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Depression level among people with Diabetes Mellitus

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Abstract

Background: *Diabetes Mellitus is a chronic metabolic disorder. Depression is a common mental disorder characterized by sadness, loss of interest or pleasure, guilt or low self-worth, disturbed sleep, poor appetite, tiredness, and poor concentration. Around 350 million people are affected by depression in the world.* ***Objectives:*** *The study aims to explore the socio-demographic characteristics of diabetes patients and the level of depression among people with diabetes mellitus.* ***Materials and Methods:*** *The study was a cross-sectional study. One hundred three samples were taken. The Patient Health Questionnaire Nine (PHQ-9) questionnaire assessed depression levels.* ***Results:*** *The mean age of the participants was 49 years. In this study, it was found that out of 103 participants, 54% of respondents were male, and the rests of 46% were female. The research revealed that most of the participants suffered from mild depression 37.9% (n=39), tone to minimal depression 34.0% (n=35), average 19.4% (n= 20), moderately severe 7.8% (n=8), and the rest of the people suffer severe depression 1% (n=1).* ***Conclusion:*** *Diabetes Mellitus is one of our society's most common and worsening disorders. In our country prevalence of diabetes mellitus is increasing day by day. Every person with diabetes mellitus feels depressed about their disease. On the other hand, depression is the most common barrier to maintaining quality of life. We have to give them mental support, psychological assessment, and physical treatment.*

Keywords: *Diabetes Mellitus, depression, patient health questionnaire Nine (PHQ-9)*

Introduction

Diabetes Mellitus is a chronic metabolic disorder (1). The main cause of type-1 is a failure of the pancreas to produce enough insulin and type-2 inability of the body to utilize the produced insulin (2). Diabetes Mellitus is a metabolic disturbance of carbohydrate, protein, and fat metabolism (1). The prevalence of diabetes mellitus is rapidly increasing day by day. According to the world health organization, around 170 million people are affected by diabetes, which may double by 2030 (1, 3). According to the world health organization (WHO), Depression is a common mental disorder characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or poor appetite, tiredness, and poor concentration. Depression is the most common mental disorder and around 350 million people are affected by depression in the world (4). Depression is characterized by sadness, loss of interest, low self-esteem, decreased sleep quality, loss of appetite, feelings of tiredness, and impaired concentration. Anxiety is a feeling of worry, and nervousness and stress are mental strains due to excessive demands on the body (5). The Relationship between Diabetes Mellitus and depression has been investigated by many researchers. Prevalence of depression among individuals with Diabetes Mellitus appears to vary by type of Diabetes Mellitus, race/ethnicity, and among developed and developing nations (6, 7).

Materials and Methods

Study design

This study was conducted using cross sectional survey under a quantitative study design. Survey methodology was chosen to meet the study aim as an effective way to collect data.

Selection of sample

Peoples with Diabetes Mellitus has collected using convenience sampling from the different government and non-government hospital also diagnostic based clinic setting in Bangladesh.

Study period

The study period was from March 2019 to August 2019.

Sample size

From this population the researcher selected 103 subjects for study according to the inclusion and exclusion criteria. According to the prevalence of depression on patients Diabetes Mellitus, estimated sample size 115 (by following(z^(2) pq)/d^2 , where z= 1.28 with 80% confidence limit, p= 0.87, q= 1-p, d=0.04) (8).

Sampling techniques

The study was conducted by using the convenience sampling methods due to the time limitation and as it was the one of the easiest, cheapest and quicker method of sample selection. The researcher used this procedure, because, getting of those samples whose criteria were concerned with the study purpose.

Inclusion criteria

- Patient with Diabetes mellitus (Type-1 & Type-2)
- Age group (20 years to 90 years).
- Both male and female patient were included.
- Patient who were willingly to participate

Data collection tools

Two questionnaires were used to data collection process. Semi structured questionnaire was used for the collection of socio-demographic

information as well as information diabetes related variables.

Kroenke, et al., established Patient Health Questionnaire Nine (PHQ-9) is used to measurement of level of depression. In this scale there are some interpretations. There are: 0-4= none-minimal; 4-9= mild; 10-14= moderate; 15-19= moderately severe and 20-27 is severe depressive symptom (9).

Process of Data Collection

At the beginning of data collection researcher clarified that, the participant has the right to refuse to answer of any question during completing questionnaire. Researcher also clarified to all participants about the aim of the study. Participants were ensured that any personal information would not be published anywhere. Researcher took permission from each volunteer participant by using a written consent form. After getting consent from the participants, standard questionnaire was used to identify complains and collect demographic information. Questions were asked according to the Bangla format. For conducting the interview, the researcher conducted a face to face interview and asked questions. The researcher built a rapport and clarified questions during the interview. All the data were collected by the researcher own to avoid the errors.

Data analysis

Descriptive statistics were used to analyze data. Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 20.0. Data were analyzed by descriptive statistics and calculated as percentages and presented by using table, bar graph, pie charts etc. Microsoft office Excel 2010 was used to decorating the bar graph and pie charts.

Results

Results related to the socio-demographic status

The study revealed that, the mean age of the participants was 49 ± 16.04 years. The minimal age was 23 years and maximum was 86 years. Out of 103 participants 54% respondents were male and were 46% female. Most of the participants were primary passed (24.3%) whereas 14.6% participants were post graduated. Meanwhile 4.9% participants were illiterate also. The education status of the other participants is shown in **Figure 1**.

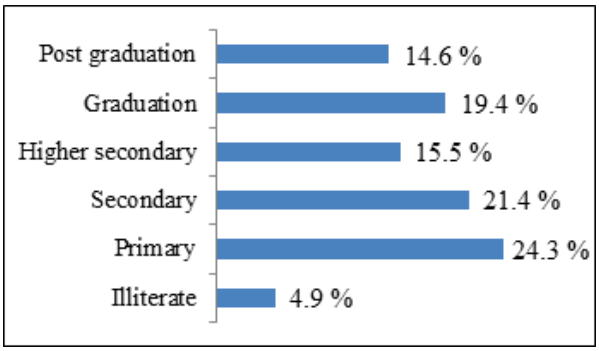

Fig 1. Educational status of the participants

Majority of the participants were found as sedentary to moderate worker. The professional status is shown in Table 1.

Table 1: Professional status of the participants

Professional Status	Frequency n (%)
Housewife	36 (35.0%)
Service Holder	22 (21.4%)
Businessman	16 (15.5%)
Retired	17 (16.5%)
Student	3 (2.9%)
Others	9 (8.7%)

Results related to the general aspects of diabetes mellitus

In this research, majority of participants were found suffering from diabetes mellitus for less than 5 years (37.9%) whereas only

(11.7%) were found suffering for more than 21 years **(Figure 2).**

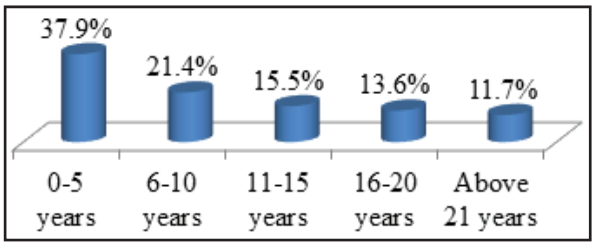

Fig 2. Duration of the Diabetes mellitus among the participants

The Research showed that, most of the participants were suffering from Type-I Diabetes Mellitus (56.3%) and rest of participants were suffering from Type-II Diabetes mellitus (43.7%)

The Research revealed that, majority of the participants (50.6%) were suffering from post-diabetic complications, among which, retinopathy was highest (42.30%). The frequencies of the other complications are shown in **(Figure 3).**

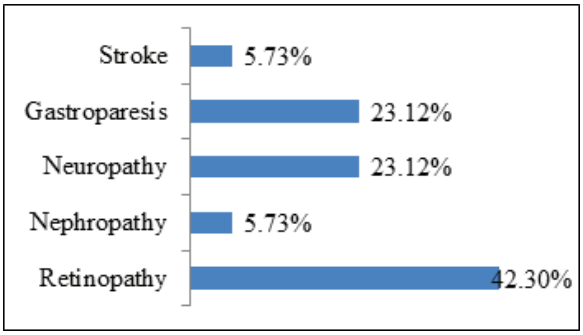

Fig 3. Complication of diabetes mellitus among the participants

Results related to the depression level

The PHQ-9 scale used to score the depression status of the participants, had nine (9) items. The scores for each item were summed to generate a total score 27 (range: 0-27). The score was interpreted as the none-minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), Severe (20-27). In the current research, it was found that, most of the participants were suffering from mild depression (37.9%) whereas only (1%) was suffering for severe depression. Other levels are shown in **(Figure 4)**.

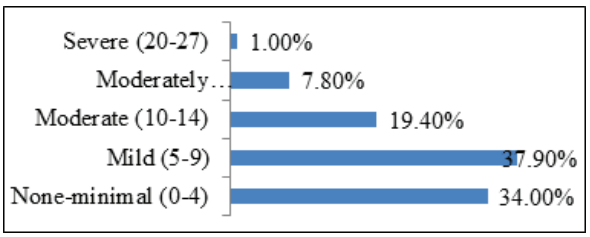

Fig 4. Depression level among people with diabetes mellitus

Discussion

This study was planned to see depression level among peoples with Diabetes level. The mean age of the participant was 49 years. 23 years minimal age and maximum was 86 years.

In this study researcher found the out of 103 participants 54% (n=56) respondents were male and rests of 46% (n=47) were female. Another study also reported that, males (46%) and females (54%) (2).

Aminu et al. also showed that, Educational status was Illiterate 11.0%, Primary school 33.5%, Secondary school 30.5%, College and above 25.0% (2). In this study, researcher showed that highest rate that was primary 24.3% (n= 25), Secondary passed participant were second highest rate that was 21.4% (n=22). Bachelor passed, higher secondary, post-graduation and illiterate participants were according to 19.40% (n=20), 15.5% (n=16), 14.6 % (n=15) and 4.9% (n=5). Professional was 6.5%, skilled was 17.5%, Unskilled 6.5%, homemaker 44.0%, Retired 24.5%, Unemployed 1.0% (2). In this study researcher also

found that, majority of the participant are housewife 35% (n=36), than service holder 21.4% (n=22), Retired 16.5 (n=17), Businessman 15.5% (n=16), others professionals 8.7% (n=9) and student was 2.9% (n=3).

Researcher also found, most of participants are suffered from diabetes mellitus for 0-5 years 37.9% (n=39), there after 6-10 years 21.4 (n=22), 11-15 years 15.5% (n=16), 16-20 years 13.6% (n=14) and suffered from diabetes mellitus for above 21 years 11.7% (n=12).

Add to this, majority of the participant suffered Type-I diabetes mellitus 56.3% (n=58) and rest of participant suffered Type-II diabetes mellitus 43.7% (n=45). Another study also reported that, Type-I diabetes mellitus 32.8% and Type-II diabetes mellitus 67.2% (10).

Researcher showed that, 50.6% (n=52) people with diabetes mellitus suffer post diabetes complication. Among them, retinopathy 42.30% (n=22) is highest rate, after than neuropathy and gastroparesis was same as 223.12% (n=12), nephropathy and stroke 5.73% (n=3). Another study also reported that, people with diabetes mellitus suffer retinopathy 25.7%, Nephropathy 7.1%, Peripheral neuropathy 46.5%, Autonomic neuropathy 14.2%, Impotence 17.5 %, Peripheral vascular 28.5%, Coronary artery 18.6% (11).

Aminu et al., showed that in their study, majority of participant (56%) suffer mild depression, than moderate (32%), and rest of (12%) participant suffer from severe depression (2). In this research, researcher found that, most of the participants suffer mild depression 37.9% (n=39), than none to minimal depression 34.0% (n = 35), moderate 19.4% (n = 20), moderately severe 7.8% (n = 8), and rest of people suffer severe depression 1% (n = 1).

Conclusion

In conclusion, researcher was worked with 103 peoples with Diabetes mellitus, and found many objectives and depression level. Diabetes Mellitus is one of the most common and worsen disorder at our society. In our country prevalence of diabetes mellitus is increasing day by day. Among them maximum persons felling depression about their diabetes mellitus. On the other hand, depression is a most common barrier to maintain quality of life. In this study, most of the participants suffer mild depression 37.9% (n=39), none to minimal depression 34.0% (n=35), moderate 19.4% (n= 20), moderately severe 7.8% (n=8), and rest of people suffer severe depression 1% (n=1). A diabetes patient suffers from depression at any time during his diabetes life. All of our society should humanly support diabetes patients to improve the mental health of a diabetes patient.

Source(s) of Support: Nil
Conflict of Interest: Nil

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