**CHAPTER FOUR**

**RESULTS**

**4.1 Sociodemographic factors of the participants**

Majority of the participants (71%) were within the age group 36-45 years, as more than half of them were female (57%) and married (52%). Most of the participants had secondary education (51%), half of them were unemployed (50%) and the majority earns between 100,000-150,000 monthly. Majority of the participants (68.5%) has been diagnosed of diabetes for the duration of 1-5 years, while majority of them (73%) do not have any complications such as retinopathy and neuropathy. See Table 4.1

**Table 4.1. Sociodemographic factors**

| **Characteristic** | **N = 200** |
| --- | --- |
| Age |  |
| >56 years | 1 (0.5%) |
| 15-25 years | 29 (14.5%) |
| 36-45 years | 142 (71%) |
| 46-55 years | 28 (14%) |
| Gender |  |
| Female | 86 (43%) |
| Male | 114 (57%) |
| Marital Status |  |
| Divorced | 1 (0.5%) |
| Married | 104 (52%) |
| Single | 94 (47%) |
| Widowed | 1 (0.5%) |
| Level of Education |  |
| No formal education | 2 (1.0%) |
| Primary | 2 (1.0%) |
| Secondary | 101 (51%) |
| Tertiary | 95 (48%) |
| Occupation |  |
| Government employee | 25 (13%) |
| Self-employed | 76 (38%) |
| Unemployed | 99 (50%) |
| Monthly Income |  |
| #100000 - #150000 | 101 (51%) |
| #20000 - #50000 | 2 (1.0%) |
| #51000 - #100000 | 39 (20%) |
| > # 200000 | 58 (29%) |
| Duration of Diabetes Diagnosis |  |
| < 1 year | 17 (8.5%) |
| >10 years | 16 (8.0%) |
| 1-5 years | 137 (68.5%) |
| 6-10 years | 30 (15%) |
| Presence of Complications |  |
| Not sure | 36 (18%) |
| No | 146 (73%) |
| Yes | 18 (9.0%) |

**4.2 The Quality of Life among the participants**

The quality of life of the participants was assessed by the WHOQOL-BREF instrument, the instrument has four domains; physical health, psychological health, social relationships and environment. The mean of each domain is calculated to give a set of raw score, the raw scores are transformed to a 0-100 scale, to make the domains comparable. See the formula below

Scoring formula

Transformed score = [(raw score – lowest possible raw score) / (highest possible raw score – lowest possible raw score)] \* 100

As regard the participants’ overall health, most of them (79.5%) claimed their overall health is very poor.

The mean and SD score of the domains are presented in table 4.2 as follows: physical health (29.650 ± 9.622), psychological health (41.550 ± 12.575), social relationships (38.708 ± 7.467), environment (36.250 ± 7.242). The overall mean and SD of the quality of life in this study was 36.539 ± 4.487, see table 4.2. The overall quality of life was classified into poor, fair and good based on the classification scheme on table 4.2.2, it was observed that majority of the participants (99%) had poor QOL while the remaining had fair QOL.

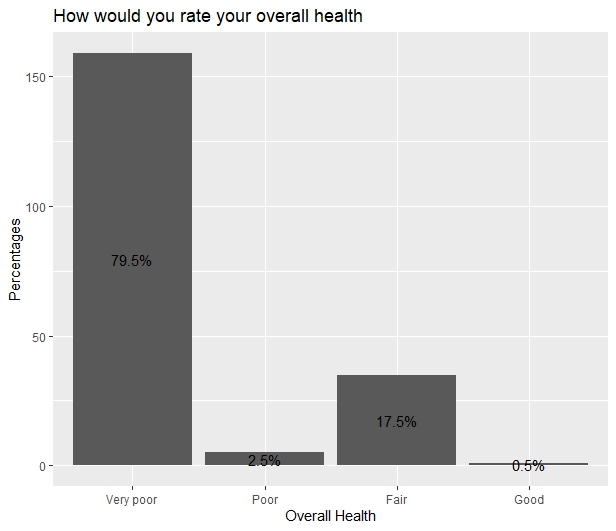


Figure 4.1 Overall health of the Type 2 diabetic patients attending the Medical Outpatient Department (MOPD) at Ahmadu Bello University Teaching Hospital (ABUTH), Zaria, Nigeria.

**Table 4.2.1: Descriptive summary of the 4 domain of the WHOBREF in the study**

| **variable** | **n** | **min** | **max** | **median** | **IQR** | **mean** | **S.D** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Physical health | 200 | 10 | 65.000 | 30.000 | 10.000 | 29.650 | 9.622 |
| Psychological health | 200 | 10 | 65.000 | 35.000 | 15.000 | 41.550 | 12.575 |
| Social relationships | 200 | 25 | 58.333 | 41.667 | 8.333 | 38.708 | 7.467 |
| Environment | 200 | 5 | 65.000 | 35.000 | 10.000 | 36.250 | 7.242 |
| Total | 200 | 23.333 | 62.080 | 36.667 | 5.940 | 36.539 | 4.487 |

**Table 4.2.2: The classification scheme for the WHO BREF Quality of Life**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Range** | **Frequency** | **%** |
| **Physical Domain** |  |  |  |
| Good | 65-100 | 1 | 0.5 |
| Fair | 45-64 | 8 | 4.0 |
| Poor | <45 | 191 | 95.5 |
| **Psychological health Domain** |  |  |  |
| Good | 65-100 | 30 | 15.0 |
| Fair | 45-64 | 54 | 27.0 |
| Poor | <45 | 116 | 58.0 |
| **Social relationship Domain** |  |  |  |
| Good | 65-100 | 0 | 0 |
| Fair | 45-64 | 18 | 9.0 |
| Poor | <45 | 182 | 91.0 |
| **Environment Domain** |  |  |  |
| Good | 65-100 | 1 | 0.5 |
| Fair | 45-64 | 33 | 16.5 |
| Poor | <45 | 166 | 83.0 |
| **Overall QOL** |  |  |  |
| Good | 65-100 | 0 | 0 |
| Fair | 45-64 | 2 | 1.0 |
| Poor | <45 | 198 | 99.0 |

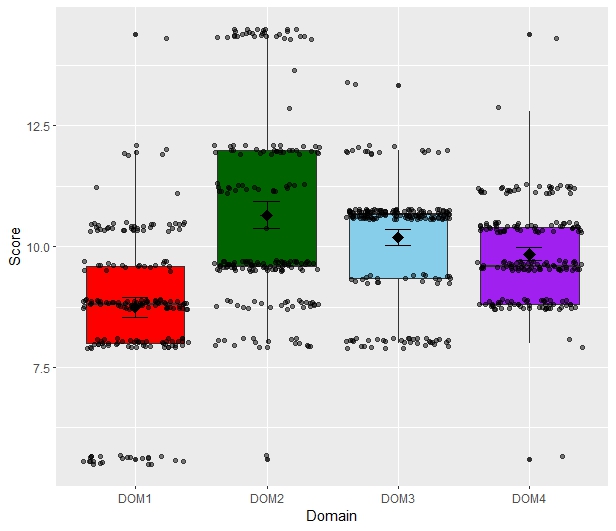


Fig 4.2 Boxplot with Jitter points of the participants in this study, DOM1 = physical, DOM2 = psychological health, DOM3 = Social relationships, DOM4 = Environment.

**4.3 The effect of selected socio-demographical factors on the quality of life of the participants**

The effect of the age, gender, level of education and monthly income on the quality of life was examined using the analysis of variance test (ANOVA) while taking significance at p-value < 0.05. It was observed that, age group had significant effect on the physical domain (0.023) and the environment domain (p-value < 0.001), gender had significant effect on the environment domain (p-value = 0.015), level of education had significant effect on the physical domain (p-value = 0.002) and the environmental domain (p-value <0.001), monthly income had significant effect on the physical (p-value = 0.001), psychological (p-value < 0.001) and the environment domain (p-value < 0.001).

**4.3.1 Hypothesis**

H0: There is no significant association between socio-demographic factors (age, gender, educational level, income) and the quality of life among Type 2 diabetic patients attending the MOPD at ABUTH, Zaria.

H1: There is a significant association between socio-demographic factors (age, gender, educational level, income) and the quality of life among Type 2 diabetic patients attending the MOPD at ABUTH, Zaria.

We fail to accept the null hypothesis (H0) because there were statistically significant difference/association between socio-demographic factors and the quality of life, hence we accept the alternative hypothesis H1: µ1 ≠ µ2

Table 4.3. The effect of selected socio-demographical factors on the quality of life of the participants

| Variables | Physical Health | | Pyschological | | Social Relationship | | Environment | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Age Group |  |  |  |  |  |  |  |  |
| 15-25 years | 34.65 | 5.33 | 39.31 | 9.23 | 37.06 | 4.76 | 36.20 | 5.77 |
| 36-45 years | 28.94 | 9.87 | 41.44 | 13.88 | 38.73 | 8.43 | 35.14 | 7.50 |
| 46-55 years | 28.03 | 10.57 | 44.10 | 7.46 | 40.17 | 3.25 | 41.60 | 4.31 |
| >56 years | 30.00 | - | 50.00 | - | 41.66 | - | 45.00 | - |
| P-value | 0.023\* |  | 0.471 |  | 0.453 |  | <0.001\* |  |
| Gender |  |  |  |  |  |  |  |  |
| Female | 30.69 | 9.55 | 42.90 | 12.04 | 38.95 | 8.80 | 34.82 | 9.08 |
| Male | 28.85 | 9.64 | 40.52 | 12.92 | 38.52 | 6.31 | 37.32 | 5.24 |
| P-value | 0.182 |  | 0.186 |  | 0.688 |  | 0.015\* |  |
| Level of Education |  |  |  |  |  |  |  |  |
| No formal education | 25.00 | 0.00 | 45.00 | 0.00 | 33.33 | 0.00 | 5.00 | 0.00 |
| Primary | 37.50 | 10.60 | 50.00 | 0.00 | 41.66 | 0.00 | 40.00 | 7.07 |
| Secondary | 31.98 | 9.11 | 41.03 | 11.32 | 38.36 | 8.08 | 36.53 | 5.41 |
| Tertiary | 27.10 | 9.60 | 41.84 | 14.01 | 39.12 | 6.88 | 36.73 | 6.51 |
| P-value | 0.002\* |  | 0.739 |  | 0.606 |  | <0.001\* |  |
| Monthly Income |  |  |  |  |  |  |  |  |
| #100000 - #150000 | 26.18 | 8.37 | 39.80 | 13.47 | 39.19 | 6.40 | 36.13 | 5.60 |
| #20000 - #50000 | 25.00 | 0.00 | 45.00 | 0.00 | 33.33 | 0.00 | 5.00 | 0.00 |
| #51000 - #100000 | 35.12 | 12.11 | 35.25 | 5.95 | 41.66 | 8.76 | 36.41 | 5.61 |
| > # 200000 | 32.15 | 7.32 | 48.70 | 11.18 | 36.06 | 7.54 | 37.75 | 6.69 |
| P-value | <0.001\* |  | <0.001\* |  | 0.002\* |  | <0.001\* |  |

\*-significant at p-value <0.05

**CHAPTER FIVE**

**DISCUSSION, CONCLUSION AND RECOMMENDATION**

**5.0 SUMMARY**

This study provides a sobering yet insightful look into the lives of type 2 diabetic patients attending the outpatient department at Ahmadu Bello University Teaching Hospital, Zaria. The findings reveal a population predominantly in their productive years, aged 36-45, with a significant proportion facing economic and educational limitations. These socio-demographic characteristics are critical as they directly influence disease management, adherence to treatment, and, ultimately, health outcomes. The extremely poor quality of life of the patients in this study goes to show that diabetes management must be approached as more than just a clinical challenge—it is a societal challenge. This study recommends a concerted effort from healthcare providers, patients, families, and policymakers to create an environment where patients not only survive but thrive. In order to ensure that patients achieve a better quality of life, even in the face of chronic illness, clinicians must move beyond treating numbers to improving lives, this is by addressing the physical, psychological, and social domains of health.

**5.1 DISCUSSION**

This study recruited diabetic patients attending the medical outpatients' department at the Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. The majority of participants studied were males (57%), falling within the age range of 36-45 years (71%) and were married (52%). The modal age group in this study was 36-45 years; thus, the patients were mainly late youths and young adults. The male dominance and marital status correspond to the study of Issa and Baiyewu., (2006). Most participants had a secondary level of education (51%). It also considered the monthly income of the participants, whereby the majority of them were earning between #100,000 to #150,000 monthly. The duration of the diagnosis of diabetes showed that most of the patients had been diagnosed about 1-5 years ago. The set of sociodemographic data below described the characteristics of the target sample in addition to informing interventions that have specificity on certain target population groups.

The health related quality of life for the participants was measured based on the WHOQOL-BREEF instrument by assessing their perceptions in physical health, psychological health, social relationships, and the environment. This study also reported the following, on the mean and SD: physical health as 29.650±9.622, psychological health as 41.550±12.575, social relationships as 38.708±7.467, environment as 36.250±7.242. The overall mean and SD of the quality of life in this study was 36.539± 4.487. Poor quality of life was present among the majority of participants with 99% and only1% had a fair QOL. The overall QOL in this study is notably lower compared to most earlier studies. In Port Harcourt, Nigeria (Nnachi et al., 2023), diabetic patients had 7.1% good QOL, 65.7% fair QOL and 27.2% poor QOL. Also, the study by Oguntibeju et al., (2010) in the South-western Nigeria, reported 19% poor QOL, 41% fair QOL and 40% good QOL. A further study was made in Iraq in which 39% of the patients reported good QOL, 47% fair QOL and 14% poor QOL. This difference in the overall QOL within these studies might arise because of different populations participating and due to differences in the associated risk factors involved for instance, the socio-demographic and economic status of the participant. For example, the Nnachi et al., study of 2023 selected 347 patients alone, and they excluded the patients who were critically ill.

This study reported that the majority rated their overall health as very poor, constituting about 79.5%. As for the QoL scores on the different domains, the present study showed that the proportion of the diabetic patients with poor QoL was lowest on the psychological health domain (58%), followed by the environment domain (83%), then by the social relationship domain (91%), while that of the physical domain was the highest (95.5%). This is contrary to the findings of Megahed et al (2018) in which less than half of the study group were rated as low QoL in physical health domain while less than half of them were rated as high QoL in social relationships domain. It is however slightly different from the findings of Haydar et al (2014) in which the least percentage of the respondents (17%) had a poor score on physical health domain, followed by environmental domain (18%), then by the psychological domain (19%), while that of the social relationship domain was the highest (22%). The difference in the findings could therefore have been influenced by the various settings under which the studies were conducted. For instance, this study that was conducted in Nigeria and that of Haydar et al. (2014) was conducted in Iraq. Equally, although it was done in Northern Nigeria, that of Oguntibeju et al., (2010), was in Lagos, a city in South-West Nigeria. This study reported the mean and SD as follows: physical health, 29.650 ± 9.622; psychological health, 41.550 ± 12.575; social relationships, 38.708 ± 7.467; environment, 36.250 ± 7.242.

The mean and SD of the quality of life in this study were 36.539 ± 4.487, whereas the overall QoL mean score was 68.89±13.84 in the study by Nnachi et al. (2023). This finding is in agreement with the findings of Abolfotouh et al. (2013) but higher than the mean score obtained in another study conducted by Reba et al. (2018) in Ethiopia, in which a mean score of 52.6±12.1 was obtained. The finding is also contrary to that observed in a study conducted by Mohammadi et al (2016) and Gholami et al27 which revealed lower QoL mean scores 54.6±2.4 and 51.2 respectively. Ababio et al (2017) conducted a study on QoL among diabetes mellitus patients in tertiary hospitals in Nigeria and Ghana. In that study, the mean QoL scores were 64.34 ± 7.34 and 56.19 ± 8.23 in Nigeria and Ghana, respectively. The result of the present study is much lower than that of all similar studies.

In this study, some factors associated with QOL were assessed; it was observed that age group had a significant effect on the physical domain (0.023) and the environment domain (p-value < 0.001); gender had a significant effect on the environment domain, p-value = 0.015; level of education had a significant effect on the physical domain, p-value = 0.002, and the environmental domain, p-value <0.001; and monthly income had a significant effect on the physical, p-value = 0.001, psychological, p-value < 0.001, and the environment domain, p-value < 0.001. This finding is similar to the study of Aschalew et al., (2020) and Gebremedhin et al., (2019) where age was significantly associated with the physical and environmental domains of the QOL. The study of Amin et al., (2022) in Bangladesh reported the association between the level of education and the physical domains as well as the association of monthly income and the psychological domain.

### 5.2 CONCLUSION

The WHOQOL-BREEF instrument of assessing the QoL indeed illustrates a grim picture. Overwhelmingly poor QoL, as observed in 99% of participants, with the majority in physical health and social relationships being among the lowest-scoring domains, reflects the profound burden of diabetes in this population. In keeping with the most well-documented complications of diabetes, the greatest impact on physical health was from chronic states of fatigue, neuropathy, and mobility issues. The social isolation represented by the poor social relationship scores adds to the challenges such patients face.

This study shows a striking contrast to the studies done in other parts of Nigeria and the world. Although methodological differences and populations studied are certainly a factor, it is probable that systemic issues regarding limited access to healthcare, socioeconomic disparities, and regional variations in healthcare delivery account for a great deal of this. Significant associations between the domains of QoL with age, gender, education, and income indicate the need for their consideration in clinical practice and public health interventions. These findings reflect the fact that poorly managed or inadequately supported type 2 diabetes mellitus causes a profound erosion in physical and psychosocial well-being. This study calls for healthcare providers, policymakers, and the community at large to take action regarding the many challenges faced by diabetic patients in this setting.

**5.3 RECOMMENDATIONS**

Based on the finding from this study, the following are the recommendation that should be implemented by clinicians, healthcare provider and policy maker

* **Holistic Patient-Centered Care:** Diabetes care should extend beyond glycemic control to address the broader physical, psychological, and social challenges these patients face. Multidisciplinary teams that include dietitians, psychologists, and social workers should be integrated into routine diabetes care for comprehensive support.
* **Improved Access to Health Care:** Most of the problems seen in these patients arise due to the limited access to very basic health care services. There should be a decentralization of diabetes care to ensure that not only the medication but the diagnostic services and follow-ups reach the rural and disadvantaged areas.
* **Emphasis on Education:** Education of patients about diabetes is a key element in the management of this disease. Organized programs for diabetes education should be established that provide patients with the necessary knowledge and skills to manage their disease effectively. These include education on lifestyle changes, early detection of complications, and adherence to treatment.
* **Community Engagement:** Support groups in the community for people with diabetes may help address the psychosocial issues. Support groups offer a venue for mutual support, sharing of experiences, and learning from others to help overcome feelings of isolation and stigma associated with chronic illness.
* **Socioeconomic Support:** Diabetes management is expensive, and the strong association of income with QoL in the present study underlines the call for financial interventions. Subsidized care, insurance schemes, and government support towards diabetes medicines and consumables can ease the economic burden on sufferers to a large extent.
* **Targeting vulnerable groups for interventions**, specifically young diabetic patients, females, and those in low socioeconomic groups, poor QoL disproportionately strikes, necessitating targeted programs to cover the peculiar needs of these sets.
* **Policy and Advocacy**: Diabetes needs to be identified as a public health priority by policymakers. Investments in diabetes prevention, early detection, and management are critical to reduce the long-term burden of disease. Advocacy efforts also need to address the broader determinants of health-poverty and education-powerfully influencing the outcomes of disease.
* **Research and Continuous Evaluation:** The research calls for continued studies that will help understand the nature and character of the challenges faced by diabetic patients in Northern Nigeria. This should be through longitudinal studies to ascertain the effectiveness of interventions, as well as to understand emerging trends in the care and outcomes of diabetes.

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