

# A Descriptive Study to Assess the Knowledge Regarding Self Administration of Insulin Injection among Diabetes Mellitus Patients in Diabetic Clinic of Primary Health Centre at Alnamas

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## Abstract

Worldwide diabetes is widely recognized as one of the leading causes of death and disability. According to the latest WHO data published in April 2011 Diabetes Mellitus Deaths in Saudi Arabia reached 5,870 or 6.74% of total deaths. The impact of the disease on the patient, family and the community psychologically and physically is staggering. So I selected this study, to Assess The knowledge regarding self administration of insulin injection among diabetes mellitus patients in diabetic clinic of primary health centre, with the objectives to assess the knowledge of diabetes mellitus patients regarding self-administration of insulin injection and to find the association between the knowledge and selected demographic variables. The hypothesis will be tested at 0.05 level of significance. There will be significant association between levels of knowledge with selected demographic variables. The conceptual framework for this study was based on Orem's self-care model each individual has an innate ability to care for oneself, it is a theoretical model which values individual responsibility and believes in health education as key aspect of nursing intervention. This study is aimed at assessing the knowledge on self-administration of insulin injection among diabetes mellitus patients. The study was conducted in diabetes mellitus patient in diabetic clinic of Primary Health Centre, Alnamas. 20 diabetes mellitus patient on insulin therapy were selected by convenient sampling method. Researcher's convenience and familiarity with settings were added reason. The tools used for data collection is a structured questionnaire to assess the knowledge of the diabetes mellitus patients regarding self-administration of insulin injection. The study reveals that 12 participants (60%) are having good knowledge regarding self-administration of insulin injection, 6 participants (30%) are having average knowledge regarding self-administration of insulin injection and 2 participants (10%) are having poor knowledge regarding self-administration of insulin injection.

**Keywords:** Knowledge; Self administration; Insulin injection; Diabetes mellitus; Diabetic clinic

## Introduction

"A wonderful affection not very frequent among men, being a melting down of the flesh and limbs into urine...life is short, disgusting and painful, thirst unquenchable, death is inevitable."Aretus the Greek physician thus described the clinical features of Diabetes Mellitus, almost 4000 years ago. Diabetes Mellitus is an endocrine disorder. Characterized by hyperglycemia that is, high blood sugar levels. This is caused due to a relative or absolute insulin deficiency, which is a hormone produced by the pancreas.

The International Diabetes Federation estimated that the worldwide prevalence of diabetes mellitus in the year 2003 is 194 million. The World Health Organization (WHO) has projected that this number would increase to 300 million by the year 2025.

The prevalence of diabetes is high among the Saudi population and represents a major clinical and public health problem, 23.7% of adult Saudis in the age range of 30-70 years have diabetes and 14.1% have impaired fasting glucose also prevalence of DM was significantly higher in the urban population (males 12% and females 14%) than in the rural population (males 7% and females 7.7%). Recent research in Saudi Arabia show that the number of patients with Diabetes Mellitus

are increasing drastically. As a nation we have reached a point where it is considered an epidemic.

A recent national population based study conducted in King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia says that, a total of 17232 Saudi subjects were selected in the study and 16917 participated (98.2% response rate). Four thousand and four subjects (23.7%), out of 16917 were diagnosed to have DM. Thus, the overall prevalence of DM obtained from this study is 23.7% in KSA. The prevalence in males and females were 26.2% and 21.5% ( $p < 0.00001$ ). The calculated age-adjusted prevalence for Saudi population for the year 2000 is 21.9%. Diabetes mellitus was more prevalent among Saudis living in urban areas of 25.5% compared to rural Saudis of 19.5% ( $p < 0.00001$ ). Despite the readily available access to healthcare facilities in KSA, a large number of diabetics 1116 (27.9%) were unaware of having DM [1-5].

The Diabetic patients who are on Insulin need to be knowledgeable regarding the disease and Insulin Therapy and also they must have a positive attitude towards self-administration of insulin injection to overcome the barriers of insulin injection.

Therefore, the researcher is keenly interested to undertake this study. This will help in avoiding complications besides improving quality of life of the patients

## Statement of the Problem

A descriptive study to assess the knowledge regarding self administration of insulin injection among diabetes mellitus patients in diabetic clinic of primary health centre at Alnamas.

## Objectives of the Study

- 1) To assess the knowledge of diabetes mellitus patients regarding self-administration of insulin injection.
- 2) To find the association between the knowledge and selected demographic variables of diabetes mellitus patients towards self-administration of insulin injection.

## Hypothesis

The hypothesis will be tested at 0.05 level of significance.

There will be significant association between levels of knowledge with selected demographic variables.

## Conceptual Framework

The conceptual framework for this study was based on Orem's self-care model as cited in potter this conceptual framework identifies and defines the factor or phenomena of work in a nursing situation and describes their relationships. Each individual has an innate ability to care for oneself. It is a theoretical model which values individual responsibility and believes in health education as key aspect of nursing intervention. This study is aimed at assessing the knowledge on self-administration of insulin injection among diabetes mellitus patients. This study will focus on to find the association if any between knowledge and attitude with selected demographic. Variables and so also will find association if any between the knowledge and attitudes of diabetic patients regarding self-administration [6-10].

## Research approach

The research approach used for this study was a descriptive approach.

## Research design

Descriptive research design was used for the study.

Descriptive design is a design used to identify phenomenon of interest, ideality variables with in the phenomenon, develop conceptual and operational definitions of variables and desirable variables.

## Variables

Variables are qualities, properties or characteristics of persons things or situation that change or vary.

## Research variables

Knowledge of diabetes mellitus patients regarding self-administration of insulin injection.

## Demographic variables

Age, Gender, Education of the participant, occupation of the participant, Religion, Marital status, Family income per-month,

duration since diagnosis of Diabetes Mellitus, actual number of years on insulin therapy.

## Setting of the study

The study was conducted in diabetes mellitus patient in diabetic clinic of Primary Health Centre, Alnamas. 20 diabetes mellitus patient on insulin therapy were selected for this study. The diabetes mellitus patients were selected by convenient sampling method. This setting was selected because of the availability of participants and feasibility of conducting the study. Researcher's convenience and familiarity with settings were added reason [11-15].

## Population

The target population for this study is diabetes mellitus patients who are in insulin therapy and between the age of 40 to 70 years in diabetic clinic of Primary Health Centre, Alnamas.

## Sample

Sample consisted of twenty diabetes mellitus patient in diabetic clinic of Primary Health Centre, Alnamas.

## Sampling technique

Non probability sampling technique was considered appropriate for this study.

The convenience sampling technique is a type of Non probability sampling, which was found to be appropriate for this study.

## Criteria for sample selection

### Inclusion criteria

Patients who are diagnosed with diabetes mellitus in diabetic clinic of Primary Health Centre, Alnamas.

Those who are in the age of 40 to 70 years.

Patients who are on insulin therapy.

Both male and female are included.

### Exclusion criteria

The diabetes mellitus patients who are not willing to participate in the study.

Diabetic patients who are oral hypoglycemic agents.

Diabetic patients who on intravenous insulin therapy.

## Research tool and technique

Based on the objectives of the study a structured questionnaire was developed to assess the knowledge of the diabetes mellitus patients regarding self-administration of insulin injection.

## Description of the tool

The tool used for the study includes two section that is section I and section II.

**Section I:** Section I had items related to demographic data consists of Age, Gender, Education of the participant, occupation of the participant, Religion, Marital status, Family income per-month,

Duration since diagnosis of Diabetes Mellitus, Actual number of years on insulin therapy.

**Section II:** Section II consists of 15 statement regarding self-administration of insulin injection and is divided into 2 main areas

Part A: Statement related to General information regarding insulin therapy.

Part B: Statement related to self-administration of insulin injection.

Scoring Procedure

The items were multiple choice type. Total score 15. Each correct response carry one score and incorrect response carry zero score

Between (12-15 Score) 80 and 100%-Good

Between (8-11 Score) 53 and 77%-Average

Below (0-7 Score) 50%-Poor

## Data Collection Procedure

Before conducting the study, formal permission was obtained. The period of data collection was done for four weeks. The researcher introduced self to each subject and explained the purpose of the study.

## Plan for data analysis

Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics.

## Descriptive Statistics

Frequency percentage mean and standard deviation were used for the analysis.

## Inferential Statistics

Chi-square was used to determine the association between demographic variables with the knowledge regarding self-administration of insulin injection.

## Protection of human subjects

After the problem statement was approved formal permission was obtained before starting the study. The oral consent was obtained from each participants of the study before starting the data collection. Assurance was given to the subject that the anonymity of each individual would be obtained.

## Data analysis and interpretation

The data collected during the study were analyzed based on the objectives formulated for the study. The objectives of the study were:

1. To assess the knowledge of diabetes mellitus patients regarding self-administration of insulin injection.
2. To find the association between the knowledge and selected demographic variables of diabetes mellitus patients towards self-administration of insulin injection.

## Organization of the Findings

In order to find out the relationship between the variables and also to be assess the knowledge of diabetes mellitus patients regarding self-

administration of insulin injection the data gathered were tabulated, analyzed and interpreted using both descriptive and inferential statistics. The data are presented under the following headings.

1. Frequency and percentage distribution of sample characteristics of the study.

2. Findings related to frequency and distribution of knowledge of diabetes mellitus patients regarding self-administration of insulin injection.

3. Association between knowledge of diabetes mellitus patients regarding self-administration of insulin injection and demographic variables such as Age, Gender, Education of the participant, occupation of the participant, Religion, Marital status, Family income per-month, Duration since diagnosis of Diabetes Mellitus, Actual number of years on insulin therapy [16,17].

## Results and Discussion

This study findings are discussed in this chapter with reference to the objectives.

## Characteristics of the participants

1. According to the age, 10% of the participants were at the age of <40 years, 30% of the participants were between the age of 41-50 years, 30% of participants were between the age of 51-60 years and 30% of the participants were between the age of 61-70 years.
2. Regarding the participants Gender 60% were males and 40% females.
3. On seeing the participants education, 20% were had Primary level of education, 20% were had Secondary level of education, 20% were had Higher level of education and 40% were had Graduate and above.
4. Regarding participants occupation, 20% Unemployed, 10% were working in Private Sector, 30% were working in Government Sector and 40% were Self-employed.
5. According to the participants Religion, 80% were Muslims, 5% were Christians, 5% were Hindus and 10% were coming under other category.
6. On seeing the participants Marital status, 90% were Married, 0% were Unmarried, 0% were Window (er) and 10% were Divorced.
7. Regarding the participants Family income per-month, 0% were having Less than 2000 SR per-month, 20% were having 2001 SR-3000 SR per-month, 30% were having 3001 SR-4000 SR per-month and 50% were having 4001 SR and above permonth.
8. According to the participants Duration since diagnosis of Diabetes Mellitus, 30% were diagnosed <3 years, 20% were diagnosed 4-6 years, 10% were diagnosed 7-9 years and 40% were diagnosed >10 years.
9. On seeing the participants Actual number of years on insulin therapy, 30% were having insulin therapy for <2 years, 20% were having insulin therapy for 3-4 years, 30% were having insulin therapy for 5-6 years and 20% were having insulin therapy for 7 years and above.
10. Regarding the participants family history of diabetes mellitus, 80% were having family history of diabetes mellitus and 20% are not having the family history of diabetes mellitus

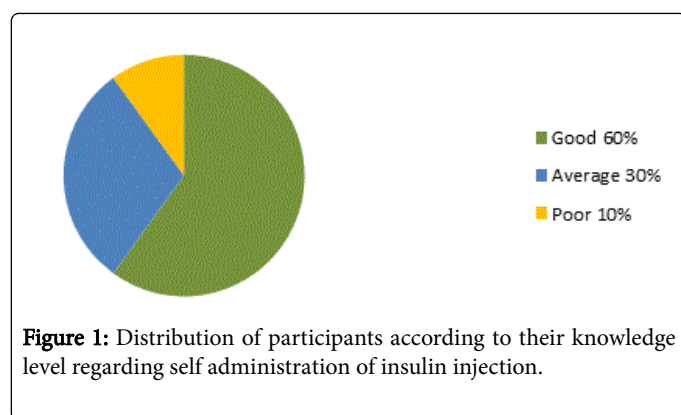
The first objective of the study is to assess the knowledge of diabetes mellitus patients regarding self-administration of insulin injection.

The score for the level of knowledge is calculated by Structured Knowledge questionnaire (Table 1).

Level of Knowledge	Frequency (F)	Percentage (%)
Good	12	60%
Average	6	30%
Poor	2	10%

**Table 1:** The study subjects are classified according to the range.

The second objective of the study is to find the association between the knowledge and selected demographic variables of diabetes mellitus patients towards self-administration of insulin injection (Figure 1).



In the study, the knowledge level with selected variables and chi-square test was computed. The findings revealed that there was significant association between knowledge level and Education of the participant, Occupation of the participant, Duration since diagnosis of Diabetes Mellitus, Actual number of years on insulin therapy, Family history of diabetes mellitus. But there is no association between knowledge level and age, Gender, Religion, Marital status, Family income per-month.

## Implications

The study has several implications for the following fields.

### Implication for nursing practice

Health is not the concern of health care system alone, but of every individual family and community. This study can be implied both in hospital and community areas. Thus gives a great insight to community health nurses and motivates them to arrange health education programme and thereby helps to reduce morbidity and mortality due to diabetes mellitus by improving knowledge of individual, family and community.

### Implications for Nursing Administration

The study has proved that the health of individual, family and community can be promoted by proper health education. So the health system of Kingdom Of Saudi Arabia can arrange for programs to prevent diabetes mellitus and promote health of individual, family and community.

## Implications for Nursing Research

This study also brings about the fact that more studies need to be done prevent common health problems in the Kingdom and promote health of individual, family and community.

## Recommendations

Based on the findings of the study investigator proposed the following recommendation.

1. A comparative study can be carried out in various settings
2. Prospective study can be conducted to rule out the risk factors of diabetes mellitus
3. Studies can be conducted to see the effect of health programmes in community in creating awareness among the individual, family and community.

## Conclusion

The study reveals that 12 participants (60%) are having good knowledge regarding self-administration of insulin injection, 6 participants (30%) are having average knowledge regarding self-administration of insulin injection and 2 participants (10%) are having poor knowledge regarding self-administration of insulin injection.

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