet, stay away from fat, sweets, carbohydrates, and follow fixed meal timing. Take many meals in a day with little amount of food. Focus on the quality of the food. One nurse said that she told the patients to eat everything, but in small amounts. She did not like to frighten the patient and forbid every thing. However, she advised them to leave out the fat, especially those who have heart diseases. The patient should eat three

full meals and three snacks in a day, should not go to bed without eating anything, especially if receiving long acting insulin. Another doctor said that patients should not leave out the carbohydrates completely. To eat fruits is better than drinking juices, because juices contain a lot of sugar. He prescribed the amount of protein to be taken according to body weight. He also advised the patients to eat more fish and chicken, than red meat.

In physical activity, most of the health workers advised the patients to walk more, but according to the patient's capability. They said that this is what the patients are able to do mostly. It is not popular to run in the streets, and especially for women. Also, few people are able to join the sporting clubs, because they cost a lot of money and they are not available everywhere.

Concerning smoking, all the health workers said that they advise the patients to stop smoking, if they smoke, or to reduce it. One of the nurses said that, she used to frighten patients who refused to stop smoking with the complications, especially those who come with feet complications. But there were no special programs in the clinics, helping people to quit smoking.

Patient's perceptions of education and advice given by health providers

Approaches to information

The patients were asked about approaches that are used by the health personal in giving advice or information to them. The answers concerning the different approaches that are used in the three clinics are shown in the following table.

Table12- Different approaches to giving advice or education to the patients by health personal based upon the patient’s perceptions.

		Approaches to giving advice or education to the patients								
Type of clinic		One-way consultation		Two-way consultation		Using the two approaches together		No education is given		Total
		NGO	29	57%	12	2%	7	14%	3	6%
	GOV.	38	76%	7	14%	2	4%	3	6%	50
	UNRWA	27	53%	15	29%	2	4%	7	14%	51
	Total	94	62%	34	22%	11	7%	13	8.5%	

As can be seen from this table, the first answer of one-way consultation, which means that the patient only receives information given to him from a nurse during an individualised consultation, or during a lecture given to a group of patients. In both, the patient is told what to do, and no place for dialogue. The percentage of patient who answered that the one-way consultation approach is used in their clinic, are more in the government clinic, than in the other two clinics. While the two-way consultation, which means the patient meets the nurse or the dietician and exchange of information will be done. The patient will be asking certain questions and the nurse or the dietician will give the patient enough time to understand and accept the information given to him. This approach is practised more in the UNRWA clinic. And the use of both approaches together is used more in the NGO clinic. These results are showed upon the patient’s answers.

Patient perceptions of diabetes education

From what have been shown before in table [12], we got an idea about how diabetes education is performed, and in what means.

One of the research issues was whether diabetes education was performed or not. The patients were asked if they followed any educational programs at their clinics. 78% from all the participants answered “no”. What I was concerned about is that 65% of those who

do not follow the program said that there was not any program to follow. Around 12% said that they did not like to attend these programs, while 2% of them said that they did not have time for that.

The table below indicates the place where diabetes educational sessions took place in the three clinics.

Table 13- Patient's answers of where giving information took place at their clinics

The place where educational sessions take place	Type of clinic			Total
	NGO	GOV.	UNRWA	
Doctor's office	23	19	14	56
Nurse's office	7	7	9	23
Two together	12	16	5	33
None of those	9	8	23	40
Total	51	50	51	152

What we understand from the table is that, in the NGO clinic more educational sessions are taking place in the doctor's office. Which indicates that it is the doctor who usually gives advice and information. The same pattern is seen in the governmental clinic. In both clinics it seems that both the doctor and the nurse teach a good portion of the patients. While in the UNRWA clinic the answers indicate that most patients are not taught in neither doctor's office nor the nurse's office or both, is taking the biggest share of the answers. However, the doctor is advising some of the patients.

At the NGO clinic, the nurse usually sits behind a counter. She registers the patients coming, and accompanies them when it is their turn to see the doctor. The counter is situated in the corridor between the doctor's office and the laboratory. The nurse on duty does not usually stay with the patient when he sees the doctor, unless the doctor asks for help. After the patient has finished the doctor's consultation, he or she will return to the nurse to get his medications. The nurse is responsible for the small pharmacy and for distributing medication. The time the patient spends with the nurse is thus limited to the

registration period, measuring the blood pressure, weighing and distribution of medication. But the major share of the patient's time is then spent with the doctor, who will be seeing him alone in the office.

At the UNRWA clinic, the nurse had her special office. She meets the patients there, get their files, weigh and measure their blood pressure. She would send them for laboratory tests if needed. During that time period, the nurse may talk to the patient until the next patient arrives and asks for his file. Usually the patients then leave to the waiting area. After they have seen the doctor, they will take their medications from the pharmacy and leave the clinic. So again the time a nurse spent with the patient is limited, to what she does to prepare him for the doctor's consultation. Thus, it depends on the doctor and the number of patients that day, to determine the time that the doctor spent with the patient.

In the government clinic, there is smaller space. The nurse's office and the waiting area are in the same room. When the patient arrives, the nurse would measure his blood pressure and weigh him, and also do the blood test using sticks. In this period of time, the nurse usually talks to the patients. The problem is that, it is the same room where the rest of the patients are sitting and waiting, so no privacy is provided. There is a new building under construction, however, that would provide a new clinic with more organised space. The nurses hope to move there, so they can perform better care and programs.

When asking the patients if they follow any educational programs or not, I got the results which are shown in the following table.

Table 14- The patient's answers if they usually follow educational programs on regular basis at their clinic

		The answers of the patients about following educational programs			
Type of clinic		They follow educational programs	They sometimes follow educational programs	They do not follow educational programs	Total
	NGO	3	25	23	51
	GOV.	9	16	25	50
	UNRWA	5	16	30	51
Total		17	57	78	152

From this table, we can see that the majority of the patients answered that they do not follow any educational programs. While around one third of them answered that they sometimes follow educational programs. Few followed educational programs on a regular basis. It is seen that in the UNRWA clinic, the ones who do not follow the programs are more. That could be explained by the absence of the educational programs.

Barriers to giving education / information

Looking for the opportunities in diabetes education. I have asked the patients about their opinion about the potential for giving diabetes education, and at the same time about the challenges in diabetes education.

The answers of the patients are shown in the following tables

Table 15- The potential for diabetes education, according to the patient's answers.

		Frequency	Percentage
The patient's answer	No answer to the question	93	61
	If the patient wants to follow the advice	28	18
	It is possible to perform diabetes education	31	20
Total	Total	152	100

Most of the patients did not give an answer to the question of potentials. But 20% of them said that it is possible to perform a proper educational program in their clinic, even with the available facilities. And the rest of the patients said that it depend a lot on the patient himself, if he will follow the educational sessions and apply the advice given to him.

Table 16- Patient’s answers to the challenges in diabetes education

Challenges in diabetes education according to the patients’ answers		Frequency	Percentage
	No answer	56	37%
Problems related to the clinic itself	22	14%	
Problem on the patient’s side	45	30%	
The current situation	23	15%	
Problems related to education approaches	6	4%	
Total	152	100%	

Here, also a lot of the patients did not answer. While a lot of them explained during the interview with them that the challenges are related to the patient himself. They were telling that most of the patients are always in a hurry, and want to leave earlier, so they will not attend the education sessions. Some would also refer to the educational level of the patient, which determined the degree to which he would understand the information given to him, and if he wants to follow the advice or not. They also said that it is sometimes due to the economical status that the patient cannot follow the advice.

The patients explained the challenges related to the current situations by the closures on the roads and the risks on the ways. In addition to the difficulties related to the transport that they use to reach to the clinic.

The answers that relate the challenges in diabetes education to the clinic it self showed that the place is not appropriate for giving education. There is not enough staff, and the number of patients is big. Another answer was that, the medications are not always

available, so the patients only come to the clinic when they know that the medications are found in the pharmacy.

The patients also related the challenges to the staff themselves, and that they should find the better ways to teach, in order to reach the patient and recognise his needs.

Patient’s perception and implementation of advice

The patients were asked first about the diabetes education, and if they think that it is important. The results were that 94% of all the participants agreed that diabetes education is important. In the following table I have showed a summary of the reasons, why the patients thinks that diabetes education is important

Table 17- The importance of diabetes education according to the patient’s opinion

		Frequency	Percentage
The reason why diabetes education is important, (according to the patients)	To know how to control the disease and live longer	75	49%
	To increase the knowledge about the disease and its complications	50	33%
	Teach the family and others about diabetes	18	12%

In the above table, the answers of the patients were summarised from open-ended questions in which the patient mentioned that the knowledge about controlling diabetes is to know what to eat and drink every day, and they also related this to living a longer life with diabetes. While in their answers about knowledge about the disease itself, they mentioned that the importance of diabetes education is to know what is the cause of the disease. By education they will get the correct information, not what was said by different people. In addition to knowing about the diabetes complications and how to prevent them. Around 18% of the patients express their concern about their children and family members. They said that diabetes is a hereditary disease, so they should learn about it in order to teach their children, in case they get diabetes in the future.

I was trying to investigate the patient's response to diabetes education. I noticed that the health staff, in the advice they give to the patients, they first and foremost focus on medications. I asked the patient if they take their medications on time. And then I compared the results in the three different clinics.

Table 18- The frequency of patient who took their medications on time

		Adherence to medications			
		All the time	Most of the time	Sometimes	Total
Type of clinic	NGO	40 [78%]	6 [12%]	5 [10%]	51
	GOV	39 [81%]	8 [17%]	1 [2%]	48
	UNRWA	41 [85%]	4 [8%]	3 [6%]	48
Total		120 [82%]	18 [12%]	9 [6%]	147

From the above table, we can see that more than 80% of the patients took their medications on time, all the time. And only 6% of them took their medications on time, sometimes. This could be explained that in both the NGO and the government clinics the patients pay partially for their medications, so they usually get it from their clinics. But in case they are not available, most of the patient would buy them then from a common pharmacy. In the UNRWA clinic, the medications are given for free. But at the same

time, the shortage in medications in the UNRWA clinic is bigger than the other clinics. The majority of the patients there are refugee living in the camp that cannot always afford to buy the medication from outside the clinic. But we could also refer to the good adherence to receiving the medication, to the type of education given in that clinic, and how much they focus on the importance of taking the medications on time.

The knowledge of patients in diabetes and its complication

I tried to investigate what the diabetes patients know about the complications of the disease. And then relate this to their level of education. In the following table the results are shown.

Table19- The knowledge of different diabetes complications compared to the level of education, the people who answered with yes

Knowledge of diabetes complications	Patients' level of education	
	Did not finish high-school	Finished high-school
Eyes complications	76 [62%]	17 [56%]
Feet complications	74 [60%]	22 [73%]
Cardio-vascular complications	41 [33%]	16 [53%]
Nerve complications	8 [6%]	2 [6%]
Kidney complications	22 [18%]	5 [16%]
Do not know	12 [10%]	1 [3%]

In the table above, there seem to be little difference between level of education and knowledge of diabetes complication. This could be explained by the fact that the sample is not big enough, and the patient group who did not finish high school could vary from illiterate people to patients who may have studied for at least 10 years at school. But it is noticed in the table that the percentage of patients who did not finish high-school and they are not aware of the cardio-vascular complications of diabetes are much more than the percentage of patients who finished high-school, and they know about the cardio-

vascular complications of diabetes. This could be explained that uneducated patients might not be able to relate the heart diseases to diabetes, as a part of the metabolic syndrome.

Therefore, I tried to search for another way to measure the degree of knowledge. In the next table I will show knowledge of different diabetes complications related to the duration of time that the patient had diabetes. 67 patients were diagnosed from 5 years and less, and 85 patients were diagnosed from 5-10 years or more with diabetes.

Table 20- Relationship between years of being diagnosed with diabetes and the knowledge about diabetes complications

Knowledge of diabetes complication	Duration of having diabetes	
	5 years or less	From 5-10 years or more
Eye complications	33 [49%]	60 [70%]
Feet complications	42 [62%]	54 [63.5%]
Cardio-vascular complications	24 [36%]	33 [39%]
Nerve complications	6 [9%]	4 [5%]
Kidney complications	13 [19%]	14 [16%]
Do not know	9 [13%]	4 [4.7%]

In the above table, we can see that the longer the time that the patient had been diagnosed with diabetes, the more he knows about eyes complications of diabetes. But the difference in the knowledge of other diabetes complications cannot be seen in this table. The percentage of patients who answered with no [means they do not know any of the complications], are more in the group who has been diagnosed with diabetes for a shorter time.

Another comparison concerning patient's knowledge, was asking the patients what is better for his/her health as diabetes patient according to the frequency of meals they should have daily, and the main reason for weight reduction for diabetes patients. The percentage of the patients who answered the first question by " it is better for my health

to eat small meals several times in a day”, which is the right answer, and the percentage of patients who answered the second question by “ To improve the blood glucose level” which was the right answer. Both frequencies and percentages of patients among the three visited clinics are shown in the following table.

Table 21- Correct answers concerning [what is better for your health] according to the meals timing, and the correct answers concerning the main reason for weight reduction among the three different clinics

Type of clinic	Patients’ correct answer for “What is better for your health”	Patients’ correct answer for “ What is the main reason for weight reduction”	Total
NGO clinic	41 [80%]	39 [76%]	51
Government clinic	39 [78%]	42 [84%]	50
UNRWA clinic	39 [76%]	39 [76%]	51
Total	119 [78%]	120 [76%]	152

The answers of these questions were mostly similar in the three clinics. And the difference is too small to be relevant. So I could not tell any difference between the knowledge of the patients attending the three clinics concerning what is better for their health in meals timing, and the main reason for weight reduction for diabetes patients.

I also asked the patients about what they know about the right way to control their disease. And the results are shown in the following table

Table22- Frequency of people who knew what is the right way to take care of their disease

Patients’ answers to the right way to take care of their disease	Frequency of answers	Percentage of the answers
Check eyes, kidney----	32	21%
Follow diet instructions	109	71%
Take medications on time	119	78%
Check urine and blood for sugar	67	44%

From the above table it is noticed that most of the patients answered, that taking medications on time is the best way to control their disease. And the second common answer was following the right diet. And there was less focusing on the urine and blood checking, and the regular check up of eyes and kidneys.

The level of knowledge of the whole participants, concerning the right way to take care of their feet was tested. As seen in the next table, the majority of the patients agreed, that the best way to take care of the feet was by washing them daily and keeping them clean. And a difference is seen with the percentage of the rest of the answers. I would like to mention here, from my own observation that almost all the patients came to the clinic with slippers or sandals, and without socks. It was summer time, but they had been walking for a long distance on dusty roads to the clinics. It cannot be considered safe to walk like this with only sandals, because the patient would always risk injuring his feet. The feet would also become dirty, which could increase the risk for infection of the wounds. This may lead to further feet complications for the diabetes patients.

Table 23- Frequency of patients with right answers about the best way to take care of their feet

Patients' answers about the best way to take care of their feet	Frequency of answers	Percentage of answers
Massage with alcohol	42	27%
Wash them daily	119	78%
Wear bigger shoes	40	26%
Wear warm socks	39	26%
Don't walk without shoes	65	42%
Checked by a doctor	30	20%

I would like to mention here the frequency of diabetes foot complications that my study participants had. So we can get a better view of what they know, and what kind of complications they already have.

Table 24-The type of feet complications that the participants had and their frequency

Kind of feet complication	Frequency	Percentage (Total n=152)
Feet ulcer	15	[10 %]
Toe amputation	3	[2 %]
Leg amputation	2	[1.3 %]

Now, I am trying to look for the level of knowledge about different diabetes complications, related to the history of having any diabetes feet complications. I scored the answers of the patients by considering one point for each correct answer. The results are shown in the following table.

Table 25- Knowledge score of different diabetes complications among patients with or without feet complications

	Knowledge of diabetes complications score						Total
	0	1	2	3	4	5	
Patients with no feet complications	7	26	27	26	6	1	93
Patients with feet complications	9	16	22	12	0	0	59
Total	16	42	49	38	6	1	152

From the previous table, we can see that patients with feet complications had lower scores concerning their knowledge about diabetes complications, and none of the patients with high scores of 4 or 5 points had feet complications.

Rearranging the knowledge scores into high and low knowledge, by considering the scores from (0-2 points) as low knowledge and the scores from (3-5 points) as high knowledge. I prepared another table to show the relationship between having higher knowledge about diabetes complications and developing feet complications.

Table 26- Degree of knowledge about diabetes complications among patients with or without foot complications.

Knowledge score	Patients with no foot complications	Patients with foot complications
High knowledge (0-2points)	33 [35%]	12 [20%]
Low knowledge (3-5points)	60 [64.5%]	47 [80%]
Total	93	59

It is seen in the above table that 35% of patients with no foot complications had high knowledge, while only 20% of patients with foot complications had high knowledge about diabetes complications.

Here is another table showing the relationship between degree of knowledge concerning the best way to take care of feet for diabetes patients, and the number of patients who developed or did not develop diabetes foot complications. I scored the answers by one point to each correct answer. Then categorise them into two groups. One with high knowledge, which includes scores from (0-2points), and the second group, will be low knowledge with scores from (3-5points).

Table 27- Degree of knowledge about best way to take care of feet among patients with or without foot complications.

Degree of knowledge about feet care	Patients without foot complication	Patients with foot complications
Low knowledge (0-2points)	54 [58%]	41 [69%]
High knowledge (3-5points)	39 [42%]	18 [30.5%]
Total	93	59

It is shown in the above table that 69% of patients with low knowledge about the best way to care for feet had foot complications, while only 58% of patients with low knowledge about best way to care for feet did not have foot complications. These results indicates the relationship between knowledge and practice, which is a positive

relationship, but still these results could not be generalised, considering other barriers that would prevent the implementation of knowledge, like economical barriers, political, social and others.

The patients were asked about the areas that they want to know more about, concerning diabetes. Their answers are shown in the following table

Table28- Different diabetes subjects that patients would like to know more about.

Areas that the patients lack knowledge concerning diabetes	Frequency		Percentage	
	Diabetes complications	10		6.6%
	Medications	7		4.6%
	Diet	45		29.6%
	Controlling diabetes	13		8.6%
	Physical activity	8		5.3%
	Every thing	34		22.4%
	Nothing	35		23%
	Total	152		100%

It is shown in the previous table, that people want to know more about diet and what they should eat when they have diabetes. Also a big share of them answered that they want to know everything concerning diabetes. While 23% of them, do not want to know anything about diabetes. The patient's answers do not indicate if the patient knows enough about diabetes or not. The patient may know a lot and still wants to know more, or he may not know enough but he does not want to know more. But this table still gives an idea about the diabetes patient himself, the degree that he is concerned to know about his life-long disease and in which particular area.

The following table shows the percentage of patients who said that the education in their clinics is not enough, and areas they want to know more about, among the three clinics.

Table29- Areas concerning diabetes in which patients want to know more about among the three clinics.

	Type of clinic			
	NGO	Governmental	UNRWA	
Areas that patients want to know more about diabetes	Complications	2 [7%]	1 [3%]	1 [3%]
	Medications	2 [7%]	-- --	2 [6%]
	Diet	9 [33%]	9 [27%]	11 [33%]
	Control of diabetes	-- --	4 [12%]	4 [12%]
	Physical activity	1 [4%]	3 [9%]	3 [9%]
	Everything	8 [30%]	5 [15%]	6 [18%]
	Nothing	5 [18.5%]	11 [33%]	6 [18%]
	Total	27	33	33

In the previous table, we can tell that the patients who said that the education in their clinics is not enough are mentioning here the topics that they want to know about in diabetes. And the majority of them lack knowledge in diet mostly, and a lot of them also want to know about every thing in diabetes. The results of this table may not look interesting, but it can give hints to every clinic, on what areas they should focus in their education. And this is upon the patient's needs, those that attend this clinic.

The patient's perception of diabetes management

In this part, I want to investigate the way the diabetes patient perceive their disease, and what do they think about having and living with diabetes. One of the questions to the patients was; do they think that they are managing their disease properly? And in the following table, the results of this question are shown, according to the patient's response.

Table30- The patient's opinion, if they think they are managing their disease properly.

		Frequency of answers	Percentage of answers
The patients' opinion about managing their disease properly or not	Yes	61	40%
	No	50	33%
	Sometimes	41	27%
	Total	152	100%

And in another question, which was an open-ended question. I asked the patients how do they feel, when living with diabetes. Their answers were summarised in the following table

Table 31- Feelings of the diabetes patients, regarding living with diabetes

		Frequency	Percentage
The way patients feel about living with diabetes	Anxiety and fear of complications	46	30%
	Physically weak and helpless	23	15%
	It is God's will, we can't change anything	15	10%
	It is a normal thing now. I have adapted to it, and we can live with it if we take good care	68	45%
	Total	152	100%

From the above table, we can see the largest share of the patients perceives their disease in a good way. They think that they have adapted to it, even it was difficult in the beginning. This response of the patients cannot always really tell what they feel inside their hearts. They may like to show a good view of themselves in front of the researcher. However, I did another analysis to figure out how does patient's attitude, affect the way they are managing their disease, and the results are shown in the following table

Table32- The way diabetes patients perceive their disease, and how they manage it.

		Managing diabetes well all the time or sometimes	Not managing diabetes properly	Total
The feeling of the patients towards diabetes	Anxiety and fear of complications	31[67%]	15 [33%]	46
	Physically weak and helpless	13[56.5%]	10 [43%]	23
	It is God's will, we can't change anything	8 [53%]	7 [47%]	15
	It is a normal thing, I adapted to it, and we can live with it if we take care	5 [73%]	18 [26%]	68
	Total	102	50	152

From the previous table, we can tell that the group of patients who are adapting to their disease and are trying to live with it by taking good care of themselves, a large percentage of them are managing their disease properly. At the same time, patients who are worried about diabetes complications are also managing their diabetes well. So fear of complications could be a factor that helps patients to manage their disease, this is according to the patient's answers. This table showed us the way patient looks and perceives diabetes. And it seems that this help him in quick adjustment and acceptance of the disease, which leads into proper self-management.

Sources of diabetes information

Now we will come back to the diabetes education and looking more in depth for the sources where the diabetes patients get information. As mentioned before, I asked the health personal what they teach the patients, regarding diet, physical activity, and smoking. I asked them about the means that they use to give the message to the patients. And here I am asking the patients for the sources of information, and where do they get the information about diabetes?

In the following table the different resources of information is mentioned, and the frequency of patients that get their knowledge from them.

Table 33-Frequency of the patient who gets information about diabetes from different sources.

Source of information about diabetes according to the patients' answers	Frequency of answers	Percentage of answers
Don't get any information	5	3%
I follow educational program at my clinic	14	9%
From the nurse in the clinic	31	20%
From the doctor in the clinic	113	74%
From relatives and friends	51	33%
From radio and T.V.	80	53%
From brochures	11	7%
From video cassettes	2	1%

The results showed that the majority of the patients depend on their doctor to get information. This should be understood on the background of the lack of other sources of information, such as programs for diabetes. And how much there is focusing on the diabetes education in the public. Television seems also important source for information, and as a result of frequent closures, people tend to spend most of their time at home watching television. It is also noticed that people do not depend on brochures to get information about diabetes. This could be explained that a large number of the participants were illiterate, and the brochures are not always available at their clinics.

Since I am focusing on the diabetes education in the clinics themselves, I have illustrated in the following table the frequency of patients that gets information from the different sources in the different clinics.

Table 34- Frequency of patients who get information from their clinic among the three different clinics

Sources of diabetes information	NGO clinic	Government clinic	UNRWA clinic
Follow educational program in the clinic	4	4	6
From he nurse in the clinic	11	13	7
From the doctor in the clinic	42	43	28
From brochures	3	5	3
Total	60	65	44

In the three clinics, the highest number of the patients gets information from the doctor, and then from the nurse. But by looking at the total, it seems that the package of information, which is given to the patients inside the government clinics is the biggest one, taking into consideration that one patient may get information from more than one source. However, in the three clinics the number of patients, who get information through organised educational programs for diabetes, is very little. At the same time, it is noticed that in the UNRWA clinic the number of patients who receive information from the nurse and the doctor are still few, this could be explained by the huge number of patients that attend this clinic, and the little number of staff working there, so the time that the health workers spend with the patient is relatively short.

Patient's satisfaction in diabetes education

I started by asking the patients, if they think they know enough about diabetes, or they wanted to know more. This question will show us the interest of the patients with diabetes education, and do they feel the need for more information?

Table35- Degree of satisfaction of the diabetes patients with the knowledge they had

Patient's answers concerning their level of knowledge about diabetes	Type of clinic			
	NGO	GOV	UNRWA	Total
I do not know much, and I want to know more	22	19	20	61
I know a lot, but I want to know more	22	27	22	71
I have enough knowledge	7	4	9	20
Total	51	50	51	152

The answers in the above table show that the majority of my participants, said that they know a lot about diabetes, but still they want to know more. And this is considered a good attitude of the diabetes patients. But still a lot of them say that they know enough. And that means that they do not want to know more. And very few admit that they do not know enough, and that they need to know more.

In attempt to know if the patient understand what is said to them, and what is mentioned in the educational session. I have asked all the participants, if they do understand all what be said during giving the information to them. The responses of the patients in the three different clinics are shown in the following table.

Table36- Patient's answers if they understand the educational sessions in their clinic

		Type of clinic			Total
		NGO	GOV	UNRWA	
The patients' answers concerning understanding the educational session	Yes	40	38	35	113
	No	2	1	3	6
	Sometimes	9	11	13	33
	Total	51	50	51	152

From the above table, we can see that more than 74% of the patients said that they understand what is said to them in the educational sessions. And this percentage may show us, that the deficit is not if they understand the message or not. But it will depend later on how the patient perceive this message and use it in a way that will help him achieve control over his disease. It is also noticed in the above table, that the number of patients who said yes or no, are somehow similar in the three clinics.

Another question was given to the patients, asking them if they are satisfied with the information given to them or not. The responses of the patients varied from very good, good, not bad, bad and very bad. I tried to summarise the results in the following table.

Table37- Patient's satisfaction with the advice session given to them in the three clinics

		Type of clinic			Total
		NGO	GOV	UNRWA	
Patients' satisfaction with the advice according to their answers	Good	17	26	22	65
	Not bad and not good	23	12	17	52
	Bad	11	12	12	35
	Total	51	50	51	152

In the above table, the positive response when the patients considered the educational programs are good is the biggest share of the answers. While there is also a considerable share of answers, who just gave a neutral answer, by saying it is not bad and it is not good at the same time. The response can be explained, maybe, that the patients did not

feel free to tell their real feelings about what is happening in their clinic. And that could be understood, since the interviews took place in the same clinic, where they receive the care and treatment. But they also admit, that it is not very good which means, that they are looking for more educational sessions, and focusing on giving information. It is noticed in the above table that there is no significant difference in the patient's answers in the three clinics, since the patient's background is almost similar. It was noticed during the interviews with the patients and during the focus group discussion that the participants were very much similar in the way they spoke and evaluated things. This could be a reason why there was no difference between the three clinics according to the way patients perceive diabetes education in their clinics, in addition to the fact that the system of giving education in the three was almost the same. There was not any special, well-organised educational program in any of the clinics visited.

I asked the patients then, if they think that the education in their clinic is enough. In order to figure out, if they consider the lack in education or they are just satisfied with what is offered. And in the following table, I have shown the answers of the patients.

Table38- Patient's answers about their opinion concerning if diabetes education given in their clinics is enough or not.

		Type of clinic			Total
		NGO	GOV	UNRWA	
Patients consider diabetes education in their clinics is enough or not	Yes	24	17	18	59
	No	27	33	33	93
	Total	51	50	51	152

In the above table, the number of patients who thinks that education in their clinic is not enough is the same in the government and the UNRWA clinics. But the number of patients who thinks that education in their clinic is enough is higher in the NGO clinic. This could be an indication as well on how patients were satisfied with the education offered to them in their clinic. But still these numbers will not tell much, since my sample size is not very big.

Patient's satisfaction with the health services

I have looked as well, for the patient's experience with the health staff. And I asked the patients how they think about their contact with the health workers. I graded the answers with very good, good, not bad, bad and some are good and some are not. I have summarised the patient's answers in the following table.

Table39- Patient's experience with the health staff in the three clinics.

The patient's experience with the health staff	Type of clinic			Total
	NGO	GOV	UNRWA	
Good	42	45	40	127
Not bad, some are good	8	5	9	22
Bad	1	0	2	3
Total	51	50	51	152

The majority of the patients in the three clinics experienced a good contact with the health staff. This response could be biased also, from the fact that I was interviewing the patients in the clinic itself. And sometimes some of the health workers would step into the same room where I will be interviewing the patient. But still I can believe that the answers of this question depend too much on the patient, his experiences with the clinic, and sometimes the patient's mood.

A chance was given to the patient to suggest new things to be done in his clinic. In order to improve the education that is given. And I tried to summarise the suggestions of the patients in the following table.

Table40- Patient's suggestions for improving education in their clinic.

	Type of clinic				Total
		NGO	GOV	UNRWA	
Patient's suggestions to improve diabetes education	Give more courses and lectures	14	16	26	56
	Give more information on a personal level	15	1	12	38
	We want the doctor to teach us more	4	6	2	12
	Increase the time the health staff spend with us	3	1	2	6
	Nothing, or unrelated answers	15	16	9	40
	Total	51	50	51	152

As could be understood from this table, it seems that every patient's suggestion depends on where he finds the deficit in the educational programs in his clinic. It seems that a lot of patients are asking for an organised program, with lectures and courses for diabetes, this could be seen more in the UNRWA clinic. However, some of the patients are asking that the amount of information, given to them on a personal level in every time they come to the clinic, could be increased. They were also asking to get more information from the doctor. The number of answers was almost the same in the three clinics. But only few of the patients asked for more time that the health personal spend with them, and that was almost the same in the three clinics. This table can be helpful to the three clinics, if they want to improve the diabetes education in their clinics. And increase the patient's satisfaction regarding diabetes education.

About meeting the patient's needs in every clinic, the patients were asked for suggestions for the health personal, and what would they like them to do. In order to bring improvement in their clinic, regarding the way of treating the patients and availability of facilities, in addition to education. The patient's suggestions were summarised in the following table.

Table41- Patient's suggestions for the health staff in order to meet the patient's needs

	Type of clinic				
		NGO	GOV	UNRWA	Total
Patient's suggestions to the health staff to meet their needs	Improve education	24	29	21	74
	Better facilities in the clinic	12	6	12	30
	Free medications	9	8	12	29
	Better treatment from the staff, a smile	1	7	6	14
	Home visits	5	0	0	5
	Total	51	50	51	152

It is noticed that the patients again demand improvement of the education given to them. And around half of all the participants asked for that, especially in the government clinic. They asked again for courses and lectures, to give more time for teaching, to give instructions, and to distribute books or brochures especially about diet. One patient asked for special lessons for the elderly for they need special treatment, so they can get the message. This is not shown in the above table. It is also noticed that many patients asked for better facilities in the clinic, which implies better access to laboratory tests, and more specialists in the same clinic for different diseases. This table also should be taken into consideration by the health staff that wanted to achieve improvements in their clinic. Some of the suggestions may not be affordable for the time being, but giving a smile to the patient can always be affordable.

Self-management practices

This is an important part of the study. I tried here to look for the patient's practices, how the patient is treating his diabetes, and what means of self-management he is using to treat his disease.

A large number of patients, who are receiving oral medication or injections, are only using them alone without practising the other means of self-management, like diet and physical activity. I will show in the next table, the percentage of patients who are on medication treatment only.

Table42- Percentage of patients who are using drug treatment only

Drug treatment of diabetes	The way patients treat their diabetes			
		Patients using drugs with diet and exercise	Patients using drugs only	Percentage of patients using drugs only from patients using drugs, diet and exercise
Oral medications	80	62	77.5%	
Insulin injections	43	40	93%	
Both tablets and insulin	24	15	62.5%	

In another table, I will show the distribution of the medication use in the three clinics visited, according to the patient's answers, to get an idea about type of medication treatment that patients are receiving in the three clinics.

Table 43- Distribution of diabetes medications' use in the three clinics visited.

Type of drug treatment	Type of clinic			Total
	NGO	Government	UNRWA	
Insulin injection	12	18	13	43 [28%]
Oral tablets	37	19	24	80 [53%]
Both insulin and oral tablets	2	11	11	24 [16%]

The distribution of these results among the three different clinics was; Oral medications are prescribed more in the NGO clinic and around 53%of the participants are receiving oral tablets for diabetes. While insulin is prescribed more, in the government clinics and around 28% of the participants are receiving insulin injections. And both medications together are prescribed more in the UNRWA and the government clinics than NGO

- Blood pressure check, 85.5% check their blood pressure regularly
80% check it every month

- Doctor's visit for general check up, 72% visit their doctor regularly
48% visit the doctor monthly, the rest had less frequency for visits

- Weight check, 93% check their weight regularly
76% of them check it every month
52% are satisfied with their weight
45% are not satisfied and wants to reduce their weight
4% are not satisfied and wants to increaser their weight
48% have lost weight after they have been diagnosed
only 27% has made an attempt to reduce weight

- Feet check, 95% said that they check their feet, and 86% check them daily

- Physical activity, 41% exercise for health purposes
68% has not changed their physical activity after diagnosis
28% only had increased their physical activity after diagnoses

- Smoking, 15% of the participants smoke
9% of them stopped smoking after diagnosis
9% reduced smoking
12.5% did not stop or reduce the smoking

- Diet, 79% has changed their eating habits after diagnoses
45% are on special diabetes diet
43% are sometimes on special diabetes diet
12% are not on a special diabetes diet
55% has not changed the number of mails in a day
19% has increased the number of meals every day

26% has reduced the number of meals every day

Changes in eating habits including the increase, decrease or stopping the intake of meat, lard, sugar in the drinks and other types of food, are shown in the following table in percentages, according to the patient's frequency.

Table44- Changes that diabetes patients made concerning intake of some kinds of food

Kind of food	Patients who decreased eating %	Patients who Stopped eating %	Patients who increased eating %
Meat	43	2	--
Lard	39	4	--
Sugar in drinks	54	14.5	--
Sweets	47	16	--
White bread	20	8	--
Whole bread	2	0	26
Vegetables	7	0	14
Fruits	14.5	0	12
Fish	10	0	9
Chicken	10	0	12
Olive oil	10	0	9

It is noticed in the above table, that usually the patient, who practices self-management through following proper diet, would decrease mostly the sugar in their drinks, and the sweets in general. Also decrease the amount of meat they eat. They would stop using the sweets mostly, and the sugar in their drinks. And they would increase the use of whole bread, vegetables and fruits and chicken. But it is noticed that the majority of the patient will start by taking off the sweets from their diet, because of the idea of relating diabetes to sweets. Few of them would relate other types of food to their diabetes, and less focus on increasing some types of food, which will help them to find a balanced diet. And that was one complain of the diabetes patients, regarding living with diabetes, that they are now not allowed to eat this and this. But they do not know what they are allowed to eat. This is another notice that was observed from the health personal, when they focus on listing the types of food that the patient should stay away from. Without giving any substitute for the patient and advising him for the type of food that he be allowed and should eat.

Barriers to proper self-management

67% of the participants are living in nuclear families, 30% in an extended family
The mean average of people that are living together is 5.3

Those who live with (1-4) people in the same house are 42% of the whole sample
While 55% of the participants live with (5-16) person in one house
59% of the participants eat the same food with the rest of the family

These figures gave an idea, on the way that the Palestinian families are living. It looks little crowded in one house, and families tend to stick together. This could be an advantage and disadvantage at the same time. Being a big family with a lot of children or elderly, can be a burden on the father or the person who support the family. For most of the women do not work, and in the case if the man had many children or he had his parents or one of them to take care of. That means usually the economical status of such families, cannot be very helpful when one of the family members had diabetes. And he has to pay for the medications; doctor's visits and check ups, treating complications of diabetes, in addition to the need of cooking a separate food, which would suit the diabetics. All of this and other things also could be considered barriers to proper diabetes self-management.

But it could be also an advantage, when you have more than one member in the family who has a job. Then the diabetes patient can get a better financial support. The family members can also help, in addition to supplying medications. They could accompany the patient to the doctor, help in preparing food for him and other things. I asked the patients if they receive any help from their families, and what kind of help. And I got these results.

Only 30% of the participants often get help from the other members of the family, in taking care of their diabetes. And 25% had never get any help from their family members.

39.5% of the patients got help from their families in preparing the right food, 38.5% got help in having a company when visiting the doctor, 35.5% in buying their medications, 34.5% in administering the medication and 14.5% in funding for the medications.

Regarding the self-checking of blood sugar at home, only 49 patients had a blood checking apparatus at home, that is 32% of the participants.

12 patients, that are considered 24% of the patients who had the blood check apparatus, had also problems in using the machines. The problems were that they do not know how to use them [6 patients]. The sticks are expensive [4 patients]. Don't know how to read [1 patient]. Or they do not get accurate results from them [1 patient]. 37 patients supply for the testing costs by themselves.

About the availability of the testing sticks, 63% of the patients who had the checking apparatus said that there was no problem in finding them. 13% of them said that they could not afford them. And 24% of them said that they are not always available.

92% of the participants had health insurance, but different types of insurance. The coming table shows the frequency of the patient, who had the different types of insurance

Table45- Types of health insurance that the participants of the study had

		Frequency of patients	Percentage of patients
Type of insurance	Private insurance	13	8.6%
	Governmental insurance	87	57.2%
	UNRWA insurance	32	21.1%
	Both governmental and UNRWA insurance	6	3.9%
	Private and governmental insurance	2	1.3%
	Total	140	100%

So most of my participants had the government insurance. But still they do not always attend the government clinic. They would go to other clinics, depending on their residency area. But very few had private insurance. This is not a real picture of the distribution of health insurance in the West Bank. But could be explained that two of the three clinics I have visited belong to the government or to the UNRWA, where people had their health insurance.

Qualitative findings

In this session, I will explain the Palestinian diabetes patient's perceptions, regarding their disease, the health care they got, and other issues they liked to discuss in regard to the questions raised. This information I got during the two focus group discussions I conducted in two different clinics, in Al-Beireh governmental clinic, and Al-Amaari UNRWA clinic. These were the same clinics where I had interviewed the participants of my study. The two focus group discussions took place after I was done with all the interviews with the patients, the information I got through these group discussion, were to function as a complementary part of the quantitative data. In the two discussions a pleasant atmosphere was created, the patients were happy to talk and share experiences. I noticed that some were a bit quiet in the beginning. But after a short while, and after listening to the others telling their own stories and problems, they found that they have also the same problems and they could share it with the others as well.

The first group discussion took place in Al_Amaari clinic. Seven people participated in it. Few refused to participate. They wanted to go home. The rest wanted to stay, because they perceived the discussion, as being something for their own benefit. The session lasted for 40 minutes. A video camera was used to record the discussion after taking the permission of the participants, and assuring them privacy and confidentiality. The second group discussion took place in Al-Berieh clinic. Six patients participated. It lasted for 50 minutes. The same ethical considerations were assured. Both men and females participated in the two sessions.

An interview guide was prepared, just to start the discussion. The discussion was in the local language "Arabic", but I have translated it into English in this thesis.

I started the discussion by asking the patients why do they come to this clinic, and what is offered to them here. Questions about diabetes education in the clinic were asked, the main barriers to receive education, the main barriers to proper self-management, and the perception and feelings of the diabetes patients. The patients answered my questions at

the beginning individually, then they started asking each other. A discussion was started, some of them talked more than the others, while some of them were satisfied with few comments. I tried to guide the discussion on to the track, when going out of the subject. I tried to give everybody a chance to participate, and give his or her own opinion.

I organised the information I got according to topics, and some statements made by the patients are cited in full.

Health services

In both clinics, the patients did not pay any fees for the treatment. In the UNRWA clinic, the doctor's consultation is free of charge and the medications as well. In the government clinic, the patients are insured through a government insurance policy, this implies monthly pay. In addition they have to pay for a part of the medications.

I would like to start with the UNRWA clinic, and what were the patient's answers, when I asked them for the reasons that they attended this clinic.

A woman started by

"We come to this clinic, because we cannot afford to pay for the doctor's consultation and for the treatment".

" Al-Amaari clinic, is the best UNRWA clinic, the laboratory test are always accurate, and the staff here are so good, and that is why patients come here every month".

" This clinic provides every thing, we check our blood sugar, the blood pressure, the weight in addition to the annual full check up".

"This clinic is neat, regular, accurate blood tests, it is better than the private clinics, the patients see the doctor on their turn, the nurses are good, they smile to us, and this is at least what we need in this tough situation". And every body agreed on this point.

In the government clinic, I asked the patients the same question. And the patients there gave other reasons why they attend this clinic, like for example.

" We come to this clinic according to the monthly appointment, to get our medications"

“ This doctor is better than the others, and I have benefit from him a lot” I asked why, So she answered, “ the way he talks and treat the patients we feel comfortable with him, and this is more important the psychology than other treatments”

The patients here expresses, that they find their basic treatment needs in these clinics. From good treatment of the staff, and the appropriate other tests and check ups. They considered that this is sufficient service, for a diabetes patient. None of the patients in the two clinics mentioned that they came to this clinic because more advice or education was provided.

Some problems were mentioned by the patients, concerning the health system in general and also in their own clinics.

In the government clinic, patients mentioned the problems about medications; for example;

“The medications are sometimes not available in the clinic, and then we have to buy them from outside”

Other points showed other specific problems in the clinic it self. Like;

“ The number of patients is big, and the number of the doctor is little”

Another patient gave a comment; *“ Berzeit is a big village, and it is where many villages meet, but still, there isn't a diabetes clinic in it, this is a problem, for we need to come from a long distance through check points to reach to this clinic”.*

At the UNRWA clinic, the patients mentioned some similar problems, like;

“This is a problem, especially for diabetes medications, it is serious not to take the medications when you have diabetes”.

“ But the UNRWA pays sometimes, for a part of the unavailable medications”.

Another man started a new point by seeing, *“ Yes, but we have a problem of reaching Jerusalem. If we need a hospital for emergency, we cannot reach to the hospitals in Jerusalem, only if we get in there by an ambulance. And when we are there, usually we get a referral paper from them, and then the UNRWA pay for it”.*

The patients showed their concern, and anxiety about the current situations. In fact there wasn't a single point raised, without referring to the current difficult conditions.

Diabetes education

I asked the patients about the kind of education that was given to them, what is given right now, and what do they think about education in general.

The remarks were good. The respondents were open. They told exactly what the situation was. When the question about education was asked, there was a silence for a while. I thought they might not have understood the question. I made it simpler, and one of the patients answered;

“ We used to have that in the past, more instructions were given about diabetes care concerning wounds and diet, but that was before”.

And another patient gave the same remarks; *“ There used to be brochures in the clinic, but they are not always available, and it is always the same material, and the same patients, and the instructions are always repeated the same, so we do not benefit from them anymore”*

“ There used to be a lady who came to the clinic, and she used to give us instructions, about many things like diet, walking, the body care, and she hang things on the wall always, but we do not see her anymore now”.

One man interrupted by;

“ Diabetes education is one of the missing things”.

Then I asked, *“ What do you learn here, when you come to the clinic?”*

A woman answered, *“ When the nurse or the doctor look at our blood glucose test, and if it is high, then she will tell us that we should stop eating the sweets and fat”.*

Another man said, *“ Yes they are good here, they always talk to us when we come to the clinic. The doctor used to ask me to bring him a list of things that I have eaten, and he tells me what to eat and what not to eat”*

Another woman answered; *“ No, the nurse doesn't give instructions, and we do not need them, because every patient knows about his health, more than any doctor”.*

Another woman protested; *“ No that is not true, she talks to us sometimes”.*

It is obvious, that education is not in the centre of the diabetes care and treatment, and it is conditional and individualised. It is true that some patients needed focusing on certain areas more than the other. But the issue is, the absence of a system and schedule in the daily activities in the clinics for giving a specific time and effort to education alone. Not when doing other types of work like, measuring blood pressure or weighing the patient. The patient himself recognises the deficit, maybe not enough because he is not aware or used to having the proper education. At the same time as we can see from above, the patient misses what have been provided for him. However, I noticed that regardless how old the patient was, he would mention that they used to teach something at the clinic, and that it is not always the same now. Some patients mentioned the importance of diabetes education.

A man said; *“ I am interested in education, in order to improve my condition, and this is important, especially when you are a man ”*.

Another woman continued; *“ All the diabetes education is for our own benefit, and we need it, in order to know how we should control our disease ”*.

A woman had another reason for learning, she asked; *“ I want to learn more to know what is the effect of herbs on diabetes, so we can substitute the medications ”*

I asked what would they like to learn from the doctor and the nurse. The answers were different, but one woman started giving information to the others. When they showed their interest in knowing more, she said;

“ The diabetes patient should stay away from sweets, eat fruits but not a lot. Not a lot of rice, and a lot of vegetables ”.

I asked the patients, *“ Would you like to have diabetes education programs in your clinic ”*?

A man answered, *“ This is a good thing, if someone comes to teach us this is good. But not every body will understand ”*.

Another man answered; *“ Diabetes education can never be a waste of time ”*.

Another woman continued, *“ 90% of the patients are not aware and are illiterate. What the nurse should do is that when she talks to a patient she should frighten him, and show him the danger, especially the first one and two years they do not feel the danger ”*.

Diabetes self-management

The patients discussed their opinion about diabetes self-management. They mostly referred the self-management to eating the proper food, or taking the medications. Some of the remarks were interesting, like for example, a woman said;

“After we leave the clinic, we always remember what the doctor told us, and do what he advised us to do. This disease is a problem, and we should listen to the doctor’s instructions”

Another man answered, *“ Actually a lot of diabetes patients has the will to change their diet, take their medications on time, and continue the proper treatment, and they can control their disease”*.

“ But most of the diabetes patients are old, and they have had diabetes from a long time, and they probably have heart diseases, so they are not able to take care of their disease”.

About diet a woman said; *“ Some people say that diet is more important than medications”*.

But a man asked her; *“ How did you manage to get used to changing your diet?”*

So the woman answered him; *“ If I want to do what is for my benefit, I should pressure myself, if I know that something will increase my blood sugar then I stay away from it, and if necessary I take only a little bit”*.

Some patients were more familiar with a healthy diet than others, and they gave some advice to each other. Like eating more fish, and staying away from lard and cheese, for they raise the cholesterol level in blood. They also advised each other to leave the white bread and eat more whole bread. And that was one of the problems, since the price of the whole bread is more expensive than the white one.

Some patients consider controlling diabetes, is taking the medications on time only. For example, one man said;

“ I am controlling my disease very well with injections”.

On the same time, I asked a woman, if she controls her diabetes well. She said that, she sometimes, controls it. And she added;

“ Only when I take care, and do not eat much. And also when I walk a lot”

During this session, the patients asked a lot of questions about different types of food. Like for example, if they are allowed to eat potatoes or not. It was obvious that they wanted to know more about the subject. It seemed that it is the most important topic in self-management according to them.

Other self-management measures were discussed as well, like physical exercise. From the previous individualised interviews with the patients, I figured out that they mostly practised walking only. This is the only thing that is possible to practice. This could be due to the economical status, or the current situation back there, that they are only allowed to do so. A woman comments on this and she said;

“ We like to exercise, to walk, and we always walk to the shop, and walk to the clinic”.

Another woman said that she runs, and she doesn't care what the people would gossip about her. She meant that the habit of running is not very well accepted in the Palestinian context especially for women.

A question about smoking was asked, and since none of the participants smoked, so no comments were made, but all agreed when a lady said,

“ Smoking only kills the diabetes patient”.

Causes of diabetes

The expression that was repeated, by almost all the participants in the group discussion was stress. They all related it to the difficult situations that the country is going through. They related the reason they got diabetes to stress, or to events like killing or capturing someone from the family, in addition to the checkpoints, closure and difficult transportation. They also explained the reasons why they are not managing to practice proper self-management, to this stressful situation.

A woman said;

“ Listening to the news every day, when you see all these young men killed every day, looking at the bad economical and social life that we are living now destroy every effort that we may try to do to control our disease”.

Another man answered; “ *Yes that is true, the check points only raises my blood pressure every time I go through them*”.

They relate the aetiology of the disease to a stressful or sad event that they have experience, like for example;

“ I was so healthy and strong. But one day the soldiers came in the middle of the night they were looking for a young man who lives in the neighbourhood, the fear that we experienced when they invade our home and they were searching there, after that I discovered that I have diabetes”.

Discovering diabetes

The participants were asked to tell how their diabetes was discovered for the first time.

And a woman started by;

“ There is a lot of people who have diabetes and they do not know. They say they do not have diabetes, and when they do the test they discover that their blood sugar level is high”.

A woman agreed on that, and she told us her story,

“ I fainted once, and I went to the doctor. He checked my blood sugar, and he asked me if any of my family members had diabetes, so I told him that my father died and he had diabetes, and since then I knew I had diabetes”.

Another lady started her story by,

“ I discovered that I had diabetes, when I had Panceriatitis. The doctor told me that I have diabetes, but I was okay. So I did not take any medications. Then my son was killed, and I travelled abroad. There they told me that I had diabetes. It is the doctor’s fault who did not give me medications from the beginning”. “

Barriers of self-management

In addition to referring the causes of diabetes to stress and the political situation, the patients also explained the poor practices of exercise to the same reasons. For example a man said;

“ The conditions here do not allow us to walk and exercise”.

The poor economical situation, which could be also, related to the current situations, where a lot of people lost their jobs or they are unemployed which has deteriorated their economical status. Their problems were mainly with buying the medications.

One man gave a comment; *“ I am receiving insulin for my diabetes, but last time I was late to get the insulin for 15 days, and it was finished at home, but it was closure and I could not come here to get it”.*

Patients also, mentioned other reasons for not receiving their medications. Like;

“ Women do not know how to control them selves, they take the medications at any time, just when they remember them, and that is not regular, but not every body do the same”

Coming to diet, as a one mean of self-management. The patients were asked, if they followed a special diet for diabetes. Some of them answered by yes and the others said sometimes or no. Then we discussed the reasons why they do not follow a proper diet for their diabetes. One of the women said;

“ You say that this disease is serious, but sometimes there is no possibility to eat what is allowed for diabetes patients, because we cannot afford it”.

Another woman said, *“ We cannot afford to cook a special dish every day only for us, and then cook another thing for the rest of the family”.*

Another patient answered her, *“ Yes, but there is a way to cook the same dish but without adding oil”.*

Referring to the point of diet, the patients complained that they do not know what they should eat. They think that being on the right diet is buying the diabetes food products like the special bread, sweets or saccharine.

“ The nurse forbid many types of food, when we cook we do not know what to cook, there is no alternatives, this is confusing, especially when you have diabetes, hypertension and cardiac diseases”

Another patient answered her; *” Eat salads”*.

And I asked a woman, *“ Why do you think that the patients do not follow the diet instructions given to them”*

The patients answered that they found it difficult to change their diet.

A man sitting in the corner commented;

“ The Palestinian man usually gets angry if he doesn't get proper food prepare. It is known that we should avoid carbohydrates, sweets, white bread, but at home I am always in a mood to eat these, so I eat some of it. You know it is allowed to eat a little bit, especially when there is no other proper food to eat. So little sugar with tea, little sweets are allowed but not much. I used to have higher blood sugar level, but since I take good care it is better now”.

Most of the patients repeated the point, how difficult it is to leave the delicious food that their wives cook. Or when they have nice sweets at home.

Some referred the problems about diet to the traditions, like;

” The traditional social habits, especially in the feasts, and the unavailability of diabetes food, this leads us to eat food which is rich with sugar especially our delicious local sweets”.

Another barrier to proper diet, as a mean of self-management was mentioned by one of the patients. He said;

“ A lot of diabetes patient feel shy to tell that they have diabetes, when I visit my friends I do not tell them that I have diabetes”

So the other man told him, *“ Why to feel shy, I don't, if any one serves me something that I should not eat, I apologise and tell them that I have diabetes”*.

Some patients talked about depression of the diabetes patients, as another barrier to self-management. And the reason for depression could be the unchangeable condition of diabetes. For example;

“The person will have a depression after taking the medications for a long time and no changes in his condition. So the body doesn't respond to medications after a while,

especially if you have other diseases like hypertension, or if you get eye problems, and headache, you get depression”.

They also mentioned the depression, as a reason for not following a proper diabetes diet.

A man said; “ *Eating is not every thing in life, we eat only to live not live to eat, but I Understand, that if someone has diabetes for a long time, and he is following a diet, and there is no changes in his condition, he will be depressed after a while”.*

Then a woman told us her story;

“ My husband likes sweets and soft drinks, he wants and like to eat all of this, he said I do not care if I die. He hides the food and eats it when I am not there. He has reached to a point that he is very sick and cannot leave the bed, I help him to move and lifting him, now I have a severe back pain from this”

The point of using the blood checks apparatus was raised. Most of the patients do not have them. They usually check their blood for sugar level once in a month when they come to the clinic. I asked the patients why don't they have a small machine at home, so they could check their blood sugar whenever they want, or when they feel tired. One of the patients answered me by;

“ I do not have a blood check machine, it is expensive, and the sticks are also expensive, so some times when I visit my friend, she check my blood with her machine”.

Feelings and perception of the diabetes patients

The most common feeling that most of the diabetes patients had, was feeling tired of this disease, and depression, in addition to other physical complains that they were suffering from. They referred every thing bad they had is caused by diabetes;

“ I have diabetes from 30 years, my arteries are blocked, I spend my time running form one hospital to another, now I cannot even reach to Jerusalem, and I have to go to Ramallah governmental hospital”.

A man said;” *I have controlled my diabetes for 20 year, I got injections and pills for that, but sometimes I get weak and tired even if I take my medications. I am not able to do all the work I used to do”.*

“ I used to read, write and walk. Now I do not feel my legs”.

“ The diabetes patient will lose his feet and sight”.

“ Diabetes is a disaster, the conditions of the patients at home is difficult, and its complications is very serious”.

“ God keep this disease away from everybody, because a person needs sweets, and there is a lot of delicious fruits. And when we have diabetes, we are deprived of all the nice things that we can eat”.

“ I lost my teeth from diabetes”.

“ I took my mother to the ophthalmic hospital. She lost her vision, and my brother in Jordan lost his vision as well. This is frightening”.

I asked a younger woman, if diabetes bothers her, she answered;

“ Yes, very much. The neighbours and my friends do not have diabetes. I am only 42, my father gave it to me, and also my brother has diabetes from stress. When I complain in front of my children, they say; do not complain you are still young”.

Some patients showed better adaptation and perception of their disease, they said;

“ I have diabetes and high cholesterol and hypertension, I don't eat sweets or fat, I control my disease, I live on natural things, like tomatoes.”

“ I used to have a very high blood sugar, since I came to this doctor, I feel much better, I do not eat potatoes. I just ate it yesterday, because I had diarrhoea. Is the potatoes harmful?”

And a man ended the discussion by;

“ It is for sure that every body should take good care of himself”.

Suggestions

I asked the patients if they would like to suggest new things to be done in their clinics. The patient's answers showed that they were mostly concerned about having their medications. They answered;

“ Availability of drug, and needles; Because we have to buy them when they are not available. Now most of the people's economical status is bad, due to the situation, and no available jobs”.

Another suggestions were given;

“ There should be special charitable institutions, which could visit the diabetes patients at home, and buy them their medications”.

Another man agreed, “ Yes, this is important. Some patients do not have a family to take care of them, and most of them are old and very old, and they have lost their memory and cannot take care of themselves”.

Chapter seven

Discussion

In this part, I am going to discuss two main issues; the first one will be the description of the context in which the study was done, and the methodological problems or limitations. Second, will be the discussion of the main findings related to my research objectives.

The study focuses on two different areas. First, the health workers and what kind of health education and promotion they provide for the diabetes patients. Second, the people with diabetes in Palestine: what do they know about their disease, and how do they perceive and manage it. In addition, I wanted to study the inter-linkage between health education and diabetes self-management practices. Investigating these issues will give us information which could help to improve the type of care provided to diabetes patients, in order to empower them, so they will practice proper self-management.

The purpose of this study is to highlight the weak areas in diabetes care, which could help to establish a new policy or approach. This hinges on finding a way to reach the exact needs of the diabetes patient, so he/she could more control their life.

Study design and methods

Methodological issues

I started the fieldwork for my study in August 2001, almost one and a half-year after the new Intifada started. At that time and until the day I finished the last part of my study; the Palestinian people have been living under very difficult conditions. For example, the daily Israeli violence, the killing of Palestinians policemen and civilians which amounted to the death toll of 1100 till 2002, as well as the demolishing of houses, using heavy weapons like guns, tanks, helicopters and warplanes. In addition to all this, there was the closure of every single city and village in the West Bank and Gaza Strip. The entrances to

Jerusalem were all closed. As a result of this, the economical status of the Palestinians was getting worse by the day. 50% of the Palestinians were below the poverty level, and 40% of them were unemployed. This situation obviously also affected the health status in Palestine. There are recent statistics showing the changes that occurred in all different areas of health, including primary health centres, hospitals, ambulance services, and in many other health areas. The effect of these changes are clearly shown in statistics on vaccination rate of children, number of maternal deaths, number of child deaths, number of handicap young people, as a result of injuries in head and chest (88).

Diabetes patients have been a part of this difficult situation. During my interviews and group discussions with the patients, I got a good idea of how diabetes patients were suffering from poor economical status, difficulties in reaching the clinics for the monthly visits, and difficulties in reaching hospitals in case of emergency, in addition to the unavailability of medications and facilities that also resulted from the tight closures.

For me, as the researcher, I was a part of this as well. It was difficult for me to reach the three clinics where I interviewed the patients. Sometimes I could not even get through the checkpoints, so I could not actually follow the time schedule.

I had also difficulties carrying out my original plan for data collection. The first methodology proposal was scheduled to conduct the interviews in the patients' homes, after getting their names and addresses from the clinic. Visiting the patients in their homes could have given me a better idea about the patients' living conditions, such as the way that they lived together with their family members. I could have got a clearer picture of what the main barriers to self-management could be. But this was not possible, because of the closure and the difficult transportation, so I resorted to meet the patients in the clinics instead.

In the sampling procedure, it was planned to select a certain fraction of the patients visiting the clinics on the days of the interview. I had set that fraction on the basis of the number of patients who attend the clinic daily. But at the time I conducted the research, a

lot of the patients could not reach to the clinic at certain days. So I had to change the sampling procedure according to the number of patients who actually arrived to the clinic on that day.

The data collection methods used were semi-structured questionnaires for the patients including both multiple choice questions and open-ended questions. Two focus group discussions also were done with the patients. Structured interviews with three doctors and six nurses from the three different clinics were conducted. In addition, the three in-depth interviews with three key persons in the health practice.

The study was the first to investigate in diabetes education in Palestine. This study could provide a base for further studies to improve diabetes education and therefore its effect on diabetes self-management.

The study was performed in three different primary health clinics, which serves people with different diseases in Ramallah City. It is an explorative study, which was used to identify possible issues and problems in diabetes care and education. The design was used to pick information from three clinics, which belongs to the three major health providers in Palestine. This design allowed studying differences in the way the health workers educate patients and give them information and instructions regarding diabetes. The design was used also to collect information from diabetes patients themselves about their perception of diabetes education, and means of self-management they practiced in their daily life.

The use of both qualitative and quantitative methods in the study gave a fuller picture of the situation and helped to answer my research objectives. The qualitative part was used to better interpret the results given by the qualitative part, and to render a more holistic picture of the situation.

Using both methods gave a complementary strength to the study and enhanced the validity of the findings. The qualitative research filled the gaps in the quantitative part.

The patients were given a chance during a pleasant atmosphere through a group discussion to tell more freely about their perceptions and what do they thought about diabetes and diabetes education. In the quantitative part pre-made questions concerning patient's background, knowledge and behaviour were answered.

The researcher is aware of other methodological problems, such as the sample size which was relatively small, when only 152 patients participated in the study. So the results of this study could not be representative of the Palestinian diabetes population.

Health providers situation and perception

Government health services

The key person in the ministry emphasised on the changes that occurred in the last two years, which resulted in the stopping of most of the diabetes programs. He also expressed his worries about implementing the future plans.

The doctor in the clinic mentioned the problem of the time they spend with the patients. Resulting from the patients' overload and that the patients are always in a hurry to leave earlier. This meant that he was not able to give education or check the eyes of all the patients.

The structure of the clinic worried the nurses at the government clinic. That was understood since they share their counter with the patients' waiting area, which makes it so difficult to carry any private consultation between the nurse and the diabetes patient. The patient might need to whisper if he/she wanted to ask a private question to the nurse. The only interaction between them will be during the checking of BP or the capillary blood test, where an ordinary dialogue will take place. They also said that they distribute brochures especially to newly diagnosed patients.

UNRWA health services

The emphasis on files and organisation of the patients' cards especially for diabetes and hypertension patients was noticed in the UNRWA health services. But the UNWRA had a health educator who organises the work for all the UNRWA clinics and that was different from the other two clinics I visited. The key person I interviewed recognised the deficit in the services and staff, and added the need for more educators and dieticians in order to bring improvement to diabetes care.

Al-Amaari clinic was noticed to be a busy clinic. The routine work of patients' records and filing seems to be running well, that it occupied most of the nurses' working hours, which leaves limited time for giving education. Brochures about diabetes were not always available. They had posters hanging on the wall in the clinic about diabetes care.

But while the nurse at the UNRWA clinic had her own office, and considerably more time and better place to meet the patient, the results of the study showed that the performance of diabetes education was not better at the UNRWA clinic than at the other two clinics I visited.

NGO health services

The issue of education was found to exist more in practice in the Medical Relief health services. The key person explained all the services the Medical Relief provides, and how they try to reach to the community by establishing the mobile clinics, in order to reach to distant villages where people cannot arrive to the city easily. It seems that these mobile clinics are serving a big proportion of patients.

Educational programs had been up set for many types of diseases, but they were not running as expected because of the current situation. But the Medical Relief is trying to continue on the same strategy in diabetes education, which emphasise on the patient's participation as a part of the educational process.

In Beddo clinic the nurses gave lectures for groups of patients with different diseases, but not on a regular basis. They had a wide variety of brochures in the clinic for many subjects and one of them was diabetes.

The nurses said that the patients like to attend the educational sessions, but some of them were careless or depressed, and some were not aware of the importance of the education. The same problem of space and time is repeated here. The nurse sat by a counter in order to register the patients coming, weight them and distribute the medications.

The doctor at the clinic seems to have a good idea about what diabetes patients usually feel what they need to know, and the right way to reach to them. He said that he always gives the patient a chance to talk about himself, and to ask questions and he usually answers them. He gives the patients alternatives concerning diet, and explains to them why they should reduce intake of some type of food and increase intake of the other. He said that his relationship with the patients is a social one. He noticed that the patients usually start to take care of controlling their diabetes when they hear that someone got serious complications of diabetes. Patients trust him and usually listen to them. They refused to go to another doctor or to a dietician if they were referred. According to the results of the study, the biggest share of the patients who thought that diabetes education in their clinic is sufficient was in Beddo clinic.

Appointments are usually set for diabetes patients to see an ophthalmologist, who comes to the same clinic to meet the patients.

My own impression was that health workers at the government clinic were oriented to the need of diabetes education. They had the desire to improve it. They believed the patient had the right to know more about his health. The Ministry of Health emphasised on the staff training, which helped the staff to be more oriented to the patients' needs. But they are suspending implementation of a better educational program till the current situation is over.

The system of running the Medical Relief clinic seemed to be well established. The health education was considered a part of the daily care of the patients. There were no scheduled programs for diabetes education. But since the staff were well oriented to educate at schools and outreach clinics, it will be easier for them to improve the type of diabetes education that they are providing now.

Staff at the UNRWA clinic was noticed to be less caring for bringing up new development to the type of care they were providing for the diabetes patients. They were running the routine daily work, and the issue of improving diabetes education was left behind. The high patients' load and the shortage of staff could explain this.

None of the three clinics I studied were a special clinic for diabetes. The doctors at the three clinics see patients with chronic diseases like diabetes and hypertension. The doctor in the government clinic was a diabetes specialist, while the one in the Medical Relief clinic was a chronic diseases' specialist and the doctor in the UNRWA clinic was general practitioner.

Some similarities were noticed in the three clinics. Health workers in the three different institutions studied repeatedly mentioned the effect of the current situation of conflict and war on the health system in general and diabetes in special. They mentioned lack of staff, lack of teaching materials, unavailability of medications and difficulties in accessing health care.

The problem of the high patient load on the remaining staff was mentioned. The diabetes, specialists were part of the problem.

The nurses in the three clinics said that they would lecture if there were a considerable number of patients in one day, and if there were enough time. However, they did not have a scheduled plan for diabetes educational sessions. Handling brochures was explained as diabetes education by most of the nurses.

The staff referred to the patients' positive comments on the individualised efforts to give education, which were provided now. The health workers thought that the majority of the patients usually listen to the advice given to them. Their impression was that patients liked to ask questions, and usually they do what they are told, if it was easy to implement. However, instructions on diet seemed to be difficult for the patient to follow.

Some of the health staff mentioned that they use the policy of frightening the patients from diabetes complications, in order to make them comply with the treatment. They refer the better compliance to the fact that the patients are afraid of diabetes complications. I am still wondering about this policy, if it is right or wrong to use it when dealing with people with diabetes. But I do know that using empowerment could be another way to persuade patients to take control of their disease.

Meeting the health workers at the three clinics showed that both nurses and doctors wanted to improve the type of care they provided to the patients. So it will be more than distributing brochures or giving a lecture on the international diabetes day. They did recognise the need for diabetes education, and the importance of it for the diabetes patients. They also mentioned the need for more education of the staff working within the diabetes field. They emphasised the need to establish more policies and plans with specific objectives to raise the awareness about the disease. The staff had needs and they have set plans but they did not mention how far they were from real implementation.

According to WHO, it is essential to any program of diabetes education that there are trained personnel with knowledge about diabetes and expertise in health education methods at the appropriate level of care provision (100). In the present study, it was noticed that most of the nurses had been attending post-graduate courses, and participated in many workshops and conferences about diabetes. There were still some lectures and meetings being held, so the health staff was updated on diabetes. However, an important issue is in what way information is given to the patients, and with what means? Are the Palestinian people more used to receiving instructions more than being educated in a two-way communication?

Diabetes patient's situation and perception

Sample characteristics

This study found that 71% of the sample was female. The age of the participants' ranged between 35-65 years, 44.7% of the sample being above 60 years. This means that a relatively big share of the participants were old. This was expected since diabetes is a disease that is related to old age.

Few of the participants were living alone. Most of the participants lived with their spouses, married or unmarried children or with sisters or married brothers. More than half of the participants lived in villages. They attend the clinic where their health insurance covers, even if it was not the closest to their residency. They usually used public transportation to reach the clinics.

80% of the participants did not finish high school. They were either illiterate or did not finish the 12 years of basic education. The majority of those who were illiterate or did not finish high school were female. This is a results of the society's priority of education given to men several years ago, when women got married early and had children.

Patient's perception and satisfaction of diabetes services

According to WHO, diabetes education is a cornerstone of diabetes care. Unless adequate education is provided, self-care, which is an essential part of the management of diabetes, cannot be ensured (100).

Diabetes patients mentioned the different approaches which health workers used to give advice about diabetes. The answers could be categorised as one-way consultation, where the patient received information given to him either by the nurse or doctor during individualised consultation, or during a lecture given to a group of patients. This group consists of about 60% of the participants, and somewhat more in the government clinic.

The second approach was two-way consultation when the patient meets the nurse or dietician and exchange information through asking and answering questions, and by giving enough time for the patient to understand and accept the information. Only 1/5 of the patients fitted into this group. The third approach was combining the two previous approaches together; only 7% of the patients replied that they were receiving this kind of education.

The majority of the participants said that they did not follow educational programs at their clinics. The reason most often given was there were no educational programs in their clinics. Graziani found that the attendance of educational programs in Philadelphia, USA was positively associated to female gender, insulin use and higher degree of obesity. The physician recommendation was an important predictor of attendance. The significant barriers to attendance were lack of awareness of programs, misperception about what programs involved structural barriers and health believes (101). In my study it was noticed that the female attendance to the clinics were more than male. This could be explained that most of the Palestinian women do not work, and it is more common that the man work outside home. So the men do not have the same available time like women to attend clinics and the educational sessions. In my study I did not compare the level of attendance to the insulin intake or obesity. But as it was proven statistically the prevalence of obesity between women were higher than between men. The health workers referred to the inability of some of the patients to understand what is said in the educational session, and the lack of awareness of the importance of diabetes education.

Concerning the place where the information sessions were held, the answers were in the doctor's office, the nurse's office, the two together or neither of the two places. But it was noticed that in the NGO clinic, education took place more often in the doctor's office. It was the same in the government clinic, but at the UNRWA clinic neither of the two places got the highest number of the answers. These results might be affected by the fact that people tend to listen to the doctor more than the nurse. They do count what the doctor advice them, and pay not enough attention to what the nurse says.

Only 1/5 of the patients believed that it is possible to start a better diabetes education. They said it depends mostly on the patient himself if he wants to learn or not.

They also related the challenges to the patient, whether he wants to stay in the clinic and listen to the session. In addition, the patients' educational level and his economical status are considered challenges. They also related the challenges to the current situation.

The majority of the participants agreed on the importance of diabetes education. They said it would increase their knowledge about diabetes and its complications. This would help them to know how to control the disease in order to live longer, and teach the others about it. They said that they were not satisfied with their knowledge about diabetes that they want to know more about it. Patients are eager to learn more, it is a dry field that needs watering. "I believe that people have the ability to learn no matter what their educational background or their age is".

Most of the participants said that they understood what was said in the educational session. Hat they meant by understanding is not really clear. Is it only the understanding of the language and words? Or is it more than that? But the patients said that they were satisfied with the advice session given to them, in case it was given. But they think that education is not sufficient in their clinics.

The majority of the participants described their experience with the health staff as good. Patients were concerned with the social contact they have with the nurses and doctors and the way they talk to them. A lot of the patients in the NGO clinic talked about how good were their contact with the doctor and they said that they listen and apply what he told them to do because they trust him. At the same time the doctor used this trustful relationship to reach to the patients to help them take over their disease. This was the same as Ciechanowski said. He explained that dismissing attachment in the setting of poor patient-provider communication is associated with poorer treatment adherence in patients with diabetes (101).

The patients gave some suggestions to improve diabetes education in their clinics. They wanted to have lectures or courses about diabetes, at the same time they asked for more information given to them on a personal level. Some asked that the doctor teach them more and few asked for more time with the health workers. The answers from the three clinics I visited were the same. Concerning the other health services, patients asked for better facilities at the clinic, free medications, and some asked for better treatment from the staff and a smile. Few suggested home visits for patients who are not able to reach to reach to the clinics.

It was found that there was a high compliance rate to the prescribed medications. This could be explained by the fact that medications were free of charge at the UNRWA clinic and were partially subsidised at the other two clinics, and in the cases when the patient had to pay for his medication he would give the priority to that. Another reason for high compliance could be the focus on the topic in the education given to the patients from the health staff. In addition, 78% of the diabetes patients believed that controlling diabetes is only taking medications on time. Kamel found in a study done in Egypt that only 78% of diabetics were classified as having very good behaviour regarding medication compliance (102). These results were almost the same compared to my finding 82% of the participants in my study were taking their medications on time always.

Diabetics level of knowledge

Health education is a process that bridges the gap between health information and health practices. Knowledge is one of the factors that bridged the gap.

Patient's knowledge of diabetes and its complications affected their behaviour regarding proper self-management, prevention and development of the complications.

The knowledge of people with diabetes in Palestine about their disease and its complications was considered good. This was shown from their knowledge about diabetes complications, meal timing, and effect of certain types of food on blood glucose level, reasons for weight reduction for a diabetic, and foot care. But when it comes to

knowledge about physical activities and smoking, their knowledge level was not considered so good.

There was no significant relationship between level of knowledge about diabetes complications and the patient's background educational level. Kamel, in a different study, found that there was a significant linear association when educational level and knowledge about complications of the disease was considered. More university graduates had satisfactory level or very good level as compared too those without any education (67). Whereas Mehrotra from India found that there was a total lack of knowledge regarding self-care of diabetes in all educational and occupational categories, this calls for an urgent need to create greater public awareness (75).

There was no association in knowledge about feet, cardio-vascular, nerve and kidney complications of diabetes between patients whom have had diabetes 5years or less and patients whom have had diabetes between 5-10 years or more. But patients who did not know any of the diabetes complications were more among patients who had less duration of having the disease. This could be explained that the longer the patient had diabetes the more likely he will develop one or more of the diabetes complications which he then will have to be familiar with. In a similar study done in United Kingdom, Ford found that gender and duration of disease did not appear to influence knowledge scores of diabetics (22).

Most of the patients explained controlling diabetes by taking medications on time or by following dietary instructions. While few of them explained diabetes control by regular blood and urine check up or check ups for eyes and kidneys.

The majority of the participants agreed on washing feet daily as a way of foot care. This answer does not show the real picture if they practised this or not. From my own observations, diabetes patients were not wearing proper shoes and socks most of the time when they come to the clinic. 39% of the participants had feet complications like feet ulcers, toe amputation or leg amputation.

The study showed that patients with lower knowledge scores of feet complication knowledge had developed feet complications more often than participants with higher scores had. This explains that patients who do not know much about feet complications are not aware of the danger, so they do not practice proper way to take care of their feet. As a result they are at a higher risk of developing feet complications. Kamel in her study found that there was no statistical linear association observed between knowledge of diabetes foot problems and foot self-care (67).

The results showed that higher percentage of patients with low knowledge about best way to care for the feet had developed feet complications. This explains the fact that patients practised what they know about diabetes foot care, and this resulted in fewer feet complications. Chan found in a study done in Hong Kong that there was no association between diabetes knowledge and compliance. There was a gap between what the patients were taught and what they were actually doing (70). Therefore, Ward from the USA found that intensive education program improved the foot care knowledge and behaviour of high-risk patients. Those who adhered to a foot care education were more satisfied with their foot care than prior to the program (103).

Patients were mostly eager to know more about diet. It became clear that patients had two problems in this respect. First: they did not know what to eat, second: they did not know how to stop eating what they liked and usually ate. The patients also asked to know more about diabetes control, physical activity and medications.

Finally we could tell that knowledge is not always associated with better practice. Which lead us to look more in-depth in between these two concepts. Where is the gap and how could these barriers in between be removed, to enhance better implementation of the knowledge?

Patient's perception of diabetes and diabetes management

It was important to know how the diabetes patient view diabetes, and how does he consider his life-long visitor that will live with him for the rest of his life.

The feelings that people had, as diabetes patients, varied from one patient to another. Less than half of the participants thought that they were managing their disease properly. Around half of them considered diabetes a normal thing in their lives now, they said it was difficult in the beginning but they have adapted to it. They said that they can live a good life with diabetes if they take good care of themselves. I consider this a good attitude especially under the present circumstances. I think people were living with greater problems than diabetes. Some of the participants said that they had anxiety and fear of diabetes complications. And few of them were worried about being physically weak and helpless and not being able to perform the daily activities. Some considered having diabetes as God's will and however they feel nothing would be changed.

It was found that the majorities of those who try to live with diabetes are adapting to it and are managing their disease properly. This finding showed that the way patients perceived their disease had an effect on their management of it.

Sources of diabetes information

The sources of information about diabetes in the clinics were, according to the patients, including the nurses, doctor, through lectures, individualised consultation or brochures. There were also other sources like relatives or friends, radio or television and videocassettes. But the findings of my study showed that the majority of the participants usually had the doctor as their primary source of information, then the radio or television, relatives and friends and only few of them got information from the nurse.

The results showed that the majority of the patients depend on their clinic to get information about diabetes. It seems that patients are not anxious to ask for more information. They will wait for the monthly visit when they might get some more

information. This could also be explained, that the majority of the patients who are illiterate, which makes it difficult for them to get information from other sources.

Diabetes self-management

The cornerstone of diabetes treatment is self-management, it is the way to pursue healthy measures in order to control the disease, to live better with it and prevent complications. But according to Goland, staying motivated to care for the disease gets harder and harder for the patients as the disease progresses (53). Patients became more depressed when there is no change in their health, especially when they develop some complications. Sometimes they wanted to change what they are eating when they get bored of the diabetes diet. These things in addition to other barriers mentioned inhibit the patients' motivation to stay in the track of proper self-management.

Diabetes patients interpret self-management as taking medications. Most of the participants who are taking oral medications, insulin injection or both of them together are not practising proper management when it comes to diet and exercise. The results showed that diabetics thought that taking the oral hypoglycaemic tablet and the insulin injection is all what they needed to do to treat their diabetes. The patients considered practising other means of self-management, as diet and exercise, not so important in their treatment. They are not aware of how much it is important to have a complementary treatment, which includes adherence to taking medication and practising proper self-management at the same time.

This result showed the need for diabetes education to emphasise the importance of self-management and to help the patient to find a way to practice it in his daily life considering all the barriers that would prevent that. Hunter found that a combination of patient education, practical guidelines, appropriate consultation, and supplies of drugs and services being the essence of disease management (104).

Looking at other self-management practices, the results showed that 99% of the patients checked their blood for sugar almost every month, while only 43% of them check their

urine for sugar. Kamel in her study in Egypt found that the majority of diabetes patients had their blood and urine tested for glucose (96%, 94.3%) (104). In my study 60% of the participants check their eyes regularly. But Kamel found in her study that 62.3% of diabetes patients did not attend eye screening. She recommended that health insurance personal should enforce the recommendation that diabetes patients have an annual dilated eye examination (67).

The majority of the patients in my study visited their doctor regularly. Their was a high attendance rate, but this could be referred to receiving the prescription for medications at the clinic every month. 85.5% of them checked their blood pressure regularly. The results of kamel's study were a bit different. She found that only 38.7% of her participants periodically went for blood pressure assessment (67).

93% of my participants weighed themselves regularly, but few of them made any attempt to reduce weight. But in kamel's study, she found that only 27.7% of her participants monitored their weight regularly (67).

Concerning feet care almost all the patients in my study said that they checked their feet daily by examining them. Kamel found that 75% of the patients administer foot care efficiently (67).

Most of the patients did not change or made any attempt to increase the physical activity after being diagnosed with diabetes. Only 41% of the patients exercise for health services. My results showed that patients considered exercise as one of the self-management means, which were unimportant for controlling diabetes. Kamel found that only 12.7% of the patients exercise regularly (67). So the percentages of the participants in my study who exercise were more than in Kamel's study.

Only 9% of the participants stopped smoking after being diagnosed with diabetes, and another 9% reduced the amount of daily smoking. In my study 39% of the men were smoking, while only 5.5% of the women were smoking. Statistics showed that 21.1% of

the people in Ramallah smoke. Kamel's findings were bit better. She found that 42.2% of the patients reduced the number of cigarettes smoked, and 27.6% continued to smoke as before (67).

Most of the patients changed their eating habits after diagnosis. 45% of them are on a special diabetes diet. In Kamel's study, she found that 59.7% of diabetes patients complied very well with their prescribed diet (67). Results in my study showed that the patients reduced sugar in their drinks and sweets. They also decreased meat intake. They increased the use of whole bread, vegetables, fruits and chicken. But those who increased the suitable food where few, the rest of the patients just took away important elements of nutrition without replacing them with a proper diet. It is known that the diabetes patient needs healthy food that will help him to control the disease. Here comes again the need for education especially on diet. Patients felt the deficit and they did not know what it is. If we teach them they will be more than happy to listen and change their food habits. Especially when they start to feel that their disease is under control, so they can live a normal life with diabetes without complications.

Barriers to self-management

The main barrier to self-management was that of the current situation of crises. Even if the patients wanted to practice proper management they sometimes could not. The situation affected the patient's attendance to clinics and the monthly check ups in general. The poor economical status forced the people to eat what ever was available in order to survive. In addition, they were not always able to afford the medications they were prescribed. People were under so much stress that they smoked more and felt too depressed to go out and exercise, if they could at all do it. The closures would not allow them to reach hospitals in case of emergency or serious complications. The number of deaths increased as a result of this, which made people more depressed, helpless and careless about themselves.

Most of the patients were living in big families; this might be a barrier to self-management because of the different needs of many people. The diabetes patient would get less attention and care. A lot of the participants did not receive any help from the members of their families in supplying the medications or preparation of proper food.

Most of the patients had some type of health insurance, but some did not have any. This is considered a barrier as well, for the patient had to pay for the doctor's consultation, laboratory tests and medications. This might affect the frequency of the doctor's visits and checking of blood sugar. The health insurance does not cover the expenses for blood-checking apparatus, so few of the patients had their apparatus at home. Most patients had to travel to the clinics in order to check their blood sugar, which made it difficult to monitor the blood sugar level all the time.

Some of the barriers are related to the patient himself, like breaking bad habits. Even with the absence of other barriers still some patients did not practice self-management. We need to look more in depth at how the patient feels about this and what could be done to help him to achieve proper self-management, and a way to motivate and empower him to change his habits and give up what he liked to do. Williamson identified the greatest contributors to the barriers for self-management as lack of time, lack of symptoms, lack of education (including follow up), poor self-esteem, lack of empowerment and misinformation from family, peers or others with diabetes (58). I found the same in my study. Patients mentioned lack of time as one of the barriers for self-management. During the focus group discussion, patients said that they do not know much about diabetes complications until they get them. The patients felt helpless and depressed, they were not motivated to work on their disease and try to keep it under control.

Empowerment is a process by which persons with diabetes are enabled to play an active role in taking shared responsibility for their care. In empowerment we help people with diabetes to develop knowledge, skills, attitudes and degree of self-awareness of their health related decisions.

There was a difference between the way health providers and people with diabetes defined diabetes education. Health workers considered giving information when the patient is sitting in front of them as patient's education. This could be the same as information never left them, because very little of this information reached the patient. Patients seemed most of the time to forget that the health worker said anything. Golland said that many doctors with their growing caseloads do not have time to give people with diabetes the attention they need. Too often they tell the patients to lose weight or get more exercise without ensuring that real lifestyle changes are taking place (53). Well, the patients in the Palestinian clinics admitted that they would remember what the nurse told them about taking the pill on time, so they hurry and swallow it. But is this the only type of education we are offering our Palestinian people, and how effective it could be?

It is important to investigate how diabetes education can empower people with diabetes in the Palestinian context, so we can reach the main goal, which is living a better life with diabetes. We should look first at what kind of education should be used, what is the most effective way of giving information to the patient, and at the same time ensure that the patient himself wants to use this information and would at the end implement it in his daily life.

Ridgeway conducted a control study to determine the efficacy and ease of administration of education/ behaviour modification classes, provided by a nurse and a dietician for improving control of diabetes. The results showed that the education/ behaviour modification program was worthwhile, and was even easy to administer. Patient's showed improvement in mean fasting blood sugar, cholesterol level, body weight and their knowledge about diabetes was improved as well (105). In my study some of the patients talked about their own experience, when they applied what the health workers advised them to do concerning diabetes self-management. They said they developed improvement in their health and they are now controlling their disease better. No control group was used in my study, so I do not have results showing the effect of certain educational intervention on the level of diabetes control. But this could be an idea for further studies in the field of diabetes education and self-management.

In the current situation, the need for a more effective way of education is considered urgent. Since people are living in a critical time, where they see death all around. This is increasing their depression and stress rate, so they are not looking more than one step ahead. I think it is a very difficult job nowadays to work on the minds of these people and try to unlock them. But it is possible, and it has been proven before that the use of empowerment has a life long effect. When the patient will know why he is taking this pill and why he should increase his exercise, and why he should throw away his cigarette package. Anderson found that shifting from the acute-care/ compliance-focused paradigm to an empowerment/ collaborative approach requires a new version of diabetes education and new definition and enactment of the roles of educators and patients. Our practice is always an expression of our vision. Therefore, if our vision is transformed, our practice will most likely change to reflect our vision. Eliminating the concepts of adherence and compliance makes it possible for our patients to discover and actualise their personal responsibility for their diabetes self-management, and will help us to practice diabetes education as win-win collaboration among equals (45).

Allowing the patient to talk and carrying out a dialogue brings out the best of the two sides, the health worker and the patient. But this needs time, patience, understanding and follow up. This could be done when organising the work at the health clinics and hospitals. A better distribution of daily tasks for the nurse and the doctor will help to find more time to give to the patient. A space between posing a question and waiting for an answer should be given. It would give the patient time to think about a subject like diet for example, from all aspects. It would be a good idea if we asked the patient to bring a new question with him in the next visit. This will motivate him and he will be looking for subjects to learn more about. People with diabetes should know that they are the ones who should provide a good life for themselves, and no one else, and that they are the best ones to make their own decisions. At the same time, people with diabetes do not need to know every thing written in books about diabetes. The type of education needed differs from one patient to another, according to his own individual needs. The patient can put his concern in front of the educator and they can discuss it together. I believe talking is the

best blessing we have, if we know how to use it properly. Jervell said; in our teaching we should use methods that emphasise independence, let the wishes of people with diabetes decide what the teaching sessions should be about (7).

It will take a lot of efforts to apply this way of education in the health system, especially now. But since it is started, we will see the results of the efforts we put in, by indicators, like healthier diabetics who really have control over their lives, with better management and compliance rate. All of this will lead to least complications. Both sides will be much happier. The health workers will always get a positive feedback from the patients, this will help them to increase their self-esteem and they will grow to love their jobs more and more. And by time diabetes education and application of empowerment will become the most important part of their daily care for people with diabetes.

But still, Peyrot found that even research indicates that education improves patient self-management, which in turn improves glycemic control and health status. Yet, there is relatively little information on what type of education produce what particular benefits for which type of patient (49).

Discussion of the qualitative findings

As a result of the two focus group discussions, it was shown that the type of health insurance that the diabetes patient had, determined which clinic he attended. The refugee patients had the UNRWA health insurance. They usually go to the health clinics which belong to the UNRWA, like Al-Amaari clinic, where the treatment is free of charge in addition to laboratory tests, and medications. The patient who got the government health insurance, usually attend the government health clinics like Al-Berieh health clinic, where they did not pay for the consultation and tests, but they pay for a small part of the medications fees.

Some of the patients showed their satisfaction with their clinic and its staff. At the same time, they mentioned that it used to be better before, with the educational efforts that were offered, but they are not found right now.

The bad economical status is a big concern to most of the diabetes patients, which affected the treatment of diabetes, buying the medications, buying the blood sugar check apparatus, and applying the proper means of self-management.

The duration of giving advice or education to the patients depends on the time the health personal needs to perform the routine tests, so the education is done during the test procedure.

Most of the diabetes patients agreed on the importance of diabetes education. They gave several reasons for that. Still they all know that it will help them achieve control over the disease.

The patients had different opinions concerning different types of food, in order to control their blood sugar by diet. They focused on sweets and carbohydrates as the main types of food that the diabetes patient should stay away from.

Lack of self-control and illiteracy are considered one of the main reasons why the diabetic patients do not follow the advice given to them.

Most of the patients cannot follow a correct diabetes diet because they cannot stop eating what they like to eat. They also complain of the absence of other alternatives.

The diabetes patients consider taking the oral diabetes medications and the insulin on time, as the only treatment for diabetes.

The diabetes patients consider stress from the current political situations, as the main reason for developing diabetes, and as the main barrier of proper self-management. For example eating the proper food for diabetes or practising physical exercise.

The only physical activity that the diabetes patients can do and afford to do is walking. But still the difficult situation prevented them from practising it sometimes.

Some patients had depression from the unchangeable condition, and they have fear of the unavoidable serious complications of diabetes.

The diabetes patients had different feelings and perceptions about having diabetes. Some were adapting well to it, and some were complaining that it is out of control, and that they are tired from it, in addition to being tired physically, and not being able to perform the daily tasks.

The qualitative findings of this study were complementary to the quantitative findings. The qualitative results were sometimes supporting the quantitative ones. They also helped in explaining and analysing the other quantitative results.

Finding regarding prevention and treatment

Some of the findings of my research were more interesting than the others. But still, the entire findings have described the situation of diabetes health education, and people with diabetes in the three clinics visited.

Some of the findings could be used for prevention of diabetes. Especially those that highlighted the practices in the daily life of people with diabetes, which are considered as risk factors to develop diabetes and to develop complications for people whom already had diabetes. Even all the participants already had diabetes but the findings could be used for the three stages of prevention.

1- Primary prevention: to reduce the incidence of the disease, we can work on the way we organise our societies and educate the general population. Starting from the beginning by improving nutrition for girls and fertile women and improving pregnancy care. Looking through my findings, we got a picture of the social habits like smoking, walking, eating and obesity. They were not encouraging. The incorrect idea of healthy food, the way of dealing with stress and putting exercise as a part of the daily activity are issues to start working on, in order to modify the behaviour and/ or the lifestyle of high-risk individuals. Here comes the role of health education to help people to change patterns of nutrition, physical activity, reduction of smoking and obesity.

2- Secondary prevention: aims to reverse the disease, stressing the importance of self-management. A big part of my study was concentrated on describing means of self-management that diabetes patients practised, and what they do to stop the progression of the disease. Starting with screening to help early detection of the diabetes. This is related to seeking medical help and doctor's visits, especially for individuals with one or more risk factors. And how the patient would manage with his disease afterwards.

3- Tertiary prevention: to prevent or delay the development of complications of diabetes. This starts with diabetes education and what do the health workers teach patients. What are the approaches they use to give information to the patients. The findings of this study clarify these points, and we can detect the weak points in diabetes education and work to improve them. From the patient's side, self-management is the important element to prevent or delay complication. How does the Palestinian diabetes patient manage his disease related to diet, general check ups, medications, physical activity, obesity and cessation of smoking, all of this is described in this study. The findings are interesting and could be used to as a guide line to start with the direct patient's care, including improving education, better metabolic control, screening and early treatment of complications.

The use of the studies findings in treatment of diabetes could be started by diabetes education. Education is just as important as treatment, and the lack of education is just as

serious as the lack of drugs and food. Diabetes education should not become as an element in the treatment; it is the treatment.

The findings of the study showed the use of education to improve compliance, but we want it to develop empowerment. The treatment is also a part of the tertiary prevention. I mentioned in some parts of the study the percentage of patients who are treated by oral medications and insulin for diabetes. As well as the percentage of these patients who are using only the medications for treatment without practising any of the means of self-management like proper diet and physical exercise, even though they are important elements to treat diabetes. The patients are not aware of this. This became apparent during the individualised interviews with them and through the focus group discussions. They need to know the priorities in treatment of diabetes, and how to apply proper self-management in their lives. They need to know how to cope with stress. And the good way to establish this goal is to empower the patient.

The diabetes patients interviewed gave a list of needs they had concerning diabetes education and diabetes care in their clinics. Their first emphasis was on giving more lectures and information. This was a good point to start with, since the patients himself, is accepting and ready to learn. They also added some more suggestions, which I have mentioned before. This information can be helpful, if the staff tries to use it for the benefit of the patient. It will bring a lot of changes in diabetes care in Palestine, since they are coming from the patient himself, and that is the first step of empowerment to put the patient in a position of the decision maker.

Chapter eight

Conclusion

People with diabetes in Ramallah are not receiving all what can be offered to them of diabetes education. The amount of information given to them is not sufficient to meet their needs as diabetics.

People with diabetes agreed on the importance of diabetes education and do recognise the deficit in diabetes education in the clinics they are attending. They are asking for improvement in the educational sessions, and in the medical facilities. It is well known that the more we learn the more we wanted to learn. So there is still a lot that could be offered for the people with diabetes.

The current situation of stress and conflict is affecting people with diabetes concerning the disease and its complications. It is inhibiting the practice of proper self-management, and increases the depression rate.

A big concern of people with diabetes is diet. They are not able to find alternative foods, and they are complaining of the difficulty in breaking the old dietary habits.

The results concerning patient's knowledge and areas they wanted to know more about in diabetes were mostly the same in the three clinics, with some minor differences. But this information could be used as a guide for diabetes education in each clinic, in order to meet the patient's needs.

The health workers wanted to improve diabetes care and especially diabetes education. They blamed the deficit on the current situation, the unavailability of proper medical facilities and on the diabetes patient himself. But are all of these considered a persuasive explanation for not performing diabetes education. The health staff still manage to reach to the clinics and meet people with diabetes, that means that they can work more on some

of the barriers and provide better diabetes care and education because the patients are in a big need for every help, especially now.

People with diabetes are still not aware of the importance of diabetes self-management. They consider drug treatment sufficient to control diabetes.

Due to an absence of policy to place diabetes education as a part of the daily diabetes care in the clinics, such education is depending on the health workers. Their mood and how much time they have for each patient are decisive. Diabetes education was found to be unfocused, non-specific and unsystematized. But every one working in the health sector has his role in patients' education. It is a team-work and every body should participate in it. We should help people with diabetes to distinguish between right and wrong. They might not understand every thing we say but they do trust and believe in the health system. And as health workers we should keep this trust and work on it in order to achieve a better care for people with diabetes.

Here comes the big question; if the plans were set, could they be implemented while the Palestinians are now suffering under war? Or do we have to wait till...

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