ISSN: 0973-0583

The study of QOL in Diabetes and Hypertension patients

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ABSTRACT

This present study aimed to assess the quality of life of patients with chronic complications of diabetes and blood pressure, leading to planning and measures to prevent or control complications and improve patient's quality of life. This study aimed to evaluate the quality of life of normal healthy people, patients with hypertension and type 2 diabetes.

Materials and Methods: Inclusion criteria for enrolment in this study were age 18 to 45 years and the ability to read and respond to the self-administered questionnaire. Three groups of respondents were enrolled in the study: patients with hypertension, Diabetes, and normal healthy people. This descriptive cross-sectional study was performed on 150 subjects:100 patients (50 with type 2 diabetes and 50 with hypertension) from various government and private hospitals in Madhubani district, Bihar, India, and 50 normal healthy people from the nearest society. A self-made sociodemographic and quality-of-life questionnaire (WHOQOL-BREF) was used as a data collection tool.

Result: There were no significant differences in age group, marital status, education, and place of residence. The groups were significantly different in terms of overall quality of life score ($p=0.05$) in physical dimensions ($p=0.05$) and psychological symptoms ($p=0.05$). So the overall quality of life score of diabetic patients was less likely to have hypertensive patients ($p=0.05$). Remarkably, the quality of life of patients with type 2 diabetes was lower in the subscales of physical and psychological symptoms in patients with high blood pressure ($P<0.05$). The results show that normal healthy people have a better quality of life than diabetes and hypertension patients if we compare the patients of diabetes and hypertension then we find that diabetic patients had a lower quality of life score than hypertensive patients, especially for physical and psychological symptoms. Therefore, planning to improve the quality of life of diabetics is essential.

Keywords: ***Hypertension, Diabetes, Quality of Life***

Introduction :

The force of circulating blood against blood vessel walls is known as blood pressure (BP). The majority of this pressure is caused by the heart's pumping action on the circulatory system. Systolic pressure, or the highest pressure during a single heartbeat, divided by diastolic pressure, or the lowest pressure between two heartbeats, is the standard way to express blood pressure. It is expressed in either kilopascal (kPa) or millimeters of mercury (mmHg) above the ambient air pressure.

The three categories of blood pressure measurements are as follows:

1. Normal: The diastolic pressure is less than 80 mm Hg and the systolic pressure is less than 120 mm Hg.
2. Prehypertension (At Risk) : 60–139 mm Hg for the diastolic pressure or 80–89 mm Hg for the systolic pressure.
3. High blood pressure, or hypertension: a diastolic pressure of at least 90 mm Hg or a systolic pressure of at least 140 mm Hg When your blood vessel pressure is 140/90 mmHg or above, you have hypertension, also known as high blood pressure. Although frequent, if left untreated, it can become dangerous. High blood pressure sufferers cannot exhibit any symptoms. You can only find out by having

your blood pressure measured.

The primary sugar in your blood is called blood glucose, or blood sugar. It is the main energy source for your body. It is derived from your diet. The majority of that meal is converted by your body into glucose, which is then released into your bloodstream. Your pancreas releases insulin in response to an increase in blood glucose. A hormone called insulin facilitates the uptake of glucose by your cells for energy production.

There are four major categories of diabetes: Type 1, Type 2, Gestational, and MODY.

1. Type 1 Diabetes: The hallmark of type 1 diabetes, also known as T1DM, is inadequate insulin secretion. Merely 5–10% of individuals with diabetes are type 1 diabetics (Maitra, 2009).

2. Type 2 Diabetes: The most prevalent kind of diabetes, type 2 diabetes, is brought on by an excessively high blood sugar level. Your body either produces insufficient amounts of insulin or uses it badly if you have type 2 diabetes. As a result, not enough glucose enters the cells and too much stays in the circulation. Type 2 diabetes accounts for 90 to 95 percent of all current cases of the disease; nevertheless, the age at which the diagnosis is made is decreasing, even for children who are obese. Less than 2.5% of Americans between the ages of 20 and 39, 10.5% of Americans between the ages of 40 and 59, and 23% of Americans 60 and older have type 2 diabetes. By diagnosis, up to 50% of beta cell function has been lost in many people. Every year after that, another 3% to 5% could be lost (UK Prospective Diabetes Study Group, 1998).

3. Gestational Diabetes: Known as persistent hyperglycemia, gestational diabetes mellitus (GDM) is a type of diabetes that initially appears during pregnancy. In nearly 21% of pregnancies, hyperglycemia may occur.

4. MODY: An autosomal dominant gene mutation known as MODY impacts insulin synthesis. People with this diagnosis are mostly under-25-year-olds who have a multigenerational family history of diabetes.

Patients with type 2 diabetes have a substantially decreased quality of life in association with symptomatic complications. The data suggest that treatment of depression and prevention of complications have the greatest potential to improve health-related quality of life in type 2 diabetes (Wexler et al., 2020). HRQOL was lower in type 2 diabetic patients than controls and was affected by many factors. Females had lower HRQOL than males, possibly because of a higher incidence of obesity. Uncontrolled diabetic patients had a lower HRQOL than controlled diabetics. Improving HRQOL in diabetic patients is important (AH AI-Shehri et al., 2020). The study findings indicate that patients with diabetes in Iran suffer from relatively poor HRQoL. Therefore, much more attention should be paid to the main determinants of HRQoL to identify and implement appropriate policies for achieving better diabetes management and ultimately improving the quality of life of diabetic patients in this region (Javanbakht et al., 2012). This may help in understanding the concept of QOL in diabetic patients and may also serve the purpose of guiding the reader in the choice of the most appropriate instrument or in the development of a new one. (Palamenghi et al., 2012).

Clinicians and normotensive individuals tend to overemphasize the impact that hypertension has on quality of life, as compared to affected patients. The relatively low impact that hypertensive individuals indicate high blood pressure has on their quality of life May contribute to their lack of compliance with treatment regimens (Stein et al., 2002). The study highlights the role of achieving blood pressure control to ensure a better quality of life for hypertensive patients (Youssef et al., 2012). Although considered to be almost always a clinically silent disease, systemic hypertension impairs the quality of life of patients who suffer from it (Carvalho et al., 2002). Hypertensive patients have significantly poorer QoL than normotensive subjects, even with adjustment for differences. In hypertensives, QoL is affected by some clinical variables that might help us to identify those with worse QoL. Intensification of antihypertensive therapy positively impacted QoL (Roca-Cusachs et al., 2002).

The quality of life of patients with type 2 diabetes was lower in the subscales of physical and psychological symptoms in patients with high blood pressure (Asl et al., 2012). Diabetes and hypertension seem to impair HRQoL comparably. Cardiovascular comorbidities further reduce HRQoL in participants with both chronic conditions. Future research on interventions aimed at improving these participants'

HRQoL is needed. (Poljicanin et al., 2012). The results of this study show that physical exercise, glucose checks frequently, complications, hypertension, duration of diabetes, diet with more red meat, and depression were associated with the QOL of type 2 diabetes patients (Jing et al., 2020). The HRQoL in general was high. It was higher among people with type 2 diabetes mellitus. Factors related to the functionality and control of the disease were associated with a lower perception of HRQoL

Aims & Objectives:

The present study attempts to examine the QOL in patients with hypertension and type 2 diabetes. This study also tries to establish whether psychological problems are more prominent in patients with hypertension and type 2 diabetes than and normal healthy individuals.

Research Design

This study was a quantitative study with a quasi-experimental design and controlled groups. Questionnaires were used for data collection purposes. The study was conducted on an incidental cum purposive sample comprised of diagnosed 150 subjects: 100 patients (50 with type 2 diabetes and 50 with hypertension) from different government and private hospitals of Madhubani District in Bihar and 50 normal healthy subjects from nearby society in the age range of 18 to 45 years. Patients with Known history of significant physical or neurological conditions, Divorced or separated, History of substance abuse, and Family history of mental illness were excluded purposefully. Another Group of normal healthy subjects matched with age, educational qualification, family type, nil history of psychiatric illness, and nil physical disability was taken as a control group. All the respondents from both groups were interviewed and assessed separately.

Tools : A Semi-structured proforma, specially drafted for this study, was used to collect basic information. The World Health Organization QOL-BREF (WHOQOL-BREF) was used to assess Quality of life. The General Health Questionnaire (GHQ-12) was developed by Goldberg and William in 1978 and was applied to the control group in this study and was administered to the psychiatric problem if any.

Procedure:

Individuals who were diagnosed with diabetes and hypertension and who met inclusion and exclusion criteria were identified and contacted for the study. After establishing rapport, a consent form was filled out by the diabetes and hypertension patients who wanted to participate in this study. After that, psychological tests were administered to assess Quality of life using the WHOQOL-BREF scale.

Consequently, 50 normal, healthy subjects were identified with the same socio-demographic details as much as possible using purposive sampling. GHQ was administered to assess any psychiatric problems. Those who found a higher than significant level of psychiatric problems were excluded from the study; needful referral services were offered to those individuals.

Statistical analysis:

Data was coded and entered into a master chart. The statistical analysis was performed with the help of Statistical Package for the Social Sciences (Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.). Frequency table, percentages, means and standard deviation (SD), chi-square test, correlation, and t-test were used. **Result**

Table - 1

Group differences in socio-demographic characteristics between Group 1 ((Normal Healthy Subjects), Group 2(diabetes patients) and Group 3(hypertension patients).

Group 1 (Mean ±SD)	Group 2 (Mean ±SD)	Group 3 (Mean ±SD)	?2 value
31.00 ±07.08	32.02 ± 6.97	34.64 ±6.49	53.886
2.48 ±1.07	2.50 ±0.99	1.80 ±1.05	26.908
1.62 ±0.49	1.60 ±0.49	1.76 ±0.431	3.387
1.16±0.37	1.10 ±0.30	1.14 ±0.35	.808
1.58 ±0.89	1.86 ±0.99	1.80 ±0.95	5.632
3.20 ±1.62	2.22 ±1.02	2.26 ±0.94	56.307
1.32 ±0.47	1.40 ±0.49	1.32 ±0.47	.942
2.32 ±1.00	2.44 ±0.86	2.42 ±0.86	4.613

Table 1 describes there were no significant differences between the two groups in socio-demographic characteristics such as age, education level, relationship status, domicile, religious views, family type, occupation, and monthly family income

Table 2:
Group differences in Quality of Life domains between Group 1 ((Normal Healthy Subjects), Group 2 (diabetes patients) and Group 3 (hypertension patients).

Areas of assessment		Group 1 (Mean ±SD)	Group 2 (Mean ±SD)	Group 3 (Mean ±SD)	t value	P
WHO QOL Brief	Physical	20.40 ±3.45	16.98 ± 2.43	18.14 ± 2.51	-5.723	.000
	Psychological	16.52 ±1.84	12.82 ± 2.38	14.58 ± 2.48	-8.693	.000
	Social relationship	7.72 ±1.07	7.44 ± 1.86	7.66 ± 2.32	-.859	.393
	Environmental	17.82 ±2.83	17.02 ± 1.71	17.80 ± 2.62	-1.632	.106
	QOL Total score	61.80 ±5.32	63.32 ± 9.23	61.40 ± 7.82	1.009	.316

Table 2 describes the group differences in Quality of life scores between Normal Healthy Subjects Diabetes Patients and Hypertension patients.

The findings suggest that Group 1's all-domain mean score was higher than Group 2's. The difference in the Quality of life score was statistically significant. The statistical findings of all domain scores indicate that Diabetes patients had a lower quality of life as compared to normal healthy subjects.

The findings are supported by a systematic review and meta-analysis conducted by Wexler et al., 2020 reported that Patients with type 2 diabetes have a substantially decreased quality of life in association with symptomatic complications. Another study also reported that HRQOL was lower in type 2 diabetic patients than controls and was affected by many factors (AH AI-Shehri et al., 2020).

The findings suggest that Group 1's all-domain mean score was higher than Group 3's. The difference in the Quality of life score was statistically significant. The statistical findings of all domain scores indicate that Hypertension patients had lower quality of life as compared to normal healthy subjects.

The findings are supported by a systematic review and meta-analysis conducted by Trevisol et al., 2011 reported that the Quality of life of individuals with hypertension is slightly worse than that of normotensive individuals. The influence of high blood pressure and the awareness of hypertension requires further investigation. Another study also reported that Patients with hypertension have determined their quality of life at a good or medium level in the physical, psychological, social, and environmental spheres (Snarska et al., 2020).

The findings suggest that Group 3's all-domain mean score was higher than Group 2's. The difference in the Quality of life score was statistically significant. The statistical findings of all domain scores indicate that Diabetes patients had a lower quality of life as compared to Hypertension patients.

The findings are supported by a systematic review and meta-analysis conducted by Chin et al., 2014 reported that We found that both the number and the type of diseases affected QoL scores. Efforts to prevent or manage diabetes. Another study also noted that Most of the participants irrespective of the disease had an average to poor quality of life. The social aspect was the least affected and the psychosocial aspect was the most adversely affected domain in the patients' quality of life (Khongsdir al., 2020).

Conclusion:

The results show that normal healthy people have a better quality of life than diabetes and hypertension patients if we compare the patients of diabetes and hypertension then we find that diabetic patients had a lower quality of life score than hypertensive patients, especially for physical and psychological symptoms. Therefore, planning to improve the quality of life of diabetics is essential.

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