STM JOURNALS

Journal of
Nursing Science & Practice

ISSN: 2249-4758 (Online)
ISSN: 2348-957X (Print)
Volume 15, Issue 2, 2025
May–August
DOI (Journals): 10.37591/JoNSP

https://journals.stmjournals.com/jonsp

Research JoNSP

Impact of Diabetes on Quality of Life of Patient with Diabetes in West Tripura

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Abstract

Throughout the new millennium, diabetes mellitus is on the rise everywhere. According to IDF, the prevalence of diabetes in worldwide was 537 million in 2021; this number is anticipated to climb to 643 million by 2030 if no effective preventative measures are introduced. According to an IDF research, one in three households has diabetic patients, and one in seven adult diabetics worldwide lives in India. India's percentages were 9.3% in 2018, 9.6% in 2022, and is expected to be 10.4% by 2030, according to projections. The purpose of the project is to evaluate how diabetes affects the quality of life for diabetic patients in West Tripura. Descriptive survey design and a quantitative methodology were used in the study process. The study was conducted in two privately operated medical clinics located in West Tripura. A multistage, non-probability purposive sampling method was employed to select the participants, resulting in a total sample size of 50 individuals. Interviews were used to gather data. The patient with diabetes had their quality of life evaluated using the WHO-QOL BREF Scale. Ethics are taken into account at every stage of the research process. The WHO-QOL-BREF is a standardized instrument with a Cronbach's alpha reliability coefficient of 0.89. The study's conclusions demonstrate that both males and females are equally impacted, with only 16% of the samples falling into the 25–40 year age range. In terms of employment, 40% of the samples are unemployed, while 26% of the samples fall into the low income category, which is defined as having a monthly income of less than Rs. 10,000. In terms of marital status, just 10% of the samples are widowed, whereas 70% of the samples are married. Just 38% of the samples belong to a mixed family, while 62% of the samples are part of a nuclear family. Majority of the samples (68%) have a family history of diabetes. 52% of the samples had no prior experience with diabetes. 50% of the samples have no other illnesses, while 42% of the samples have a history of hypertension. 56% of the samples have normal BMI, 70% of the samples are non-vegetarian. 60% of the samples have habits of doing regular exercises. The findings indicate that just 8 (16%) of the 50 participants had a very good quality of life, compared to 22 (44%) who had a fair quality of life and 20 (40%) who had a bad quality of life. Diabetes patients' quality of life is significantly correlated with their monthly income and employment status, and habits of doing regular exercises, however, there is no significant relationship with other demographic variables. This study has implications for various areas of the nursing field, including clinical practice, education, administration, and research. Further research in other domains is necessary to thoroughly examine the results and implement additional awareness campaigns aimed at enhancing the quality of life for those with diabetes. According to the study's findings, people with diabetes mellitus require intensive care and effective techniques to manage their glucose metabolism and maintain good health.

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Received Date: April 10, 2025
Accepted Date: June 19, 2025
Published Date: June 30, 2025

Citation: Debi Chakrabarti, Unmona Borguhain. Impact of Diabetes on Quality of Life of Patient with Diabetes in West Tripura. Journal of Nursing Science & Practice. 2025; 15(2): 17–28p.

Keywords: Diabetes mellitus, quality of life, WHOQOL-BREF Scale, west Tripura, physical exercise

INTRODUCTION

Diabetes mellitus (DM) is a chronic and progressively worsening metabolic disorder characterized by elevated blood glucose levels,

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primarily resulting from an absolute deficiency of insulin in Type 1 DM or a relative deficiency in Type 2 DM [1–3]. In recent years, the global prevalence of diabetes has been steadily increasing, posing a significant public health concern across all nations.

According to the World Health Organization (WHO) [4], more than 346 million individuals worldwide are affected by diabetes, and this number is projected to be more than double by the year 2030 if effective interventions are not implemented. The International Diabetes Federation (IDF) projected in 2012 that the global diabetic population could reach 552 million by 2030, with approximately 90% of cases attributed to Type 2 diabetes. India, unfortunately, holds the distinction of being referred to as the "diabetes capital of the world" due to having the highest number of individuals living with the condition [5, 6].

NEED FOR THE STUDY

According to the Global Burden of Disease Study (2019), data from 2014 indicated that 8.5% of adults aged 18 years and above were living with diabetes. By 2019, diabetes had become the direct cause of 1.5 million deaths worldwide, with nearly 48% of those deaths occurring in individuals under the age of 70 years. Additionally, diabetes was responsible for 460,000 deaths related to kidney disease; and elevated blood glucose levels contributed to roughly 20% of deaths from cardiovascular conditions. Between 2000 and 2019, the global age-standardized mortality rate for diabetes rose by 3%, with a 13% increase observed in lower-middle-income countries.

The researcher was particularly interested in assessing whether recent developments in healthcare delivery, along with advancements in information, education, communication, and mass media, have enhanced awareness among rural populations regarding diabetes, especially concerning the quality of life of those affected. Furthermore, the investigator noted a significant lack of existing literature on the quality of life among diabetes patients in the state of Tripura. These observations served as the primary motivation for undertaking this study [7].

OBJECTIVES OF THE STUDY

- To evaluate the quality of life in individuals with diabetes using the WHOQOL-BREF Scale.
- To examine the relationship between the quality of life of diabetic patients and their selected demographic characteristics.

HYPOTHESIS

The hypothesis is tested at .05 level of significance:

H_1

There will be significant relationship between quality of life of patient with diabetes and their selected demographic variables.

Operational Definitions

1. *Diabetic Patient:* In this study, the term refers specifically to individuals diagnosed with Type 2 diabetes mellitus who are visiting selected private physician clinics across eight districts of Tripura.
2. *Physician Clinic:* This denotes registered private clinical facilities located in eight districts of Tripura, where patients, including those with diabetes, receive medical care from licensed physicians.
3. *Interview Schedule:* This refers to a structured questionnaire developed for the purpose of collecting information on the participants' knowledge and attitudes regarding diabetes self-care, as well as their quality of life.
4. *Quality of Life:* In this context, it represents the diabetic individuals' perceptions of their health, overall well-being, and life satisfaction, as measured by the WHOQOL-BREF scale.

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Assumptions of the Study

It is assumed that the quality of life in individuals with diabetes may be influenced by certain demographic variables.

Delimitations of the Study

The scope of the study is limited to:

1. Diabetic patients attending selected private physician clinics in the West district of Tripura.
2. Those patients who are present and willing to take part in the research.
3. Individuals previously diagnosed with Type 2 diabetes and currently undergoing treatment.

Conceptual Framework

The theoretical framework for this research is based on Dorothy Orem's Self-Care Deficit Nursing Theory.

Review of Literature Focuses On

1. The incidence and prevalence of diabetes.
2. The quality of life among individuals living with diabetes.

Research Design and Methodology

- *Research Approach:* Quantitative methodology was adopted for this study.
- *Study Setting:* The research was conducted in private physician clinics located in Tripura.

Study Variables

- *Independent Variables:* Demographic factors.
- *Dependent Variable:* The quality of life of diabetic patients, as determined by the WHOQOL-BREF scale.

Population and Sampling

- *Population:* All individuals living with Type 2 diabetes in Tripura.
- *Target Population:* Type 2 diabetic patients attending private physician clinics in Tripura.
- *Sample:* Individuals with Type 2 diabetes visiting selected private physician clinics in the West district of Tripura and meeting the inclusion criteria.

Sample Selection Criteria

Inclusion Criteria

- Diagnosed with Type 2 diabetes for at least 2 years.
- Aged 25 years or older.
- Willing to participate.
- Present during the data collection period.
- Able to understand and communicate in Bengali or English.

Exclusion Criteria

- Bedridden or dependent on others for personal care.
- Having other major complications.
- Unable to speak.

Sampling Technique and Sample Size

A multistage non-probability purposive sampling technique was employed to select the participants. The total sample size for the study was 50.

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Tools and Techniques for Data Collection

Tool development involved:

1. Reviewing existing literature.
2. Creating the data collection instruments.
3. Validating content with expert opinions.
4. Assessing the reliability of the instruments.

Tool Components

- *Part A:* Socio-demographic information.
- *Part B:* WHOQOL-BREF scale for measuring quality of life in diabetic patients.

Content Validity

After reviewing relevant literature, the interview schedule was finalized. Content validity was ensured through evaluation by five subject matter experts. Based on their suggestions and discussions with the research guide, revisions were made to the socio-demographic section of the tool.

Translation of the Tool

The finalized tool was translated into Bengali by a language expert to ensure clarity and accessibility for participants.

Data Collection Methods

1. Structured questionnaires were administered to gather socio-demographic data.
2. The WHOQOL-BREF scale was used to assess the participants' quality of life.
3. Each interview took approximately 30–45 min.
4. Informed consent was obtained from all participants prior to data collection.

Reliability of the Tool

The WHOQOL-BREF scale used in the study has a reported reliability coefficient of 0.89. A pilot test to assess the feasibility and reliability of the tool was carried out from *November 1st to November 15th, 2023,* with each session lasting 30–45 min. Ethical clearance was obtained from the university's ethics committee prior to the pilot and main study.

Main Study Details

The final study was conducted in two private physician clinics in the West district of Tripura. Of the 50 total participants, 35 were selected from one clinic and 15 from the other. The multistage non-probability purposive sampling technique was used. Data collection was carried out between February 1st and February 28th, 2024, following all necessary research protocols.

DATA ANALYSIS AND INTERPRETATION

Both descriptive and inferential statistical methods were used to analyze and interpret the collected data. The analysis report is organized under the following sections:

Section 1: Description of the sample characteristics

The study's conclusions demonstrate that both males and females are equally impacted, with only 16% of the samples falling into the 25–40 year age range (Table 1). In terms of employment, 40% of the samples are unemployed, while 26% of the samples fall into the low-income category, which is defined as having a monthly income of less than Rs. 10,000. In terms of marital status, just 10% of the samples are widowed, whereas 70% of the samples are married. Just 38% of the samples belong to a mixed family, while 62% of the samples are part of a nuclear family. Data are presented in the Figures 1–4.

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Table 1. Frequency and frequency percentage of demographic characteristics **(**N=50).

S.N.	Item	Frequency	Frequency percentage
1	*Age*		
	25–40 years	16	32%
	40–55 years	12	24%
	55–70 years	14	28%
	Above 70 years	8	16%
2	*Sex*		
	Male	24	48%
	Female	26	**52%**
3	*Residence*		
	Rural	23	46%
	Urban	27	**54%**
5	*Occupation*		
	Business	18	36%
	Govt. service	12	24%
	Unemployed	20	40%
6	*Monthly income (Rs.)*		
	Below Rs. 10,000	13	26%
	20000–40,000	22	44%
	Above 40,000	15	30%
7	*Marital status*		
	Married	35	70%
	Unmarried	10	20%
	Widow	5	10%
8	*Type of family*		
	Nuclear family	31	62%
	Joint family	19	38%

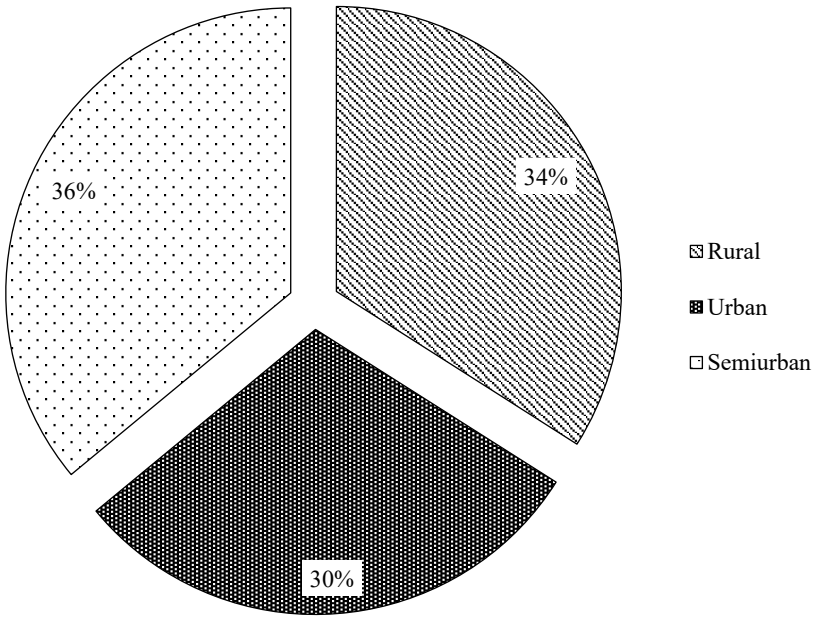

Figure 1. Distribution of sample according to the residence.

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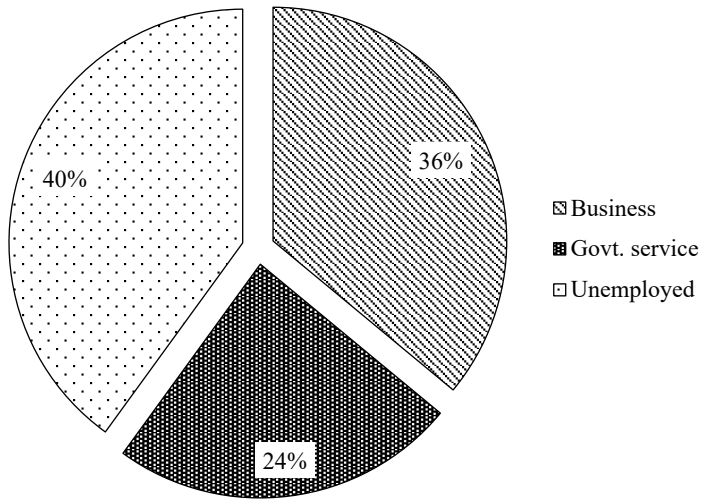

Figure 2. Distribution of sample according to the occupation.

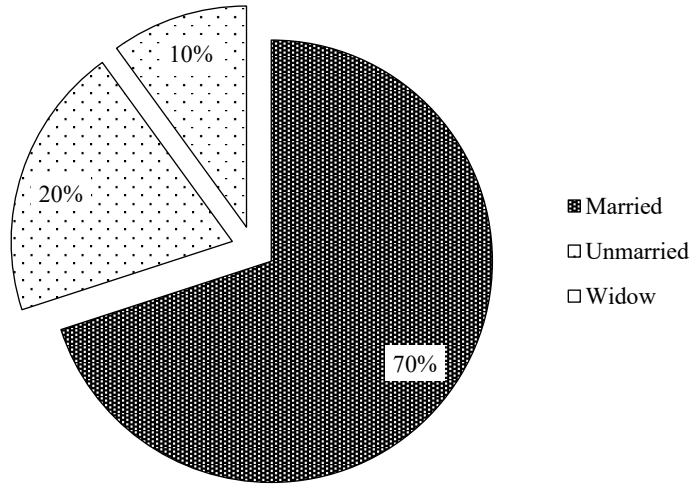

Figure 3. Distribution of sample according to the marital status.

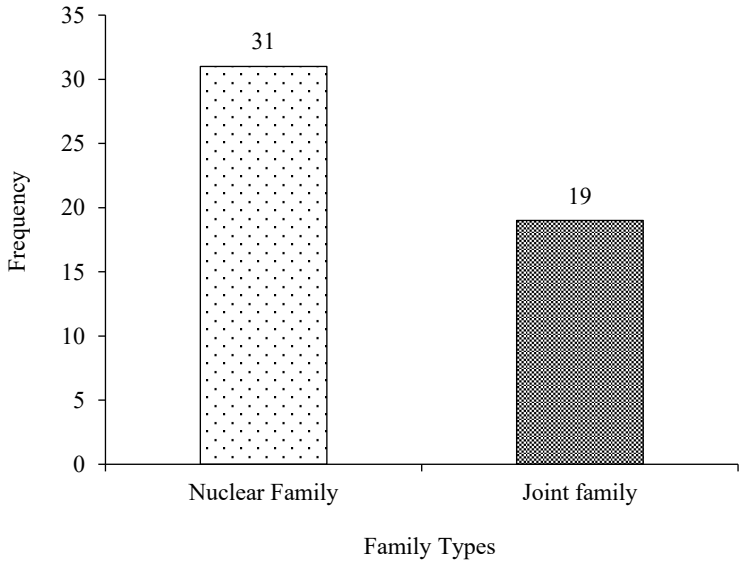

Figure 4. Distribution of sample according to the type of family.

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Majority of the samples (68%) have a family history of diabetes. 52% of the samples had no prior experience with diabetes 50% of the samples have no other illnesses, while 42% of the samples have a history of hypertension (Table 2). 56% of the samples have normal BMI, 70% of the samples are non-vegetarian. 60% of the samples have habits of doing regular exercises. Graphic presentations of the data are shown in the Figures 5–8.

Table 2. Frequency and frequency percentage of Health related information (N=50).

S.N.	Item	Frequency	Frequency percentage
1	*BMI*		
	20–25 kg/m^2	28	56%
	25.1–30 kg/m^2	16	32%
	Above 30 kg/m^2	6	12%
4	*Family history of diabetes*		
	Yes	34	68%
	No	16	32%
5	*How many years of suffering*		
	2–5 years	14	28%
	6–10 years	13	26%
	More than 10 years	23	**46%**
6	*Under treatment*		
	Ant diabetic tablet	20	40%
	Insulin	21	42%
	Both	9	18%
7	*Do you have previous knowledge*		
	Yes	24	48%
	No	26	**52%**
8	*Habits of doing exercise*		
	Yes	30	**60%**
	No	20	40%
9	*Dietary pattern*		
	Vegetarian	15	30%
	Non-vegetarian	35	**70%**
10	*Do you have any other disease*		
	Hypertension	21	42%
	Renal disease	0	0%
	Liver disease	4	16%
	No disease	25	**50%**

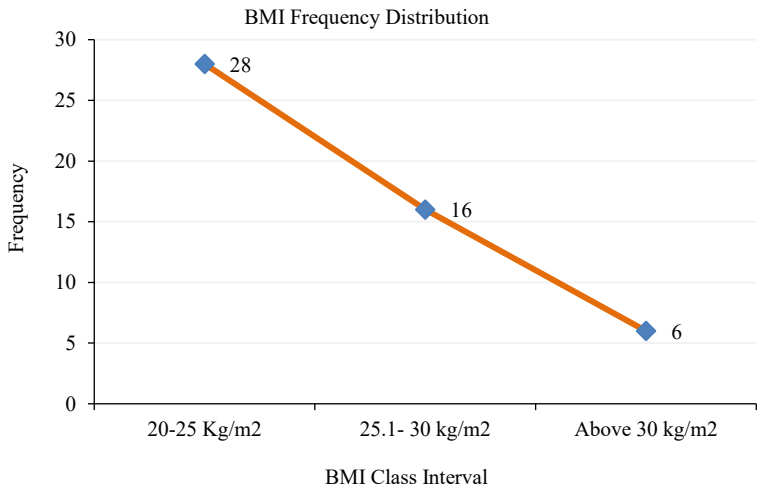

Figure 5. Distribution of sample according to their BMI.

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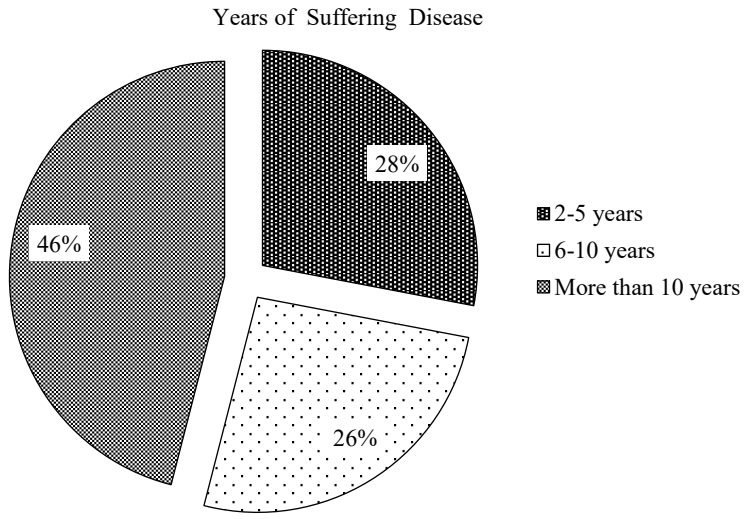

Figure 6. Distribution of sample according to years of suffering from diabetes.

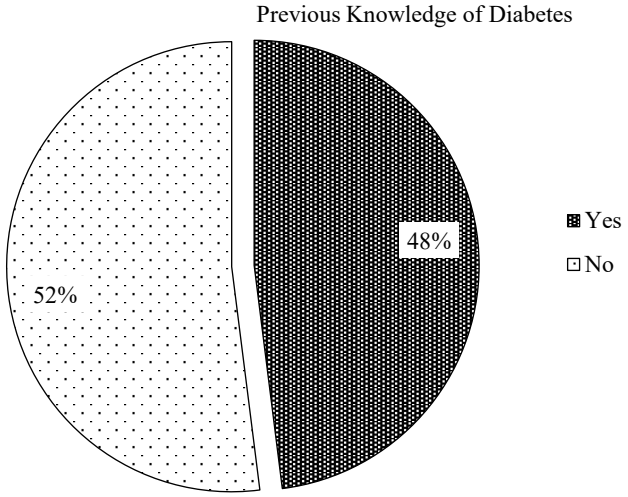

Figure 7. Distribution of sample according to previous knowledge of diabetes.

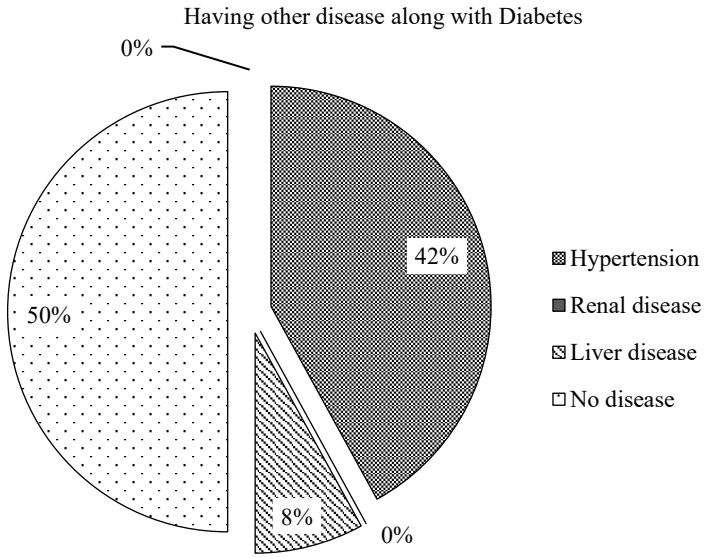

Figure 8. Distribution of sample according to presence of other disease along with diabetes.

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Section 2: Quality of life of patient with diabetes

The findings of the Table 3 show that only 16% of the samples have very good quality of life, 44% of the samples have good quality of life, 40% of the samples have poor quality of life and no one has very poor quality of life. Pie chart depicts the graphic presentation about the level of quality of life in Figure 9.

According to the IRT Parameter estimation, mean and Standard Deviation score in the environmental component was highest: 21.35 and 4.13 respectively. On the other hand, mean and Standard Deviation score of the overall quality of life and general Health was lowest: 5.89 and 1.09 respectively (Table 4). The investigator concluded that more emphasis needs to be given in two components: Social Relationship and overall quality of life and general health.

Table 3. Level of quality of life among diabetes patient (N=50).

S.N.	Score	Frequency(f)	Frequency percentage (f %)	Remarks
1	26–52	0	0%	Very poor
2	53–78	20	40%	Poor
3	79–104	22	44%	Good
4	105–130	8	**16%**	**Very good**

Table 4. IRT parameter estimates for the class of 26 items (N=430).

S.N.	Area	Mean	Standard Deviation
1	Physical Health	19.53	3.30
2	Psychological	16.52	3.16
3	Social Relationship	7.07	2.43
4	Environmental Health	21.35	4.13
5	Overall quality of life and General Health	5.89	1.09

Source: WHO-QOL BREF Scale.

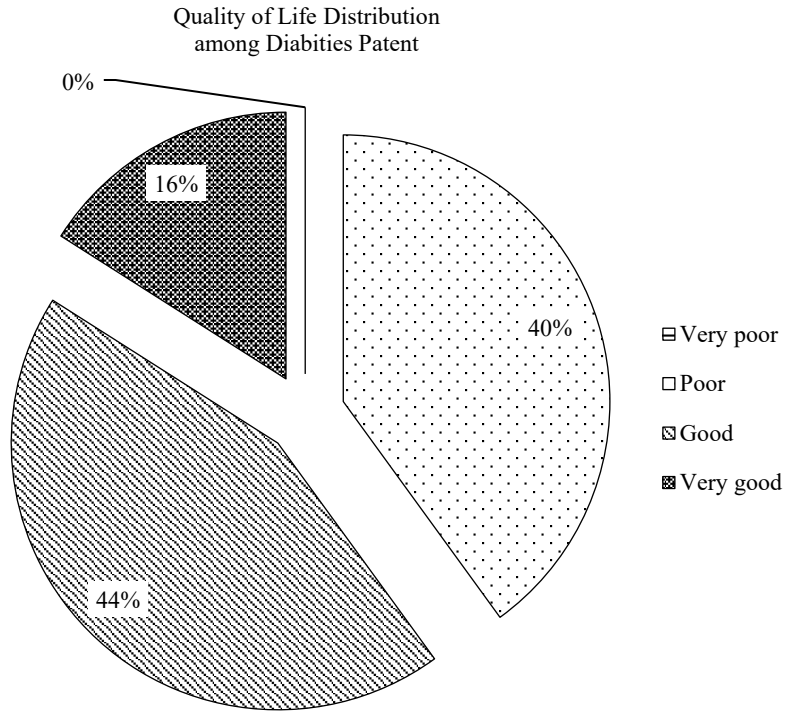

Figure 9. Distribution of sample according to their quality of life.

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Table 5. Association between quality of life of patient with diabetes and selected demographic variables (N=50).

S.N.	Data Item	df	Calculated Chi-square value	Tabulated chi-square value	Remark
3	*Residence* Rural Urban Semi urban	2	4.02	5.99	Not Significant
5	*Occupation* Business Govt. service Unemployed	3	9.11	7.81	Significant
6	*Monthly income (Rs.)* Below Rs. 10,000 20000–40,000 Above 40,000	2	6.71	5.99	Significant
7	*Marital status* Married Unmarried Widow	1	0.4655	3.84	Not Significant
9	*Type of family* Nuclear family Joint family	2	2.361	5.99	Not Significant
12	*BMI* 20–25 kg/m^2 25.1–30 kg/m^2 Above 30 kg/m^2	2	0.0192	5.99	Not Significant
13	*Family history of diabetes* Yes No	1	0.2924	3.84	Not Significant
14	*How many years of suffering* 2–5 years 6–10 years More than 10 years	3	1.9733	7.81	Not Significant
17	*Habits of doing exercise* Yes No	1	5.808	3.84	Significant

Section 3: Association of quality of life of patient with diabetes and their selected demographic variables

The findings of Table 5 depict that diabetes patients' quality of life is significantly correlated with their monthly income and employment status, and habits of doing regular exercises; however, there is no significant relationship with other demographic variables.

DISCUSSION

The conclusions of this study were evaluated in the context of its objectives, theoretical underpinnings, and assumptions. 50 patients with diabetes were recruited in the study from a special clinic in Agartala, west Tripura. Patients were selected from a variety of demographic categories using a multi-stage non-probabilistic purposive sampling technique [8–10]. The majority of pertinent reviewer studies and the investigator's expected literature findings concur with these conclusions.

CONCLUSION

The findings of the study show that the effects are similar for males and females, with just 16% of the samples falling within the 25–40 year age range. Regarding work, 26% of the samples are low

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income, defined as earning less than Rs. 10,000 per month, while 40% of the samples are unemployed. 10% of the samples are widowed, while 70% of the samples are married. 62% of the samples are from nuclear families, whereas only 38% of the samples are from mixed families. The majority of the samples (68%) have a history of diabetes in their families. In 52% of the samples, diabetes was a new experience. Half of the samples have no other illnesses, while 42% of the samples have a history of hypertension. 56% of the samples have normal BMI, 70% of the samples are non-vegetarian. 60% of the samples have habits of doing regular exercises. Only 8 (16%) of the 50 participants had a very good quality of life, according to the data, while 22 (44%) and 20 (40%) had fair and poor quality of lives, respectively. The quality of life of individuals with diabetes is positively connected with their monthly income, work status, and regular exercise routines; however, no significant correlation is observed with other demographic characteristics.

Limitations of the study

This limited the trial to 50 patients from two districts' private physician clinics. To avoid wide generalizations from the study, a non-probability purposeful selection strategy was used to identify diabetes patients.

Recommendations

With the increasing number of diabetic clinics opening in Tripura, the findings of this study can be replicated in similar settings. Assessing the knowledge and attitudes of diabetic patients is essential, as these factors are closely linked to their quality of life. To enhance the generalizability of the results, future research should be conducted on larger sample sizes across diverse populations.

Future Scope of Study

This work has major implications for future research. Nursing personnel and community level health care provider will benefit from this study because they can utilize their knowledge on the improvement of quality of life of patients with diabetes.

Acknowledgements

The authors would like to thank their guide and Vice-chancellor, Registrar of IGTAMSU, Ziro, Arunachal Pradesh for providing all necessary facilities to conduct this research work and also thanks to all concerned who directly and indirectly helped me.

Data Availability

The authors confirm that this study's data is in this research report.

Conflict of Interests

The author has no conflict of interest in any way with this study.

Funding Statement

The current study is based on a PhD Nursing level research work. The authors of the publication confirm that no funding was used in this research.

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