A Study To Correlate the Quality of Sleep, Quality of Life and Blood Sugar Among Diabetes Mellitus Patients in a Selected Area, Karnataka

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ABSTRACT

Background And Objective of The Study

Diabetes mellitus is a group of metabolic disorders characterized by chronic hyperglycemia caused by various pathogenetic processes in glucose homeostasis. Poor diet, refined and processed foods, a sedentary lifestyle and a worldwide epidemic of obesity are contributing to the rapidly rising numbers of the disease. Objectives to correlate the blood sugar, quality of sleep, and quality of life in diabetes mellitus patients.

INTRODUCTION

Diabetes is a chronic disease it’s becoming more and more prevalent in our society. Diabetes mellitus is a metabolic disorders characterized by chronic hyperglycemia caused by various pathogenetic processes in glucose homeostasis. Because of Poor diet, refined and processed foods, a sedentary lifestyle and obesity are contributing to the rapidly rising numbers of the disease.

According to the World Health Organization (WHO), approximately 150 million people worldwide have diabetes. There is an increasing concern about the effect metabolic disorders, especially diabetes have on health services. Diabetes may lead to a number of serious health complications like diabetic retinopathy, cardiovascular disease, kidney failure, neuropathy, and diabetic foot disease. In addition to these serious health concerns, a recent study reports that diabetes may negatively affect sleep.

Human sleep is necessary at least 7 to 9-hour period. Sleep disturbances are common among individuals with diabetes. When compared with non diabetics and diabetes report higher rates of insomnia, excessive daytime sleepiness, and unpleasant sensations in the legs that disturb sleep.

MATERIALS AND METHOD

It was analyzed through descriptive and inferential statistical analysis. Statistical analysis such as standard deviation, percentage and paired 'r' value was used to assess the correlation of quality of sleep and quality of life in Diabetes Mellitus patients. Chi-square analysis was done to associate between quality of sleep and quality of life with Diabetes Mellitus. Setting is the physical location and condition in which data collection takes place in the study. The study was conducted in a selected hospital Karnataka. The setting for the present study was selected on the basis of geographical proximity, feasibility of the study and availability of sample. Considering being the variable that is believed to cause or influence the dependent variable. In this study, there was no independent variable. The dependent variable in this study is RBS, QOS and QOL. A population is any group of individuals has one or more characteristics in common that are of interest to the researcher. The study population comprises all the Diabetes Mellitus patients. All the Diabetes Mellitus patients who were present in the selected area within the period of study and who filling the sampling...
criteria. The number of units or subjects gathered for inclusion in the study is called sample size. The sample size of this study was 100, Diabetes Mellitus in a selected area, Karnataka. The technique that was adopted for this study was Convenient sampling.

**SAMPLING CRITERIA**

**Inclusive Criteria:**
Subjects who were diagnosed with Diabetes Mellitus.
Both genders were included.
Those who were willing to participate.
The patients who understand and speak English, Kannada or Hindi.

**Exclusive Criteria:**
Diabetes Mellitus patients who are not willing to participate in the study.
The patient affected with other critical disease condition.

**PROCEDURE FOR DATA COLLECTION**

Formal permission was obtained from the concerned authority of R.L. Jalappa Hospital and Research Centre to conduct the study. Study has conducted on 21.02.2013. Samples were selected in accordance with laid down criteria’s. 100 Diabetes Mellitus patients were selected by using non random sampling. The study was started with the self-introduction of the investigator to the samples individually who fulfilled the sampling criteria. The investigator explained about the purpose of the study. Confidentiality was assured and written consent was obtained. Demographic variables were administered to Diabetes Mellitus patients.

**Data Analysis:**

Data analysis was done by using descriptive and inferential statistics. The demographical variables, level of RBS, QOS and QOL were described descriptively in terms of frequency and percentage. Statistical method like mean, standard deviation, and paired ‘r’ value was used to assess the correlation between RBS, QOS and QOL among Diabetes Mellitus patients. Chi-square analysis was done to find the association between quality of sleep, quality of life and random blood sugar with selected demographical variables. The level of significance was set at 0.05.

**Protection of Human Rights:**

The proposed study was conducted after the approval of dissertation committee of Garden City College of Nursing, Bangalore. Permission was obtained from the Medical Director, R.L. Jalappa Hospital and Research Centre Tamaka Kolar. Consent of each subject was obtained before starting the data collection. Assurance was given to them that the anonymity of each individual would be maintained.

**RESULTS**

**Correlation Between RBS, QOS AND QOL Among Diabetes Mellitus Patients.**

Table 1: Analyzing the correlation between RBS and QOS among diabetes mellitus patients. N=100

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>RBS</th>
<th>QOS</th>
<th>r VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEAN</td>
<td>SD</td>
<td>MEAN</td>
</tr>
<tr>
<td></td>
<td>227.22</td>
<td>52.1</td>
<td>17.04</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2 tailed)*
The above table represents the correlation between RBS and QOS among DM patients. The mean and SD value of RBS shows that 227.22 and 52.1, whereas in QOS mean and SD value shows that 17.04 and 4.151. The correlation between RBS and QOS value comes as +0.819. It shows that there is a significant positive fairly high degree of correlation between RBS and QOS.

**Table 2: Analyzing the correlation between RBS and QOL among diabetes mellitus patients. N=100**

<table>
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<tr>
<th>VARIABLES</th>
<th>RBS</th>
<th>QOL</th>
<th>r Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>227.22</td>
<td>25.96</td>
<td>-0.815*</td>
</tr>
<tr>
<td>SD</td>
<td>52.1</td>
<td>9.204</td>
<td></td>
</tr>
</tbody>
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The above table represents the correlation between RBS and QOL among DM patients. The mean and SD value of RBS shows that 227.22 and 52.1, whereas in QOL mean and SD value shows that 25.96 and 9.204. The correlation between RBS and QOL value comes as -0.815. It shows that there is a significant negative fairly high degree of correlation between RBS and QOL.

**Table 3: Analyzing the correlation between QOS and QOL among diabetes mellitus patients. N=100**

<table>
<thead>
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<th>VARIABLES</th>
<th>QOS</th>
<th>QOL</th>
<th>r Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
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<td>25.96</td>
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The above table represents the correlation between QOS and QOL among DM patients. The mean and SD value of QOS shows that 17.04 and 4.151, whereas in QOL mean and SD value shows that 25.96 and 9.204. The correlation between QOS and QOL value comes as 0.823. It shows that there is a significant negative high degree correlation between QOS and QOL.

**DISCUSSION**

This chapter deals with the discussion in accordance with the objectives of the study and hypothesis. The present study was designed to determine the correlation between Quality of Sleep, Quality of Life and Blood sugar Among Diabetes Mellitus patients in a selected hospital, Karnataka. The study design was quasi experimental in nature conducted over a period of four weeks. Data were collected from 100 Diabetes Mellitus patients came for consultation in R.L. Jalappa Hospital and Research Centre Hospital, by using structured questionnaire.

**Objective 1: To assess the blood sugar level in diabetes patients.**

In the present study was RBS assessed and tabulated, out of 100 patients, majority of the respondents (93%) had the RBS range score of >125 mg/dl, and the remaining 7 (7%) had 100-125 mg/dl.

**Objective 2: To assess the Quality of Sleep among Diabetes Mellitus Patients.**

In the present study was QOS assessed and tabulated, out of 100 patients, majority of the respondents 76 (76%) had the sleeping range score of 15-21, 21 (21%) of them had 8-14 score, and the remaining 3 (3%) had 0-7 score.

**Objective 3: To assess the Quality of Life among Diabetes Mellitus Patients.**

In the present study QOL was assessed and tabulated, out of 100 patients of them had majority of the respondents 62(62%) valued their QOL score range as 15-26, 25 (25%) were between 27-38 score, and the remaining 13 (13%) were scored as 39-50.

**Objective 4: To correlate the blood sugar, quality of sleep, and quality of life in diabetes mellitus patients.**

To correlate the blood sugar and quality of sleep in diabetes mellitus patients.

In this study the mean and SD value of RBS shows that 227.22 and 52.1, where as in QOS mean and SD value shows that 17.04 and 4.151. The correlation between RBS and QOS value comes as (+.819). It shows that there is a significant positive fairly high degree of correlation between RBS and QOS. Hence Hypothesis H1 is accepted.

To correlate the blood sugar and quality of life in diabetes mellitus patients.

In this study the mean and SD value of RBS shows that 227.22 and 52.1, where as in QOL mean and SD value shows that 25.96 and 9.204. The correlation between RBS and QOL value comes as (-.815). It shows
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**To correlate the quality of sleep and quality of life in diabetes mellitus patients.**

In this study the mean and SD value of QOS shows that 17.04 and 4.151, where as in QOL mean and SD value shows that 25.96 and 9.204. The correlation between QOS and QOL value comes as (-0.823). It shows that there is a significant negative fairly high degree of correlation between QOS and QOL. Hence Hypothesis H$_1$ is accepted.

**CONCLUSION**

100 Diabetes Mellitus patients were selected for this study by using convenient sampling. The tool used for the study was comprised of rating scales to assess the Quality of Sleep, Quality of life and glucometer used to assess Random Blood sugar among Diabetes Mellitus Patients.

**BIBLIOGRAPHY**

1. Zachary T. Bloomgarden and Guang Ning. Diabetes is a chronic disease that is becoming more and more prevalent in society. National Institute of Diabetes and Digestive and Kidney Disease 2012; 55(121):1753-67