

جامعة القدس



كلية الصحة العامة

School of Public Health

القدس - فلسطين

وزارة الصحة



---

Deanship of Graduate Studies  
Al-Quds University

**Knowledge, Attitude and Practice of Foot Care  
Among Diabetic Patients at UNRWA Health Centers  
in Gaza Strip**

Saeed Mohammed Shaheen

M.P.H. Thesis

Jerusalem – Palestine

May - 2007

**Knowledge, Attitude and Practice of Foot Care Among  
Diabetic Patients at UNRWA Health Centers  
in Gaza Strip**

Prepared by:  
Saeed Mohammed Shaheen  
B.Sc. Nursing: Islamic University of Gaza-Palestine

Supervisors  
Dr. Suzanne Shashaa, Assistant Dean of the School of Public  
Health , Al-Quds University  
Dr. Ayoub El-Alem, Chief field health program of UNRWA

A thesis Submitted in Partial fulfillment of requirements for  
the degree of Master of Public Health

May - 2007



**Al-Quds University**  
**Deanship of Graduate Studies**  
**School of Public Health**

### **Thesis Approval**

#### **Knowledge, Attitude and Practice of Foot Care Among Diabetic Patients at UNRWA Health Centers in Gaza Strip**

Prepared by: Saeed Mohammed Shaheen  
Registration No:

Supervisors: Dr. Suzanne Shashaa  
Dr. Ayoub El-Alem

Master thesis submitted and accepted, Date  
The names and signatures of the examining committee members are follow:

1.Head of committee: Dr. Suzanne Shashaa	Signature .....
2.Internal Examiner : Dr. Yehia Abed	Signature .....
3.External Examiner: Dr. Yousif El-Jeesh	Signature .....

Jerusalem – Palestine

May - 2007

## Dedication

I dedicate this simple work to ...

To the spirit of my father,  
To my mother,  
To my wife, sons and daughters,  
To my brothers and sisters,

To all those who gave me every opportunity of success.

Saeed Mohammed Shaheen

## **Declaration**

I certify that this entire thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed .....

Saeed Mohammed Shaheen

Date: May - 2007

## Acknowledgement

Its my great pleasure to express my sincere gratitude to all people who helped me to accomplish this work.

I am greatly indebted to my academic supervisors for their kind supervision and continuous support and encouragement, without their assistant this work could not be done:

Dr. Suzanne Shasha'a, Assistant Dean of the School of Public Health, Al-Quds University.  
Dr. Ayoub El-Alem, Chief Field Health Program of UNRWA.

I would like to thank deeply:

Dr. Yehia Abed, Associated Professor, Al-Quds university, he is unforgettable lecturer who teach us a lot during the study courses and his advices were very valuable.

Dr. Talal El-Sharif, my sincere friend, who made all efforts to help me accomplish this study.

My great gratitude to the lecturers at the school of public heath who deserve all respect for their discrete work:

Dr. Bassam Abo-Hamad  
Dr. Abed El-Azeez Thabet  
Mr. Sa'di Abo-Awad

I'm grateful to all staff and personnel of the school of public heath for their generous assistance that offered to me during my study.

I would like to thank deeply the Ahli Arab Hospital administration team, and the director Ms. Suhila Tarazi, for their kind help that offered me the chance to complete my study.

I wish to thanks a lot the UNRWA medical staff who assisted me during the data collection:

Dr. Ali Aljeesh, and  
The Medical staff at UNRWA primary health care centers in the middle area of Gaza Strip.

I'm grateful to all people and friends who provided me with all assistant and support needed to accomplish this study, thanks for:

Dr. Kamel El-Jadba	Dr. Sameer khail
Mr. Mohammed Tulaib	Mr. Ismail Abu-Eltarabish
Mr. Mohammed Al-Magadma	Mr. Rafik Shalail
Mr. Yehia Abo-Msameh	Mr. Ismail Lulad
Mr. Mahammed Heji	

The Researcher  
Saeed Shaheen

## **Abstract**

Diabetes is a chronic condition affects large segment of population through out the world and can cause a number of serious complications. Problems with the feet are one of the most common. Foot problems are a global problem resulting in major economic consequences for the patients and their families. Self-reported preventive practices have been linked with decreased risk for lower-extremity amputations.

The aim of this study is to investigate the level of knowledge, attitude and practices of diabetic patients about foot care at UNRWA primary health clinics of the middle area of Gaza Strip. A descriptive analytic cross sectional study was conducted for this purpose. A sample of 300 type 2 diabetic patients both males and females over 18 years old were randomly selected using systematic sampling method. Data were collected through face to face questionnaire.

The results show that the level of participants knowledge and practice of foot-self care was less than 60 % while the level of attitude toward foot-self care was more than 60%. The results of the study show statistical significance relationship between participant awareness (knowledge, attitude and Practice) about foot care and their, gender, age, marital status, educational level, work status, type of work, family income per month, number of family member, the duration of diabetes and the presence of previous foot complications as independent variables.

Participants level of knowledge about foot care: Males are having more knowledge than Females, married participants have more knowledge than widowed, employed participants are having more knowledge than unemployed ones. There are positive relationship between participant level of knowledge about foot care and their level of education, number of their families members and the duration of diabetes.

Participants level of attitude toward foot care: young diabetics show more positive attitude than old ones, married participants more than widowed and diabetics who do not have foot complications are having more positive attitude than those who have foot complications. there are positive relationship between participants level of attitude toward foot care and their level of education as well their families income per month. There are negative relationship between participants level of attitude toward foot care and the number of their families members as well the duration of diabetes.

Participants level of foot care practice: there are positive relationship between participants level of daily foot care practice and their level of education as well their families income per month.

Results show that,11 % of participants were having foot problems (ulcers or amputations). 61% of participants barriers to foot-self care were related to knowledge deficit about foot care wile 39% of the barriers were related to participants themselves, like participants do not have the time to practice foot care or they cannot do these practices alone.

The patient himself plays the crucial role in the prevention of diabetic foot disease and therefore education on foot care must provided to all people with diabetes until they can describe foot care practices and demonstrate these practices into their daily life. more attention must provided to females, old diabetics and poor ones

## ملخص الدراسة

مرض السكري يعاني منه الكثير من الناس في مختلف أنحاء العالم ويسبب مضاعفات كثيرة. من أهم هذه المضاعفات الأضرار التي تصيب القدمين والتي ينتج عنها تقرح القدم أو بتر القدم. تعتبر مضاعفات القدمين مشكلة عالمية تتسبب في أضرار اقتصادية كبيرة لكل من المريض وأسرته ومجتمعه الذي يعيش فيه. العناية اليومية بالقدمين تعتبر وسيلة مهمة وناجحة للحد من هذه الأضرار.

الهدف من هذه الدراسة هو التعرف على مستوى المعرفة والميول والممارسة لدى مرضى السكري بالنسبة للعناية بالقدمين في عيادات الوكالة في المحافظة الوسطى من قطاع غزة. هذه الدراسة هي دراسة وصفية تحليلية مقطعية، أجريت على 300 مريض من النوع الثاني من مرضى السكري من كلا الجنسين والمسجلين في العيادات تم اختيارهم بطريقة العينة العشوائية المنتظمة. وقد جمعت المعلومات اللازمة من ملفات المرضى ومن الاستبيانات التي تم تعبئتها من قبل الباحث من خلال مقابلات أجريت مع المرضى في العيادات.

وقد وجد أن مستوى كلا من المعرفة والممارسة لدى المشاركين بالنسبة للعناية بالقدمين اقل من 60%، وميول المشاركين للعناية بأقدامهم أعلى من 60%. وتبين من الدراسة وجود علاقة ذات دلالة إحصائية بين وعي المشاركين بالنسبة للعناية بالقدمين ومتغير كلا من العمر والجنس والحالة الشخصية ومستوى التعليم والعمل ومستوى الدخل الشهري للأسرة وعدد أفراد الأسرة للمشاركين ومدة المرض وكذلك وجود أو عدم وجود مضاعفات سابقة في القدمين.

مستوى المعرفة لدى المشاركين بالنسبة للعناية بالقدمين: أظهرت الدراسة أن الذكور لديهم معرفة بالعناية بالقدمين أعلى من الإناث، والمتزوجين لديهم معرفة أعلى من الأراامل، كذلك المرضى العاملين لديهم معرفة أعلى من الذين لا يعملون. كما تبين من نتائج الدراسة وجود علاقة موجبة بين مستوى المعرفة لدى المشاركين بالنسبة للعناية بالقدمين ومستوى التعليم وعدد أفراد الأسرة وكذلك مدة المرض لدى المشاركين.

ميول المشاركين بالنسبة للعناية بالقدمين: أظهرت الدراسة أن المرضى الذين تقل أعمارهم عن 45 سنة لديهم ميول للعناية بالقدمين أعلى من المرضى الذين تزيد أعمارهم عن 60 سنة، والمتزوجين لديهم ميول أعلى من الأراامل، كما أن المشاركين الذين لا يعانون من مضاعفات القدمين لديهم ميول أعلى من الذين يعانون من مضاعفات القدمين. كما تبين من الدراسة وجود علاقة موجبة بين ميول



المشاركين بالنسبة للعناية بالقدمين ومستوى التعليم وكذلك مستوى دخل العائلة الشهري لدى المشاركين. كما تبين وجود علاقة سالبة بين ميول المشاركين بالنسبة للعناية بالقدمين وعدد أفراد الأسرة وكذلك مدة المرض لدى المشاركين. مستوى ممارسة العناية بالقدمين لدى المشاركين: أظهرت الدراسة وجود علاقة موجبة بين ممارسة المشاركين للعناية اليومية بالقدمين و مستوى التعليم وكذلك مستوى دخل الأسرة الشهري لدى المشاركين في الدراسة.

كما أظهرت النتائج أن 11% من المشاركين يعانون من مشاكل في القدمين. أما بالنسبة للمعيقات التي تمنع المشاركين من العناية بالقدمين فقد تبين أن 61% من هذه المعوقات ترجع إلى عدم المعرفة بكيفية العناية بالقدمين, وأن 39% من المعوقات ترجع إلى المشاركين أنفسهم مثل: ليس لديهم الوقت الكافي للقيام بذلك أو أنهم لا يجدون من يساعدهم.

أن الدور الأكبر للوقاية من مضاعفات القدمين يقع على مريض السكر نفسه, لذلك يجب عليه أن يتعلم الطرق الصحيحة للعناية بالقدمين وممارسة هذه الطرق في حياته اليومية. كما أن تعلم هذه الطرق يجب أن توفر لجميع مرضى السكري وخاصة الإناث وكبار السن والفقراء.

## List of contents

	<b>Chapter (1): Introduction</b>	1
1.1.	Justification of the study	4
1.2.	Objectives	5
1.3.	Research questions	6
1.4.	Research hypothesis	6
1.5.	Demographic characteristics of Gaza Strip	6
1.5.1.	Geography of Gaza Strip	6
1.5.2.	Population	7
1.5.3.	Education	7
1.5.4.	Palestinian economy	8
1.6.	Health services in Palestine	8
1.6.1.	Hospitals	9
1.6.2.	Primary Health care (PHC) centers	9
1.6.3.	UNRWA health services	9
1.7.	Non-communicable diseases in Palestine	10
	<b>Chapter (2): Literature review</b>	12
2.1.	Definition of diabetes mellitus	12
2.2.	Classification of diabetes	13
2.2.1.	Type 1 diabetes mellitus	13
2.2.2.	Type 2 diabetes mellitus	13
2.2.3.	Other specific types	14
2.2.4.	Gestational diabetes mellitus	14
2.3.	Epidemiological picture of diabetes mellitus	15
2.4.	Diabetes mellitus in Palestine	15
2.5.	Complications of diabetes	17
2.5.1.	Diabetic foot complications	17
2.5.2.	Lower extremity amputation	19
2.6.	Foot care in patients with diabetes mellitus	20
2.7.	Magnitude of the problem	23
2.7.1.	Globally	25
2.7.2.	Regionally	41
2.7.3.	Locally	44
	<b>Chapter (3): Conceptual framework</b>	46
3.1.	Introduction	47
3.2.	Knowledge	47
3.3.	Attitude	48
3.4.	Practice	49
3.5.	Socio-demographic factors	49
3.6.	Duration of diabetes	50
3.7.	Foot complications	51

	<b>Chapter (4): Methodology</b> .....	52
4.1.	Study design .....	52
4.2	Study population .....	52
4.3.	Eligibility criteria .....	53
4.3.1.	Inclusion criteria .....	53
4.3.2.	Exclusion criteria .....	53
4.4.	Sample size .....	53
4.5.	Sampling process .....	54
4.6.	Setting of the study .....	54
4.7.	Ethical consideration .....	54
4.8.	Research instrument .....	55
4.8.1.	Questionnaire design .....	55
4.8.2.	Validity of the questionnaire .....	55
4.9.	Pilot study .....	56
4.10.	Data collection .....	56
4.11.	Response rate .....	56
4.12.	Statistical analysis .....	57
	<b>Chapter (5): Results</b> .....	58
5.1.	Characteristics of population .....	59
5.1.1.	Socio-demographic characteristics .....	59
5.1.2.	Socio-economic characteristics .....	61
5.1.3.	Medical characteristics .....	63
5.2.	Participants knowledge, attitude and practice of foot care .....	65
5.2.1.	Participants knowledge about foot care .....	67
5.2.2.	Participants daily foot care practices .....	69
5.3.	Role of participants socio-demographic variables on their knowledge, attitude and practice of foot care .....	69
5.3.1.	Gender role .....	69
5.3.2.	Age role .....	71
5.3.3.	Role of marital status .....	73
5.3.4.	Role of educational level .....	75
5.3.5.	Role of work status .....	79
5.3.6.	Role of type of work .....	80
5.3.7.	Role of family income .....	82
5.3.8.	Role of number of family member .....	85
5.4.	Effect of duration of diabetes .....	88
5.5.	Effect of foot complication .....	91
5.6.	Participants barriers of foot care .....	92
5.7.	Foot care instructions at UNRWA clinics from diabetics point of view .....	94
	<b>Chapter (6): Conclusion and Recommendations</b> .....	95
	Conclusion .....	95
	Recommendations .....	97
	Suggestions for further researches .....	98
	References .....	99
	Annexes .....	105

## List of Tables

Table 5.1:	Proportion of subjects according to their location .....	53
Table 5.2:	Socio-demographic characteristics of participants .....	60
Table 5.3:	Socio- economic characteristics of participants .....	62
Table 5.4:	Medical characteristics of participants .....	64
Table 5.5:	Participants level of knowledge, attitude and practice about foot care .....	65
Table 5.6:	Percentage of participants who said they know the foot care practices .....	67
Table 5.7:	Number of foot care Practices known to the participants .....	68
Table 5.8:	Percentage of participants who said they practiced daily foot care .....	69
Table 5.9:	Role of participants gender on their level of knowledge, attitude and practice of foot care .....	70
Table 5.10:	Role of participants age on their knowledge, attitude and practice of foot care .....	72
Table 5.11:	Differences between participants attitude toward foot care related to their age groups .....	72
Table 5.12:	Role of participants marital status on their level of knowledge, attitude and practice of foot care .....	74
Table 5.13:	Role of participants education on their knowledge, attitude and practice of foot care .....	75
Table 5.14:	Differences between participants knowledge about foot care related to their educational level .....	76
Table 5.15:	Differences between participants attitude toward foot care related to their educational level .....	76
Table 5.16:	Differences between participants practice of foot care related to their educational level .....	77
Table 5.17:	Differences between participants awareness about foot care related to their educational level .....	78
Table 5.18:	Role of participants work status on their level of knowledge, attitude and practice of foot care .....	79

Table 5.19:	Role of participants type of work on their level of knowledge, attitude and practice of foot care .....	80
Table 5.20:	Differences between participants awareness about foot care related to their type of work .....	81
Table 5.21:	Differences between participants practice of foot care related to their type of work .....	82
Table 5.22:	Role of participants family income on their level of knowledge, attitude and practice of foot care .....	83
Table 5.23:	Differences between participants attitude toward foot care related to their families income .....	83
Table 5.24:	Differences between participants practice of foot care related to their families income .....	84
Table 5.25:	Role of participants number of family members on their level of knowledge, attitude and practice of foot care .....	85
Table 5.26:	Differences between participants knowledge about foot care related to the number of their families members .....	86
Table 5.27:	Differences between participants attitude toward foot care related to the number of their families members .....	86
Table 5.28:	Differences between participants awareness about foot care related to the number of their families members .....	87
Table 5.29:	Relationship between duration of diabetes and participants level of knowledge, attitude and practice of foot care .....	88
Table 5.30:	Differences in participants knowledge about foot care related to the duration of diabetes .....	89
Table 5.31:	Differences in participants attitude of foot care related to the duration of diabetes .....	90
Table 5.32:	Relationship between foot complications and participants level of knowledge, attitude and practice of foot care .....	91
Table 5.33:	Participants barriers of foot care .....	92
Table 5.34:	Foot care instructions at UNRWA clinics from diabetics Point of view .....	94

## Definitions

**Attitude:** Attitude is an emotion that all people get when they have other emotions. Attitudes are positive, negative or neutral views of an attitude object like; person, behavior or event (Wikipedia, 2007).

**Diabetes mellitus:** is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels (ADA,1997).

**Gestational diabetes mellitus:** is an operational classification rather than pathophysiologic condition, identifying women who develop diabetes mellitus during gestation. Women with diabetes mellitus before pregnancy are said to have "pregestational diabetes" and are not included in this group. Women who develop type 1 diabetes mellitus during pregnancy and women with undiagnosed asymptomatic type 2 diabetes mellitus that is discovered during pregnancy are classified with gestational diabetes mellitus (ADA,1997).

**Knowledge:** is seen as a dynamic system, organized into certain structures forming an internal relationship between man and his environment, and Learning is a change in this relationship occurring as a result of the individual interpretations often within the knowledge system (Brown, 1990).

**Other Specific Types of diabetes mellitus:** a group of DM includes types of diabetes mellitus of various etiologies as: persons with genetic defects of beta-cell function (maturity-onset diabetes in youth, MODY), or with defect of insulin action; persons with diseases of exocrine pancreas, such as pancreatitis; persons with dysfunction associated with other endocrinopathies; and persons with pancreatic dysfunction caused by drugs, chemicals or infections (ADA,1997).

**Practice:** Practice is to do or to perform habitually or customarily or repeatedly in order to acquire a skill (Wikipedia, 2007)

**Type 1 diabetes mellitus:** is formerly called type I, Insulin Dependent Diabetes Mellitus (IDDM) or juvenile diabetes, characterized by beta cell destruction caused by autoimmune process, usually leading to absolute insulin deficiency. Over 95 percent of persons with type I diabetes mellitus develop the disease before the age of 25, with an equal incidence of both sexes and an increased prevalence in the white population (ADA,1997).

**Type 2 diabetes mellitus:** is formerly called type II, None Insulin Dependent Diabetes Mellitus (NIDDM) or adult-onset Diabetes. This type is characterized by insulin resistance in peripheral tissue and deficiency in insulin secretion. This is the most common form of diabetes mellitus and is highly associated with a family history of diabetes, older age, obesity and lack of exercise (ADA,1997).

### List of abbreviations

AAH	Ahli Arab Hospital
ADA	American Diabetic Association
BC	Before crest
BRFSS	Behavioral Risk Factor Surveillance System
CI	Confidence Interval
DM	Diabetes Mellitus
GDM	Gestational Diabetes Mellitus
GDP	Gross Domestic Production
GNP	Gross National Production
GS	Gaza Strip
HRQOL	Health Related Quality Of Life
IDDM	Insulin Dependent Diabetes Mellitus
LSD	Less Significance Difference
MODY	Maturity Onset Diabetes in Youth
MOH	Ministry Of Health
NCDs	Non-Communicable Diseases
NGOs	Non-Governmental Organizations
NIDDM	Non- Insulin Dependent Diabetes Mellitus
OR	Odds Ratio
PCBs	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PNA	Palestinian National Authority

RCTs	Randomized Controlled Trails
UK	United Kingdom
UKPDS	United Kingdom Prospective Diabetes Study group
UNRWA	United Nation Relieve and Work Agency
USA	United States of America
WB	West Bank
WHO	World Health Organization

## **Chapter (1)**

### **Introduction**