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MEDICATION ADHERENCE, PILL BURDEN AND DEPRESSION AMONG DIABETES MELLITUS PATIENTS IN CHENNAI

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Abstract

The prevalence of diabetes mellitus type II has increased considerably over history. The title 'Diabetes capital of the world' was coined to describe India due to it's high prevalence of the disease. As a result of using newer types of medications for diabetes control, patients are seeing an increase in their pill load, which has been shown to decrease medication adherence and increase the risk of developing depression. Aim – is to evaluate medication adherence , pill burden, and depression among Type II diabetic mellitus patients and its association with sociodemographic variables. A single-center, descriptive cross-sectional study was carried out over the course of 8 weeks in a tertiary care hospital in Chennai. The sampling strategy employed here was a simple random sampling technique using computer-generated tables. One hundred and twenty individuals with Type II diabetes who have been on treatment for at least six months and are older than 40 were included in the study. Patients with comorbidities were excluded. The levels of medication adherence, pill burden attitude, and depression are evaluated with the use of the Medication Adherence Rating Scale, the Pill burden LIKERT Scale, and the Depression Scale: Short Form, respectively. We found that among those with Type II diabetes, 53.33 % were depressed, 62.5 % have a moderately pleasant attitude toward their pill burden, and 48.83 % had a high adherence rate. High medication adherence is found among women (42.11%), those with high incomes (57.14%), and those aged 61–70 (48.52%). Patients with higher incomes (37.50%) and formal education (42.86%) also tend to have more positive attitudes toward medication. There is no depression among males (56.14%) and patients (57.45%) aged 51-60 years.The life expectancy of people with Type II diabetes can be improved by education on medication adherence, which in turn reduces the stress of taking many medications daily and lessens the likelihood of serious complications.

Keywords: *Type II DM, Medication adherence, Pill burden, Depression.*

INTRODUCTION

A long and healthy life is a priceless gift. A person is the richest man in the world if he has sufficient health. Some medical conditions, however, disrupt the lives of millions of people around the world. These include cardiovascular illness, neurological disorders, orthopaedic concerns, metabolic disorders, and diabetes in particular. According to WHO , number of persons with diabetes has grown from 108 million before 1980 to 422 million by 2014 and 522 by 2030. From 4.7% in 1980 to 8.5% in 2014, the worldwide prevalence of diabetes in adults aged 18 and older has increased dramatically. According to the World Health Organization, diabetes accounted for 7.2% of all deaths in 2016.

India has more diabetic patients than any other country, earning it the unfortunate moniker 'Diabetes capital of the world'. As reported by the International Diabetes Federation, the number of people living with diabetes in India surpassed 72,946,400 in 2017, and if no action is taken, that number is projected to rise to 69,910,000 by 2025. Complications from diabetes cause about 3.2 million deaths annually. In

Chennai, where the population is largely comprised of persons under the age of 40, the prevalence of diabetes has skyrocketed over the previous 30 years, increasing by a factor of 38%. About one in ten people in the city will be affected.

The global prevalence of Type II Diabetes Mellitus, a chronic metabolic condition, is rising. Comorbidities, such as hyperlipidaemia and hypertension, are linked to diabetes. Poly pharmacotherapy, or the use of many medications, can cause side effects like increased pill burden and depression and is often necessary for patients to gain control. Among 195 people who had diabetes mellitus who were included in a Dutch Horn trial, 45 percent were also receiving medicine for another condition. Adherence to medications is significantly affected by the pill burden, or the quantity of pills a patient must take daily.

The quality of life for people with Type II diabetes is hampered by complications of their treatment, such as depression and the need to take numerous medications daily. Therefore, it is the duty of nurses to enhance people's lives through education. Our goal in doing this research is to get better understanding of the current state of affairs regarding Type II diabetes patients' medication adherence, pill burden, and depression.

MATERIALS AND METHODS

Single centre, cross-sectional descriptive survey was conducted in a diabetology Outpatient department in a tertiary care centre in Chennai. The duration of the study was 8 weeks. Simple random techniques utilising computer-generated tables were used to recruit 120 patients with diabetes for participation. Participants comprised men and women aged 40 years and who had been diagnosed with type II diabetes mellitus and were receiving therapy for at least 6 months. Patients who were in critical condition, who were pregnant, or who had multiple co-morbidities were not excluded in the study. Socio-demographic scales, medication adherence rating scales, pill burden scales, and depression scales were used to conduct the in-depth interviews that provided the basis for the data. The information was entered into a Microsoft Excel spreadsheet and analysed with IBM SPSS v.26.

RESULTS

Table no:1: Demographic data of the study participants

Demographic variables		No. of patients (n=120)	%
Age	40-50 years	32	26.67%
	51-60 years	47	39.17%
	61-70 years	33	27.50%
	71-80 years	5	4.16%
	>80 years	3	2.50%
Sex	Male	63	52.50%
	Female	57	47.50%
Education	Informal education	22	18.33%
	Primary	46	38.34%
	Middle	33	27.50%
	Secondary	10	8.33%
	Higher secondary	5	4.17%
	PG and above	4	3.33%
Occupation	Unemployed	50	41.67%

	Daily wages	34	28.33%
	Business	10	8.33%
	Private employee	19	15.84%
	Govt employee	7	5.83%
Family income	less than Rs.5000	63	52.50%
	Rs.5001 – Rs.10000	25	20.84%
	Rs.10001 – Rs.15000	16	13.33%
	above Rs.15000	16	13.33%
Duration of illness	6 months – 5 years	53	44.17%
	6 years – 10 years	40	33.33%
	11 years – 15 years	18	15.00%
	above 15 years	9	7.50%
Habits	Smoking	10	8.33%
	Alcohol	12	10.00%
	Tobacco chewing	5	4.17%
	None of the above	93	77.50%
Dietary pattern	Vegetarian	15	12.50%
	Mixed	105	87.50%

According to the data presented in the table above, about 39.17% of the participants were 51 to 60 years old. When compared to females, the majority (52.5%) of those involved were males. The vast majority of them, 81.67%, had completed some type of formal education. Almost half of them, or 41.67 %, were jobless. A little over 52.50% of them had a monthly income of less than 5,000 rupees. Most of them, which made up 44.17%, had been diagnosed with diabetes mellitus anywhere between six months and five years.

Table:2: Level of Medication adherence

Level of Adherence	No. of patients	%
High adherence	49	40.83%
Medium adherence	45	37.50%
Low adherence	26	21.67%
Total	120	100.00%

According to the data presented in the table above, 40.83 % of the participants in the research study had a high level of medication adherence, 37.50% of them had a medium level, and 21.67 % of them had a low level of medication adherence.

Table:3: Level of Pill burden

Level of pill burden	No. of patients	%
Satisfactory	14	11.67%
Moderately satisfactory	75	62.50%
Unsatisfactory	31	25.83%
Total	120	100.00%

Regarding the amount of medication that patients with diabetes mellitus have to take, 11.67% of the people who participated in the study had a level of pill burden that was satisfactory, 62.50% of them had a level of pill burden that was moderately satisfactory, and 25.83% of them had an amount of pill burden that was unsatisfactory.

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Table:4: Level of Depression

Level of Depression	No. of patients	%
No Depression	56	46.67%
Depression	64	53.33%
Total	120	100.00%

Taking into account the severity of depression it was present in 53.33 % who took part in the study, 46.67% of them did not experience any signs or symptoms of depression.

Association between the level of medication adherence, pill burden and level of depression among type II diabetic Mellitus patients with selected demographic variables:

When the adherence score is considered in conjunction with the patient's demographic factors, it was shown that younger patients, female patients, and patients with higher incomes had a greater of adherence score. Patients with a higher level of education, jobs in the government, and with jobs in the government, and patients with higher incomes were shown to have a more positive attitude toward their pill load than those with lower levels of education, jobs in the private sector, and patients with lower incomes. The connection between the individuals' level of depression as measured by the scale and their demographic characteristics. Patients who were older and patients who were female had higher rates of depression than other patients. The chi-square test was used to calculate statistical significance, and it was found to be significant when the value of P was less than 0.03.

DISCUSSION

The percentage of patients with type 2 diabetes who took their medications as prescribed was analysed by questions. That is, 40.83 % had a very high level of medication adherence, 37.50 % had a medium level of medication adherence, and 21.67 % had a very low level of medication adherence. Gabriel Waari (2018) found comparable results, showing that roughly 28.30% of patients had low medication adherence, 26.20% have high adherence, and 45.5 % have high adherence in study groups that were otherwise identical. This is because the Indian public is not very well informed about the need of taking their medications as prescribed.

Regarding their attitudes toward their pill burden, 11.67 % report being satisfied, 62.5 % are only somewhat satisfied, and 24.8% are extremely dissatisfied. A study conducted by Mathias B. (2015), found that just 26.3% of people reported a satisfactory level of pill burden, while 56.4% reported a moderate level, and 17.3% reported an inadequate level. The reason for this is the decline in polypharmacy and drug combinations in Germany. Based on these results, it is clear that Indians do not place a higher value on pill burden than do Westerners.

In patients with Type II diabetes mellitus, the percentage of those suffering from depression was analysed question by question. Thus, while a little over half (53.33%) are depressed, 46.67 % are not. Sheikh M S. (2015) conducted a similar study and found that the incidence of depression were 45.2% and 19.8% between cases and controls, respectively, and was substantially linked with sociodemographic variables and comorbidity. This is due to efforts to disseminate information about depression's causes and how to avoid it through health education.

CONCLUSION

The outcomes of the study emphasize the necessity of teaching people with type II diabetes about the significance of maintaining a regular medication schedule and lowering levels of depression. Patients with

diabetes who receive education from a nurse educator have a lower risk of developing complications, which in turn leads to an improvement in their quality of life and length of expected lifespan.

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