Assessment Of Life Events, Depressive Features, And Perceived Social Support Among Patients With Diabetes Mellitus Attending OPD Of Selected Hospitals, West Bengal

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Abstract:
A descriptive study was conducted on "Assessment of life events, depressive features and perceived social support among patients with diabetes mellitus attending OPD of selected hospitals, West Bengal" whose objectives were to assess the life events, depressive features and perceived social support among diabetes mellitus patients, to find out the association of life events, depressive features and perceived social support with selected demographic variables and to find out the relationship between life events, depressive features and perceived social support. The conceptual framework adopted for the study was based on 'Health Belief Model'. Data was collected using structured interview schedule, Patient Health Questionnaire (PHQ-9) and Multidimensional Scale of Perceived Social Support (MSPSS) from 250 patients who were selected through convenience sampling technique. The findings of the study revealed that 93.6% (234) of the patients had low occurrence of life events with health-related events being the most frequent, 51.2% (128) of patients had moderate depression and majority (74%) of the patients had moderate social support. There was a statistically significant positive correlation found between life events and depressive features (r= 0.28, t= 4.56*, p<0.05), significant negative correlation between life events and perceived social support (r= -0.37, t= 5.87*, p<0.05) and significant negative correlation between depressive features and perceived social support (r= -0.17, t= 2.74*, p<0.05). The study has implications in the field of Nursing education, Nursing practice, Nursing administration and Nursing research.

Background*: Diabetes mellitus is a heterogeneous group of disorders characterized by hyperglycemia due to an absolute or relative deficit in insulin production or action. Diabetes is defined as a state of hyperglycemia in either fasting or postprandial states. The chronic hyperglycemia of diabetes mellitus is associated with end organ damage, dysfunction, and failure, including the retina, kidney, nervous system, heart, and blood vessels.[1] According to the International Diabetes Foundation, India now ranks second in having the greatest number of diabetics with China being the first one. Diabetes currently affects greater than 62 million Indians, which denotes more than 7.2% of the adult population. According to the National Family Health Survey-4, the prevalence of diabetes among young and middle-aged adults is 6.7% and prediabetes is 5.6% respectively. Averagely the age on onset is 42.5 years. Almost 1 million Indians die due to diabetes yearly. According to the Indian Heart Association, India is predicted to be home to 109 million individuals with diabetes by 2035. A study by the American Diabetes Association reports that India will see a huge spike in people diagnosed with diabetes by 2030. The high incidence is imputed to a combination of genetic susceptibility plus adoption of a high-calorie, low-activity lifestyle by India's growing middle class.[2]If left untreated, diabetes can lead to various health complications. Acute complications can include diabetic ketoacidosis, hyperosmolar hyperglycemic state, or death. Serious long-term complications include cardiovascular disease, chronic kidney disease, foot ulcers, peripheral neuropathy, retinopathy and cognitive impairment.[3]*

Materials and Methods*: In this descriptive study semi-structured interview schedule (tool I) was used to obtain the background information of the patients with diabetes mellitus. Structured interview schedule (tool II) was administered to assess the occurrence of life events in patients with diabetes mellitus. Standardized Patient Health Questionnaire (PHQ-9) (tool III) was given to the patients to assess the depressive features in patients with diabetes mellitus. Standardized Multidimensional Scale of Perceived Social Support questionnaire (tool IV) was given to the patients to assess the perceived social support in patients with diabetes mellitus. A separate code number was used for each patient. After interviewing the tool I and tool II patients were given the questionnaire of tool III and tool IV. While one patient was filling up the questionnaire, another patient was interviewed. Each respondent took 40 minutes on average to answer the interview schedule and questionnaire. The number of samples for the study were 250 who were selected through convenience sampling technique.*

Results: *There was a statistically significant positive correlation found between life events and depressive features (r= 0.28, t= 4.56*, p<0.05), significant negative correlation between life events and perceived social*

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support (r= -0.37, t= 5.87*, p<0.05) and significant negative correlation between depressive features and perceived social support (r= -0.17, t= 2.74*, p<0.05).

Conclusion*: The findings of the present study based on the objectives revealed that majority of the patients had low occurrence of life event over the past 6 months and only one patient out of 250 had severe depression while minimal depression was found in none of the patients. Findings also suggested that majority of patients with diabetes mellitus had moderate social support. In this study the correlation between life events and depressive features was found moderately positive correlation and a moderately negative correlation was revealed between life events and perceived social support. The findings also depicted that a weakly negative correlation existed between depressive features and perceived social support.*

Keywords: *Diabetes mellitus; Depression; Life events; Perceived Social Support.*

I. Introduction

Diabetes though prevalent throughout the world is more found (especially type 2) in developed countries. The greatest incidence is seen in low- and middle-income countries, where greater than 80% of diabetic deaths occur. It is expected that Asia and Africa are going to have the most prevalence of diabetes by 2030. The rise in rates in developing countries follows the expansion of civilization and lifestyle changes, including increasingly sedentary lifestyles with decreasing physically demanding work and the global nutrition transformation, marked by increased high energy-dense but poor nutrient food intake (often high in sugar and saturated fats, sometimes referred to as the "Western-style" diet). Globally the number of diabetes cases might increase by 48% between 2017 and 2045.[3] Depression and diabetes mellitus are two most common clinical conditions found in primary care. People diagnosed with type 2 diabetes are largely treated in the primary care setting, with fewer of them being referred for specialist care. Co-morbid depression affects glycemic control conversely and is associated with more serious and rapid progression of complications but is often undiagnosed and untreated. Social support is considered as one of the psychosocial factors for compliance to accomplish self-care and control chronic diseases. Social support is defined as an emotional feeling of belonging, acceptance, and assistance which elevates a person's ability to survive better with stressful conditions. In fact, social support in diabetes is considered a vital element of mental health promotion which helps a person to feel social belongingness. On the other hand, perceived social support is more important than other categories of social support such as received social support and social fixation.[5]

II. Materials And Methods

This non-experimental descriptive survey was carried out on patients with diabetes mellitus attending Medicine OPD of I.P.G.M.E.& R and SSKM Hospital, Kolkata, West Bengal from 02/03/2022 to 31/03/2022. A total of 250 patients with diabetes mellitus were selected from the accessible population by convenience sampling technique.

Study design: Non-experimental descriptive survey design

Study location: This study was carried out for the partial fulfillment of course requirement for the degree of Master of Science in Nursing from the West Bengal University of Health Sciences and was done in Medicine OPD of I.P.G.M.E.& R and SSKM Hospital, Kolkata, West Bengal

Study duration: 02/03/2022 to 31/03/2022

Sample size: 250 patients

Sample size calculation: Formula: $n = t^2 p(1-p)/d^2$
Where, n = required sample size
t = 1.96 (standard deviation score for 95% set interval)
p = estimated prevalence rate of depressive features among patients with diabetes mellitus = 50%
d = margin of error at 5% (standard value of 0.05)
so that, $n = (1.96)^2 \times 0.5(1-0.5)/(0.05)^2 = 384$

So, the required number of samples for the present study was 384. However, due to the time constraint and predicting the availability of the patients, sample size considered was 250.

Subjects and selection method: The study population was drawn from accessible patients with diabetes mellitus attending Medicine OPD of I.P.G.M.E.& R and SSKM Hospital, Kolkata, West Bengal through the method of convenience sampling technique.

Inclusion criteria:
1. Patients with diabetes mellitus belonging to adult age group only
2. Patients having type II diabetes mellitus for 1 year and more than that
3. Patients who are willing to participate

Exclusion criteria:
1. Patients having type I diabetes mellitus
2. Pregnant women

Procedure methodology

Before the final data collection, necessary permission was taken from the State Health Department and Medical Superintendent and Vice Principal of I.P.G.M.E & R and SSKM Hospital campus and HOD of Medicine OPD, Kolkata-20. The schedule of data collection was from 9am to 4:30 pm from Monday to Saturday. Data was collected from 8-10 patients daily.

During data collection procedure the patients were allowed to sit there, maintaining strict Covid-19 protocol. All possible measures were taken to avoid distractions. The patients who came for regular follow up of diabetes mellitus were requested to come to the investigator after their check up from the doctors.

The investigator introduced herself to each patient and explained the purpose and nature of the study. Informed consent was taken from each patient and confidentiality was ensured.

Semi-structured interview schedule (tool I) was used to obtain the background information of the patients with diabetes mellitus. It had part A and part B. Tool I (A) was developed to collect the background data of patients having type 2 diabetes mellitus. It described the demographic criteria of the sample consisting of 9 items - age, sex, educational status, occupation, type of habitat, marital status, type of family, monthly family income, and number of family members. Tool I (B) was utilized to collect data regarding the disease profile of patients having type 2 diabetes mellitus. It described the demographic criteria of the sample consisting of six items - years of having type 2 diabetes mellitus, age of onset of illness, suffering from any other comorbidities, reason for clinic visit, type of treatment, and family history of having type 2 diabetes.

Structured interview schedule (tool II) was administered to assess the occurrence of life events in patients with diabetes mellitus. It was developed by the researcher consisted of 18 items. It was utilized to collect data regarding the occurrence of life events on the following five domains, such as work-related events, family related events, health related events, personal events and financial related events over the past six months.

Standardized Patient Health Questionnaire (PHQ-9) (tool III) is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 was a 3-page questionnaire of the depression module, that can be entirely self-administered by the patient, scoring each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day)[16] was given to the patients to assess the depressive features in patients with diabetes mellitus.[16]

Standardized Multidimensional Scale of Perceived Social Support questionnaire (MSPSS) (tool IV) was given to the patients to assess the perceived social support in patients with diabetes mellitus. Gregory Zimet, Nancy Dahlem, Sara Zimet, and Gordon Farley first published on the MSPSS in the Journal of Personality Assessment in 1988. The Multidimensional Scale of Perceived Social Support (MSPSS) was a brief research tool designed to measure perceptions of support from 3 sources: Family, Friends, and a Significant Other. The scale comprised of a total of 12 items, with 4 items for each subscale. Across many studies, the MSPSS had shown good internal and test-retest reliability, good validity, and a fairly stable factorial structure.[17]

A separate code number was used for each patient. After interviewing the tool I and tool II patients were given the questionnaire of tool III and tool IV. While one patient was filling up the questionnaire, another patient was interviewed. Each respondent took 40 minutes on average to answer the interview schedule and questionnaire.

Statistical analysis

Analysis and interpretation of data was done based on the objectives of the study. The obtained data was analyzed using descriptive statistics and inferential statistics. Chi-square test was performed to find out the association between depressive features, life events, perceived social support and selective demographic variables. Correlation coefficient was determined to find out the correlation between depressive features and life events, life events and perceived social support, perceived social support and depressive features.

III.   Results

Data were organized, tabulated and interpreted by using descriptive and inferential statistics as following:

Section I (A): This section deals with demographic characteristics of the patients with diabetes mellitus

Table 1 Frequency and percentage distribution of patients with diabetes mellitus according to their age and gender

n = 250

Variables	Frequency	Percentage
Age (in years)		
30-39	38	15.2
40-49	135	54.0
50-63	77	30.8
Gender		
Male	147	58.8
Female	103	41.2

The data presented in the table 1 showed that majority (135; 54.0%) of the patients belonged to the age group of 40-49 years. It also revealed that majority (147;58.8%) of the patients were male and the rest (103;41.2%) were female.

Table 2 Frequency and percentage distribution of patients with diabetes mellitus according to educational level and marital status

n=250

Variables	Frequency	Percentage
Educational status		
Primary	60	24
Secondary	136	54.4
Higher secondary	36	14.4
Graduation and above	18	7.2
Marital status		
Married	211	84.4
Unmarried	17	6.8
Widow/Widower	20	8.0
Divorce	2	0.8

Data presented in table 2 showed that majority (136; 54.24%) of the patients with diabetes mellitus had secondary education and only (18; 7.2%) had completed graduation and above. Data also displayed that maximum (211; 84.4%) number of patients were married.

Table 3 Frequency and percentage distribution of patients with diabetes mellitus according to occupation

n=250 (M 147 + F 103)

Occupational status	Female		Male	
	Frequency	Percentage	Frequency	Percentage
Unemployed	-	-	9	3.6
Home maker	52	20.8	-	-
Service	5	2	13	5.2
Retired	-	0	1	0.4
Job / business	24	9.6	34	13.6
Daily labor/ agricultural	22	8.8	90	36

Table 3 revealed that maximum number of male patients (90; 36%) were employed in agriculture/ daily wage labor and maximum number of female patients (52; 20.8%) were homemakers and only (1; 04%) was retired.

Table 4 Frequency and percentage distribution of patients with diabetes mellitus according to their number of family members, monthly family income and socioeconomic class

n=250

Variables	Frequency	Percentage
No. of family members		
4-7	223	89.2
8-11	18	7.2
12-14	9	3.6
Monthly family income (in rupees)		
5500-12999	172	68.8

13000-17999	41	16.4
18000-22999	16	6.4
23000-27999	21	8.4
Social class according to BG Prasad		
I (Upper class), ≥ 7863	3	1.2
II (Upper middle class), 3931 - 7862	16	6.4
III (Middle class), 2359 - 3930	40	16.0
IV (Lower middle class), 1179 - 2358	186	74.4
V (Lower class), < 1179	5	2.0

Data in table 4 revealed that majority (223; 89.2%) of the patients with diabetes mellitus had 4-7 family members, majority (172; 68.8%) of the patients with diabetes mellitus had monthly family income between 5500-12999/ and maximum (186; 74.4%) number of the patients with diabetes mellitus belong to lower middle class and only (3; 1.2%) belong to upper class.

Table 5 Frequency and percentage distribution of patients with diabetes mellitus according to their type of family and habitat

n=250

Variables	Frequency	Percentage
Type of family		
Nuclear	209	83.6
Joint	41	16.4
Habitat		
Rural	191	76.4
Urban	59	23.6

Data presented in table 5 showed that the majority (209; 83.6%) of the patients with diabetes mellitus were from nuclear while (41; 16.4%) were from joint families and maximum (191; 76.4%) number of the patients with diabetes mellitus were from rural areas and (59; 23.6%) patients with diabetes mellitus were from urban areas.

Section I (B): This section deals with disease profile of the patients with diabetes mellitus

Table 6 Frequency and percentage distribution of the patients with diabetes mellitus according to their duration of illness and comorbidities

n=250

Variables	Frequency	Percentage
Duration of illness (years)		
1-3	171	68.4
4-6	57	22.8
7-9	20	8
9-10	2	0.8
Co-morbidities		
Present	138	55.2
Absent	112	44.8

Data in table 6 revealed that more than half (171; 68.4%) of the patients with diabetes mellitus had 1-3 years of illness and only (2; 0.8%) had 9-10 years of illness. Data also depicted that maximum (138; 55.2%) of the patients with diabetes mellitus had comorbidities like hypertension etc. and rest (112; 44.8%) of the patients with diabetes mellitus did not have any comorbidities.

Table 7 Frequency and distribution percentage of the patients with diabetes mellitus according to type of treatment and family history of diabetes mellitus

n = 250

Variables	Frequency	Percentage
Type of treatment		
Oral hypoglycemic agent	225	90.0
Insulin	25	10.0
Family history		
Present	159	63.6
Absent	91	36.4

Data in table 7 revealed that majority (225; 90%) of the patients with diabetes mellitus were having oral hypoglycemic agents and only (25; 10%) were having insulin as treatment. Data also depicted that majority (159; 63.6%) of the patients with diabetes mellitus had family history.

Section II: This section deals with the findings related to the life events of the patients with diabetes mellitus

Table 8 Frequency and percentage distribution of the patients with diabetes mellitus according to the occurrence of life events in the past 6 months

n = 250

Variables	Frequency	Percentage
Life events		
Highest occurrence (15-18)	Nil	-
Medium occurrence (7-14)	16	6.4
Lowest occurrence (0-6)	234	93.6

Data presented in this table depicted that most (234, 93.6%) of patients had lowest occurrence of life events while none of them had highest occurrence of life events.

Table 9 Domain wise distribution of maximum possible score, mean score, mean percentage and rank order of life events score of patients with diabetes mellitus

n=250

Area	Maximum possible score	Mean score	Mean percentage	Rank order
Health related events	3	1.172	39.07	1st
Financial events	3	0.904	30.13	2nd
Personal events	3	0.56	18.67	3rd
Family related events	4	0.664	16.6	4th
Work related events	5	0.104	2.08	5th

Data presented in table 9 revealed that in five different domains of life events, health related events ranked 1st with a mean percentage of 39.07 followed by financial events (30.13), personal events (18.67), family related events (16.6) and work-related events (2.08).

Table 10 Range, mean, median and standard deviation of life events score of patients with diabetes mellitus

n=250

Variables	Range		Mean	Median	SD
	Possible score	Obtained score			
Life events	0-18	1-7	3.41	3	1.60

Data presented in table 10 depicted that life events score of patients with diabetes mellitus ranged from 1-7, the calculated mean was 3.41 with median 3 and standard deviation 1.60.

Section III: This section deals with the findings related to the depressive features of the patients with diabetes mellitus

Table 11 Frequency and percentage distribution of patients with diabetes mellitus according to the severity of depressive features present over last 2 weeks

n = 250

Severity of depression	Frequency	Percentage
Minimal depression (1-4)	Nil	-
Mild depression (5-9)	114	45.6
Moderate depression (10-14)	128	51.2
Moderately severe depression (15-19)	7	2.8
Severe depression (20-27)	1	0.4

Data presented in table 11 revealed that majority (128; 51.2%) of the patients with diabetes mellitus had moderate depression and only (1; 0.4%) had severe depression.

Table 12 Range, mean, median and standard deviation of severity of depression score of patients with diabetes mellitus

n = 250

Variables	Range		Mean	Median	SD
	Possible score	Obtained score			
Severity of depression	0-27	8-24	9.90	10.00	1.95

Data presented in table 12 revealed that severity of depression score of patients with diabetes mellitus ranged from 8-24, the calculated mean was 9.90 with median 10 and standard deviation 1.95.

Section IV: This section deals with the findings related to the perceived social support of the patients with diabetes mellitus

Table 13 Frequency and percentage distribution of patients with diabetes mellitus according to perceived social support

n = 250

Variables	Frequency	Percentage
High support (5.1–7)	7	2.8
Moderate support (3-5)	185	74.0
Low support (1-2.9)	58	23.2

Data presented in table 13 showed that more than half (185; 74%) of patients with diabetes mellitus had moderate social support and only (7; 5%) patients had high support.

Table 14 Range, mean, median and standard deviation of social support score of patients with diabetes mellitus

n = 250

Variables	Range		Mean	Median	SD
	Possible score	Obtained score			
Social support	1-7	2-7	3.71	3.92	0.92

Data presented in table 14 showed that social support score of patients with diabetes mellitus ranged from 2-7, calculated mean was 3.71 with median 3.92 and standard deviation 0.92.

Section V: This section deals with the findings related to the association of life events, depressive features and perceived social support with selected demographic variables

Table 15 Chi square test of association between life events and selected demographic variables

n = 250

Demographic variables	Life events		Value of χ^2
	< median	≥ median	
Age of the patients (in years)			
30-47	50	98	0.01
>47	35	67	
Educational status			
Upto secondary	67	129	0.79
Above secondary	15	39	
Occupation			
Homemaker & others	27	111	28.60*
Agriculture/daily labor	58	54	
Habitat			
Urban	21	38	0.09
Rural	64	127	

$\chi^2_{0.05(1)} = 3.84$

Data presented in table 15 depicted that there was no statistically significant association between life events and selected demographic variables except for occupation as its calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance.

Table 16 Chi square test of association between depressive features and selected demographic variables

n = 250

Demographic variables	Depressive features		Value of χ^2
	≤ median	> median	
Age of the patients (in years)			
30-47	66	82	0.15
>47	48	54	
Educational status			
Upto secondary	145	51	1.30
Above secondary	44	10	
Occupation			
Homemaker & others	81	57	21.30*
Agriculture/daily labor	33	79	
Habitat			
Urban	35	24	5.86*
Rural	79	112	

$\chi^2_{0.05(1)} = 3.84$

Data presented in table 16 depicted that the chi square values computed between depressive features and selected demographic variables were not significant at 0.05 level of significance except for occupation & habitat as their calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance.

Table 17 Chi square test of association between perceived social support and selected demographic variables

n = 250

Demographic variables	Perceived social support		Value of χ^2
	$\leq$ median	> median	
Age of the patients (in years)			
30-47	72	76	0.67
>47	55	47	
Educational status			
Upto secondary	112	84	14.61*
Above secondary	15	39	
Occupation			
Homemaker & others	79	59	5.12*
Agriculture/daily labor	48	64	
Habitat			
Urban	20	39	8.83*
Rural	107	84	

$\chi^2_{0.05(1)} = 3.84$

Data presented in this table revealed that there were statistically significant association between perceived social support and selected demographic variables such as education, occupation & habitat as the calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance.

Section VI: This section deals with the findings related to the relationship between life events and depressive events, relationship life events and perceived social support, and relationship between perceived social support and depressive features

Table 18 Correlation coefficient and their significance between life events and depressive features

n=250

Variables	r	t
Life events		
Depressive features	0.28	4.56*

T (248) =1.96 with 248 df, p< 0.05 $\rightarrow$ significant

Data presented in table 18 depicted that r value between life events and depressive features was 0.28 indicating moderately positive correlation between them and t value computed between the two variables was 4.56 which was statistically significant at 0.05 levels of significance. Hence, it can be concluded that people experiencing a greater number of life events had more depressive features.

Table 19 Correlation coefficient and their significance between life events and perceived social support

n=250

Variables	r	t
Life events		
Perceived social support	-0.37	5.87*

T (248) =1.96 with 248 df, p< 0.05 $\rightarrow$ significant

Data presented in table 19 depicted that r value between life events and perceived social support was -0.37 indicating moderately negative correlation between them and t value computed between the two variables was 5.87 which was statistically significant at 0.05 levels of significance. So, it can be concluded that patients experiencing a greater number of life events had low perceived social support.

Table 20 Correlation coefficient and their significance between depressive features and perceived social support

n=250

Variables	r	t
Depressive features	-0.17	
Perceived social support		2.74*

T (248) =1.96 with 248 df, p< 0.05 significant

Data presented in table 20 depicted that r value between depressive features and perceived social support was -0.17 indicating weakly negative correlation between them and t value computed between the two variables was 2.74 which was statistically significant at 0.05 levels of significance. So, it can be concluded that people with more depressive features had low perceived social support.

IV.   Discussions

Findings related to demographic characteristics

The findings of the study showed that majority (135;54.0%) of the patients belonged to the age group of 40-49 years followed by (77;30.8%) were in the age group of 50-63 years. These findings are consistent with the study conducted by Hafiza Attia Rehman et al. (2019) where maximum patients (79.2%) were in the age group 41-70 years while 20.8% were in the age group 20-40 years.[12] Another study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) also depicted that maximum respondent (94.4%) having diabetes mellitus were in the age group of 41 years and above.[9]

The present study also revealed that majority (147;58.8%) of the patients were male and the rest (103;41.2%) were female. These findings are consistent with the study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) where more than half of the patients (57.2%) were male.[9] Another study conducted by Luke Sy-Cherng Woon et al. (2020) also depicted that more than half of the patients (52.7%) were male.[4] The findings of the present study are inconsistent with the study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran, Sreekumaran Nair (2017) where more than half of the patients (54%) were female [10] and in the study conducted by Siamak Mohebi et al. (2018) females were predominant (67.4%).[5]

The findings of the study revealed that majority (136; 54.24%) of the patients with diabetes mellitus had secondary education and only (18; 7.2%) had completed graduation and above. These findings are in accordance with the study conducted by Luke Sy-Cherng Woon et al. (2020) where maximum of the patients (44.3%) had secondary education.[4] In contrary, study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) revealed that maximum number of patients (16.8%) were graduates.[9] Another study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran, Sreekumaran Nair (2017) also revealed that most of the patients (33.5%) had primary education.[10]

In the present study, maximum (211; 84.4%) number of patients were married which is consistent with the study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran, Sreekumaran Nair (2017) where maximum patients (69.5%) were married.[10] Another study conducted by Luke Sy-Cherng Woon et al. (2020) also showed that maximum patients (77.7%) were married.[4] Study conducted by Siamak Mohebi et al. (2018) also revealed that majority of patients (93.5%) were married.[5]

In the present study maximum number of male patients (90; 36%) were employed in agriculture/ daily wage labor and maximum number of female patients (52; 20.8%) were homemakers and only (1; 04%) was retired. The study conducted by Meng Wang et al.(2018) also revealed that maximum patients based on the number of stressful life events experienced in the past 2 years were engaged in agriculture and related (43.27% with zero (0) stressful life events, 40.94% with one (1) stressful life event and 42.40% with ≥2 number of life events).[6] Study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran, Sreekumaran Nair (2017) also depicted that maximum number of female patients (44.0%) were homemaker.[10]

In the present study maximum (186; 74.4%) number of the patients with diabetes mellitus belonged to lower middle class only (3; 1.2%) belong to upper class according to the revised B G Prasad socioeconomic scale 2021. This is in contrary to the study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) where almost equal number patients belonged to each socioeconomic class according to the modified B G Prasad criteria in 2016.[9]

The findings of the present study revealed that majority (209; 83.6%) of the patients with diabetes mellitus were from nuclear family while (41; 16.4%) were from joint families. This is in accordance with the study conducted by Hafiza Attia Rehman et al. (2019) where majority (120; 63.3%) of the patients were from nuclear family.[12]

Findings of the present study also showed that maximum (191; 76.4%) of the patients with diabetes mellitus were from rural areas and (59; 23.6) patients with diabetes mellitus were from urban areas. This is in contrary to the study conducted by Hafiza Attia Rehman et al. (2019) where maximum (125; 74.2%) of the patients were from urban areas.[12]

In the present study, more than half (138; 55.2%) of the patients with diabetes mellitus had comorbidities like hypertension, hyperthyroidism etc. and rest (112; 44.8%) of the patients with diabetes mellitus did not have any comorbidities. This is in accordance with the study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran Sreekumaran Nair (2017) where more than half (118; 59%) of the patients were shown to bear extra burden of other chronic conditions with hypertension (92; 46%) being the most common comorbid condition.[10] But in contrary, the study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) revealed that only 35 (14%) of the patients had comorbidities present within them.[9]

Findings of the present study also revealed that majority (225; 90%) of the patients with diabetes mellitus were having oral hypoglycemic agents and only (25; 10%) were having insulin as treatment. This is in accordance with the study conducted by Prerna Dogra, Rajendra Prasad S., Subhashchandra B. J. (2017) where majority (184; 73.6%) of the patients were having oral hypoglycemic agents.[9]

In the present study, majority (159; 63.6%) of the patients with diabetes mellitus had family history which is in contrary to the study conducted by Meng Wang et al.(2018) where only few patients had family history of diabetes mellitus.[6]

Findings related to occurrence of life events

Findings of the present study depicted that most of patients had lowest occurrence of life events (234, 93.6%) while none of them had highest occurrence of life events.

Findings of the present study also revealed that in five different domains of life events, health related events ranked 1st with a mean percentage of 39.07 followed by financial events (30.13), personal events (18.67), family related events (16.6) and work-related events (2.08). The findings of the study are in contrary with the study conducted by Ghiyasi M et al. (2015) where the occupational-welfare-financial stressful factor with the highest frequency was retirement.[7]

Findings related to depressive features

The present study findings revealed that majority (128; 51.2%) of the patients with diabetes mellitus had moderate depression and only (1; 0.4%) had severe depression. The findings of the present study are similar to the study findings of Sujoy Majumdar et al. (2021) where only 56 patients (4.1%) met the criteria for major depression and 494 patients (36.16%) for minor depression and no sign of depression was found in 816 patients (59.74%).[8] While the present study findings are in contrary to the study conducted by Abdullahi S Aminu, Varalakshmi Chandrasekaran Sreekumaran Nair (2017) where the most frequent level of depression was a mild depression 42 (21%), followed by moderate depression 24 (12%), and then severe depression 9 (4.5%).[10]

Findings related to perceived social support

Findings of the present study revealed that more than half (185; 74%) of patients with diabetes mellitus had moderate social support and only (7; 5%) patients had high support. These findings are in agreement with the study conducted by Gowthamapura Venkatappa Kavana et al. (2016) where MSPSS scores indicated that a significantly higher percentage of subjects (63.3%) showed low satisfaction with family support {t (59) =2.85, p=0.006}. General satisfaction with social support was perceived only as moderate by majority (45%) of patients.[15] However, study conducted by Clipper F. Young et al. (2020) remains in contrary with the findings of the present study. The findings of the study conducted by Clipper F. Young et al. (2020) revealed that the mean (SD) total MSPSS score of 101 patients was 5.6 (1.2), indicating perceived high support.[11]

Findings related to association between life events and selected demographic variables

The findings of the present study depicted that there was no statistically significant association between life events and selected demographic variables except for occupation as its calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance. This is inconsistent with the study conducted by Meng Wang et al.(2018) where associations tended to be significant in the rural area and the younger age groups of adults.[6]

Findings related to association between depressive features and selected demographic variables

The findings of the present study depicts that the chi square values computed between depressive features and selected demographic variables were not significant at 0.05 level of significance except for occupation & habitat as their calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance. This is partially in agreement with the study conducted by Luke Sy-Cherng Woon et al. (2020) where demographic characteristics employment status is associated with depression along with age, household income and regular religious practice whereas in the present study only occupation and habitat are significantly associated with depression.[4]

Findings related to association between perceived social support and selected demographic variables

The findings of this study revealed that there were statistically significant association between perceived social support and selected demographic variables such as education, occupation & habitat as the calculated value of chi square was higher than table value of chi square (3.841) with 1 df at 0.05 level of significance. This is in contrary to the study findings conducted by Siamak Mohebi et al. (2018) where according to ANNOVA test, no relationship was found between mean score of social support and the educational level.[5]

Findings related to the relationship between life events and depressive events

The present study revealed that r value between life events and depressive features was 0.28 indicating moderately positive correlation between them and t value computed between the two variables was 4.56 which was statistically significant at 0.05 levels of significance. Hence, it can be concluded that people experiencing a greater number of life events had more depressive features. This is supported by the study conducted by Diana M. Naranjo et al. (2011) where it was found that in T2DM patients though negative affect at baseline was the primary predictor of subsequent Major Depressive Disorder (MDD), negative life events along with some other factors also predicted MDD.[13] However, few study has been found in the literature review investigating the relationship between life events and depressive features in diabetes mellitus patients.

Findings related to the relationship life events and perceived social support

In the present study findings illustrated that r value between life events and perceived social support was -0.37 indicating moderately negative correlation between them and t value computed between the two variables was 5.87 which was statistically significant at 0.05 levels of significance. This is consistent with the study conducted by Dr Savitha Soman et al (2015) where total perceived social support significantly and positively correlated with desirable life events (p = 0.01, r = 0.36) in males and total perceived social support significantly and positively correlated with total life events (p = 0.04, r = 0.25), personal life events (p = 0.02, r = 0.29), desirable life events (p = 0.01, r = 0.32) in females.[14] So, it can be concluded that patients experiencing a greater number of life events had low perceived social support.

Findings related to the relationship between perceived social support and depressive features

The findings in the present study depicted that r value between depressive features and perceived social support was -0.17 indicating weakly negative correlation between them and t value computed between the two variables was 2.74 which was statistically significant at 0.05 levels of significance. This is in accordance with the study conducted by Gowthamapura Venkatappa Kavana et al. (2016) where GDS (Geriatric Depression Scale) scores showed a weak but significant negative Pearson correlation with MSPSS scores (r= -0.268).[15] So, it can be concluded that people with more depressive features had low perceived social support.

V. Conclusions

The findings of the present study based on the objectives revealed that majority of the patients had low occurrence of life event over the past 6 months while none of them had highest occurrence of life events. Among the five different domains of life events, health related events were the most occurred life events in the patients with diabetes mellitus. Findings also exhibited that almost equal number of patients had moderate and mild depression with moderate depression being slightly greater than mild depression. Only one patient out of 250 had severe depression while minimal depression was found in none of the patients. Findings also suggested that majority of patients with diabetes mellitus had moderate social support.

The association between life events and selected demographic variables was found to be non-significant except for occupation; chi square values computed between depressive features and selected demographic variables were not significant except for occupation & habitat. The association between perceived social support and selected demographic variables were significant only for education, occupation and habitat.

In this study the correlation between life events and depressive features was found moderately positive correlation i.e., it can be inferred that people experiencing a greater number of life events had more depressive features. A moderately negative correlation was revealed between life events and perceived social support which implies that patients experiencing a greater number of life events had low perceived social support. The findings also depicted that a weakly negative correlation existed between depressive features and perceived social support, hence, it can be concluded that people with more depressive features had low perceived social support.

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