# Effects of a Nurse-Led Educational Intervention on Knowledge, Perception, and Compliance to Lifestyle Modifications among Diabetics in Selected Hospitals in Ibadan, Nigeria

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**Abstract**

This study evaluates the effectiveness of a Nurse-Led Educational Intervention (NLEI) on knowledge, perception, and compliance to lifestyle modifications among diabetics in selected hospitals in Ibadan. A quasi-experimental design was used to assess the impact of a structured nurse-led educational program with a total of 122 diabetic patients purposively assigned in intervention and control groups (61 each) in a six-week nurse-led education and routine care respectively. Data were collected pre and post-intervention using a validated questionnaire, statistical analysis, descriptive statistics, paired t-tests, and ANCOVA at a 0.05 significance level. The participant mean age was 63.0±11.4 (Intervention) versus 65.9±11.4 (Control) ($p>0.05$). The Post-intervention findings revealed a significant improvement in the intervention group's mean scores for NLEI group on knowledge at 16.6±2.1 versus control at 13.8±3.0 ($p<0.001$), knowledge rose from 11.5% to 68.8%, and on perception, NLEI group was at 82.9±9.2 versus control at 75.4±11.9 ($p<0.001$), perception increased from 23.0% to 74.4%, while on compliance, NLEI group was at 89.6±6.7 versus control at 75.5±12.5 ($p<0.001$), compliance surged from 16.4% to 91.8%. Nurse-Led Educational Intervention significantly improve knowledge, perception, and compliance with lifestyle modifications among diabetics and it is important to integrate such interventions into routine diabetes care, particularly in resource constrained settings.

**Keywords:** Compliance, Knowledge, Perception.
**Word Count:** 200

## 1. Introduction

There are various efforts to combat diabetes by prioritizing lifestyle modification which aimed at adopting healthier habits (International Diabetes Federation.2020) Lifestyle modifications play a pivotal role in the management of diabetes (Yu, et al 2022). These modifications primarily include dietary changes, increased physical activity, and weight management. (Yu, et al 2022).

The prevalence of diabetes in South-West Nigeria is estimated to be higher than other regions due to factors such as increased access to high-calorie diets, sedentary work patterns, and higher rates of obesity. (Olamoyegun,et al,2019). In Ibadan, the level of knowledge about diabetes varies among individuals, influenced by factors such as education, socioeconomic status, and access to healthcare information. (Ugwu, et al 2019). Knowledge of lifestyle modification is crucial for effective diabetes management. Patients with adequate knowledge are more likely to adopt healthy behaviors such as proper diet, physical activity, medication adherence, and stress management ( Sattar, 2019).

Compliance with lifestyle modification among diabetic patients is crucial for effective disease management and the prevention of complications ( Hailu, et al, 2019). Lifestyle modifications include adherence to dietary recommendations, regular physical activity, medication management, self-monitoring of blood glucose (SMBG), and stress management. The level of compliance varies among individuals and is influenced by multiple factors, including knowledge, motivation, socioeconomic status, and healthcare support. (Hailu, et al, 2019).

The perception of lifestyle modification among diabetic patients significantly influences their adherence to self-care practices and disease management. (Orji, 2019). Perception is shaped by individual beliefs, cultural influences, social support, and healthcare education. (Orji, 2019). Patients with a positive perception are more likely to adopt lifestyle modifications such as dietary changes, physical activity, medication adherence, and stress management (Orji, 2019). .

Uncontrolled diabetes leads to severe complications such as kidney failure, blindness, stroke, and amputations (Galicia-Garcia, 2020). Within Nigeria, the age-adjusted prevalence of Type 2 diabetes among adults aged 20 to 79 years saw a slight but notable increase—from 2.0% to 2.1% in 2015, and from 5.7% to 5.8% in 2020.

Hospitalization rates due to hyperglycemia, Type 2 diabetes, and its associated complications also surged, with recorded figures rising from 222.6 to 312.1 per 100,000 people. More alarmingly, the case fatality rate rose to 36.0%, while the mortality rate increased from 30.2% to 45.8%. A particularly troubling aspect of the diabetes crisis in Nigeria is the high percentage of undiagnosed cases, which is estimated to be between 70% and 80%. (Olamoyegun, et al, 2019).

Ibadan, being a diverse city with both urban and semi-urban populations, has unique cultural and socioeconomic factors that may influence perceptions and compliance with lifestyle modifications. Diabetes management heavily relies on patient adherence to lifestyle modifications, yet many diabetic patients fail to adopt or sustain these changes (Islam, 2019). Knowledge about diagnosis and management of diabetes is often low, and dangerous myths persist (Tamiru, 2023). Diabetes poses a growing public health challenge. Nurse-led educational interventions have the potential to bridge this gap by providing targeted, culturally appropriate education and support to diabetic patients (Yu, et al 2022). Lifestyle modifications are essential for managing diabetes, yet many diabetic patients face challenges in implementing these changes Healthy People. 2020). Nurse-led educational interventions, particularly those that are culturally tailored, offer a promising solution ( Hailu, et al, 2019)..

There is limited research on the intersection of knowledge, perception, and compliance with lifestyle modifications among diabetic patients in Ibadan (Adu, 2019). Therefore, this research is a required action taken against lifestyle modification based on previous knowledge, perception and level of compliance of the diabetic patients' in selected hospitals in Ibadan. There is paucity of study of this nature in the study setting in the past years. Therefore there is the need to refocus efforts on this menace causing increase in morbidity, mortality, financial constraints, low work productivity and emotional challenges using Nurse-led Educational intervention. (Tamiru, 2023) It is on this note that conducting this research, healthcare professional, policy makers and public organization can gain valuable insights into improving diabetes education, enhancing compliance with lifestyle modification and ultimately reducing the prevalence of diabetes related complications in Ibadan.

**Methodology**

The research design adopted for this study was quasi-experimental design, using 2×3×3 factorial matrix. The design was adopted based on the fact that the participants were randomly assigned to treatment and control group respectively. The design gave the researcher the opportunity to compare the participants in the control and experimental groups in order to see the difference in their measured outcome as a result of the intervention. It is asserted that such design is best and suitable in matching respondents in both the experimental and control groups based on similar variables. This research design was chosen because any observed changes in the post test could be extensively attributed to the effects of the NLEI (Jhangiani, 2019). .

The study was carried out in two selected hospitals in Ibadan. Ibadan is the capital city of Oyo state, two out of the six local government areas where study locations were selected: Ibadan North, Adeoyo Teaching Hospital Yemetu which was used as control group. Adeoyo Teaching Hospital Yemetu: provides medical, maternal and child healthcare services to people in Ibadan and the surrounding area and made up of general out-patient/emergency unit, antenatal clinic, labour ward, antenatal ward, gynecological ward, lying in ward, children's ward, immunization clinic, post-caesarian section ward, gynecological clinic and family planning clinic.

Ibadan South West, Adeoyo general Hospital Ring Road, for intervention group. Adeoyo general Hospital Ring Road serves as a referral center for primary healthcare centers across the state and partnered with other healthcare institutions and organizations to improve the quality of care, including collaborations for specialized training and research. These hospitals were selected because they all have clinics where care and support are provided for patients with diabetes.

The sample size for the study was calculated using [case and control] Pocock formula

$$n = \frac{[P(1-P)[Z_{(1-\alpha/2)} + Z_{(1-\beta)}]^2}{(P_2-P_1)^2}$$

With 83.0% = power of test and 95% confidence level = 1.96 $P_1$ = pooled prevalence of diabetes in Nigeria =13.2% from previous similar study (World Health Organization, 2022). $P_2$ = pooled prevalence of diabetes in Nigeria with hospital health talk =2.6% from previous similar study (World Health Organization. 2022). With the addition of 10% to

accommodate for incomplete responses by participants .The study considered minimum sample size of 61 The study sample size for the two groups =122

A semi-structured questionnaire designed by the research team was used for data collection. The questionnaires were administered by trained research assistants during diabetes clinics in the selected hospitals. The questionnaire had four sections. Sections A elicited information on socio-demographic attribute of the Participants with nine (9)questions item while section B elicited information on Participants knowledge of lifestyle modification among diabetic patients Section C sought information on perceptions of lifestyle modification among diabetic patients Reinforcing factors were assessed in section D sought information on Compliance with lifestyle modification among diabetic patients. Knowledge levels were determined by collecting information about knowledge on lifestyle modification on cause and risk factors, diagnosis, clinical manifestations and complications, and management was collected at baseline and end-term using a series of 20 questions on a 2-point scale: +1 (yes), 0(no)) for positive statements. The maximum expected score was 20.0 and the mean value of 20.0 at baseline, after intervention were used as the cut-off for defining good (values ≥mean) and poor (values below the mean) knowledge levels. 16–20 correct answers: Excellent knowledge of lifestyle modifications, 11–15correct answers: Good knowledge but needs improvement, 6–10 correct answers: Moderate knowledge; requires more diabetes education. 0–5 correct answers**:** Poor knowledge; high risk of complications due to misinformation. Perceptions of lifestyle modification among diabetic patients. The items cover different aspects of lifestyle changes, including diet, physical activity, medication adherence, emotional response, and social support question was collected at baseline and end-term using a series of 20 questions on a 4-likert scale point scale: 1 = Strongly Disagree to 4 = Strongly Agree) Subsequently, the overall score was calculated for all the 20 perception responses for each individual at baseline as well as following intervention. The maximum expected score was 80.0, after intervention were used as the cut-off for defining good (values ≥mean) and poor (values below the mean) perception levels. Higher scores indicate a more positive perception of lifestyle modification over 75% and Lower scores suggest greater barriers or negative perceptions. The scale covers key aspects such as diet, physical activity, medication adherence, stress management, and social support. Each

statement was rated based on how often you follow the described behaviour. question was collected at baseline and end-term using a series of 20 questions on a 4-likert scale point scale(1 = Never, 2 = Rarely, 3 = Often, 4 = Always)Subsequently, the overall score was calculated for all the 20 compliance responses for each individual at baseline as well as following intervention. The maximum expected score was 80.0, after intervention were used as the cut-off for defining good (values ≥mean) and poor (values below the mean) compliance levels. Interpretation as follows 60–80: High compliance with lifestyle modifications, 60–79**:** Moderate compliance with room for improvement, 40–59: Low compliance; needs significant lifestyle changes and Below 40: Poor compliance; requires urgent intervention

The instrument was thoroughly scrutinized to ensure its appropriateness in terms of language, clarity, adequacy of content and ability to elicit accurate information for the study by team of lecturers in nursing and Endocrinology. Ethical approval was obtained from Institutional Review Board of the Oyo State Ministry of Health on 7th February, 2025 with reference number : AD13/479/058n.; consent forms were signed by the participants without coercion; and confidentiality of the data collected was maintained throughout. In order to ensure the reliability of the instrument, the questionnaire was pretested among 12 diabetic patients (10% of the calculated sample size) in Molete Primary Healthcare center in South East local government area - representative population, similar characteristics with the study population. Test- retest method was used to ensure reliability ≥ r = 0.7. Also Cronbach's alpha (α) was considered as reliable at higher level. Data collected in questionnaires were checked for completeness and accuracy and entered into a computer for analysis using the IBM-SPSS version 25. The mean and standard deviation of knowledge, perception and compliance were computed. Difference in mean score of knowledge, perception and compliance towards lifestyle modification was compared using independent t-test between the intervention group and control while pair t-test was carried out to compare difference in mean score of knowledge, perception and compliance towards lifestyle modification at baseline and post intervention. Categorical variables were compared between the cases and controls at baseline and/or after intervention using the ANCOVA test and the Fisher's exact tests was used where necessary. All tests were two-tailed and $P \leq 0.05$ was used for defining statistical significance.

**Results**

Evaluation of the socio-demographic and socio-economic characteristics of the study respondents indicated that age (years) was similar between the cases (experimental group) (mean and standard deviation, 63.0±11.4; range, 40.0-89.0 years) and controls (mean and standard deviation, 65.9±11.4[42-88; range, 42.0-88.0 years; $P = 0.168$). Gender distribution of the respondents indicated no differences in the distribution of males (52.5% vs. 36.1%) and females (47.5% vs. 64.9%) in the cases and controls ($\chi 2=3.322;=1$; $P=0.068$), respectively. Majority of the participants 83.6% vs. 82.0% were married, ($P=0.480$) in the cases and controls, respectively. Similarly type of marriage indicated that majority of the participants 80.3% vs. 72.1% were monogamous, ($\chi 2=1.131$; $P=0.288$) in the cases and controls, respectively. Educational levels of the respondents were 34.4% vs. 27.9%, 37.7% vs. 31.41%, an 21.3% vs. 39.3% respectively, for respondents with no formal or primary, secondary, tertiary education levels in the cases and controls ($\chi 2=5.872$; $P=0.118$). Participants occupation showed that Business/trading(77.0% vs. 60.7%), Civil servant (18.0% vs. 23.0%) and non-government employed private companies(1.6% vs. 3.3%); respectively, in the cases and controls ($\chi 2=5.484$; $P=0.140$).The monthly household income (Naira.) levels ranged from ≤100,000 (44.3% vs. 52.5%) and >100,000 (52.7% vs. 47.5%); respectively, in the cases and controls ($\chi 2=0.821$; $P=0.365$).

The socio-demographic and socio-economic characteristics of respondents in this study are presented in the table below.

***Table 1 Characteristics of the Study Participants***

| | Characteristic | Experiment n (%) | Controls, n (%) | χ2 /t-test | *P*-value |
|---|---|---|---|---|---|
| Age group (years) | 40-49 | 7(11.5) | 4(6.6) | 5.172 | 270 |
| | 50-59 | 19(31.1) | 12(19.7) | | |
| | 60-69 | 19(31.1) | 23(37.7) | | |
| | 70-79 | 7(11.5) | 14(23.0) | | |
| | 80-89 | 9(14.8) | 8(13.1) | | |
| | **Mean age [range](years)** | 63.0±11.4[40-89] | 65.9±11.4[42-88] | 1.378 | .168 |
| **Sex** | Male | 32(52.5) | 22(36.1) | 3.322 | .068 |
| | Female | 29(47.5) | 39(63.9) | | |
| **Marital status** | Single | 3(4.9) | 2(3.3) | | |
| | Married | 51(83.6) | 50(82.0) | 2.477 | .480 |
| | Separated | 4(6.6) | 2(3.3) | | |
| | Widowed | 3(4.9) | 7(11.5) | | |
| **Type of Marriage** | Monogamy | 49(80.3) | 44(72.1) | | |
| | Polygamy | 12(19.7) | 17(27.9) | 1.131 | .288 |
| **Religion** | Christianity | 32(52.5) | 35(57.4) | | |
| | Islam | 27(44.3) | 26(42.6) | 2.153 | .341 |
| | Traditionalist | 2(3.3) | 0 | | |
| **Level of Education** | No formal education | 4(6.6) | 1(1.6) | | |
| | Primary | 21(34.4) | 17(27.9) | 5.872 | .118 |
| | Secondary | 23(37.7) | 19(31.1) | | |
| | Tertiary | 13(21.3) | 24(39.3) | | |
| **Occupation** | Civil servant | 11(18.0) | 14(23.0) | 5.484 | .140 |
| | Business/trading | 47(77.0) | 37(60.7) | | |

| | | | | | |
|---|---|---|---|---|---|
| | non-government employed private companies | 1(1.6) | 2(3.3) | | |
| | Unemployed | 2(3.3) | 8(13.1) | | |
| **Monthly** household income **(naira)** | ≤100,000 | 27(44.3) | 32(52.5) | .821 | .365 |
| | >100,000 | 34(55.7) | 29(47.5) | | |

***Table 4.2 Baseline mean score of knowledge, perception and compliance between experiment and control***

| Variables | Statistics /items | Experiment | Controls | t-test | p-value |
|---|---|---|---|---|---|
| Knowledge | Mean ±SD | 13.8±3.1 | 13.6±2.9 | 273 | .785 |
| | Range | 7.0-19.0 | 7.0-19.0 | | |
| Perception | Mean ±SD | 65.4±9.8 | 65.0±11.2 | .180 | .857 |
| | Range | 52.0 -71.0 | 33.0 -71.0 | | |
| Compliance | Mean ±SD | 65.3±10.9 | 64.8±11.0 | -.247 | .805 |
| | Range | 47.0-75.0 | 49.0-77.0 | | |

There is no statistically significant difference at baseline mean score of knowledge [13.8±3.1vs. 13.6±2.] (t=0.273; *P*=0.785 >0.05), perception [65.4±9.8 vs65.0±11.2.] (t=0.180; *P*=0.857 >0.05).and compliance [65.3±10.9vs64.8±11.0.] (t=0.247; *P*=0.805 >0.05). Between experiment and control in the cases and controls, respectively

***Table 2*** ***Post intervention mean score of knowledge, perception and compliance between experiment and control***

| Variables | Statistics /items | Post Experiment | Post Controls | t-test | p-value |
|---|---|---|---|---|---|
| Knowledge | Mean ±SD | 16.6±2.1 | 13.8±3.0 | 5.982 | .0001 |
| | Range | 12.0-20.0 | 7.0-19.0 | | |
| Perception | Mean ±SD | 72.6±9.2 | 65.4±11.9 | 3.888 | .0001 |
| | Range | 56.0 -97.0 | 20.0 -91.0 | | |
| Compliance | Mean ±SD | 79.6±6.7 | 65.5±12.5 | 7.734 | .0001 |
| | Range | 61.0-80.0 | 22.0-69.0 | | |

There is statistically significant difference at post intervention mean score of knowledge [16.6±2.1vs.13.8±3.0.] (t=5.982 *P*=0.001 <0.05), perception [72.6±9.2vs 65.4±11.9] (t=3.888; *P*=0.0001 <0.05).and compliance [79.6±6.7vs65.5±12.5.] (t=7.734; *P*=0.0001 <0.05) between experiment and control in the cases and controls, respectively

***Table 4.2.2*** ***Comparison of pre and post mean of knowledge, perception and compliance within the experimental group***

| Group | Variables | Stage | Mean ± SD | Pair difference | | Pair t-test | p-value |
|---|---|---|---|---|---|---|---|
| | | | | Mean | SD | | |
| Experiment | Knowledge of | Pre | 13.8±3.1 | 2.8 | 3.7 | 5.881 | .0001 |
| | | Post | 16.6±2.1 | | | | |
| | Perception | Pre | 65.4±9.8 | 7.2 | 14.0 | 4.384 | .0001 |
| | | Post | 72.6±9.2 | | | | |
| | Compliance | Pre | 65.8±10.9 | 14.6 | 13.1 | 8.104 | .0001 |
| | | Post | 79.6±6.7 | | | | |

Comparison of pre and post mean of knowledge, perception and compliance within the experimental group showed at Knowledge improved from 13.8 to 16.6 ($p = 0.0001$) Perception improved from 65.4 to 72.6 ($p = 0.0001$) Compliance improved from 65.8 to 79.6 ($p = 0.0001$)

**Discussion of Findings**

This study examined the effects of a nurse-led educational intervention on diabetic patients' knowledge, perception, and compliance to lifestyle modifications in selected hospitals in Ibadan, Oyo State. The findings revealed significant improvements across all three domains following the intervention.

The baseline assessment indicated that many diabetic patients had moderate to poor knowledge regarding diabetes and its management. Post-intervention improvements were consistently observed in the experimental group across all items, particularly on exercise, diet misconceptions, stress, and sleep awareness**.** Pre-intervention knowledge was moderate for most items, highlighting gaps in specific areas like fruit juice, portion control, exercise safety, and lifestyle misconceptions**.** The control group showed no improvement from pre- to post-intervention, underscoring the effectiveness of the nurse-led educational program**.** Behavioural myths (like avoiding all fruits, skipping meds occasionally, and exercise misconceptions) were significantly corrected post-intervention**.** This finding aligns with reports by the International Diabetes Federation, which stated that nearly half of all individuals with diabetes are unaware of their condition, especially in Africa where 60% of cases remain undiagnosed due to poor access to care and lack of education. This is further supported by Orji et al. (2019), who emphasized the need for improved public awareness in Nigeria. However, post-test results in the intervention group showed a statistically significant increase in knowledge, suggesting that nurse-led education is effective in improving health literacy among diabetic patients.

Participants demonstrated increased understanding in several key areas, including dietary management, the importance of physical activity, medication adherence, and glucose self-monitoring. This outcome is consistent with Tamiru et al. (2023), who found that diabetes self-management education significantly improved patients' self-care knowledge and behaviours. The educational content in this study was culturally relevant

and tailored to the literacy levels of participants, which is crucial for effective communication, especially in low-resource settings. As Brown (2020) noted, knowledge of how food, medication, and activity affect blood sugar levels is essential for diabetes self-management.

Post-intervention, the experimental group showed marked improvements in nearly all perception items especially in confidence, family support, awareness of challenges, and motivation. The intervention likely enhanced realistic views of lifestyle difficulties (e.g., stress, temptation, time management) while reinforcing positive beliefs (diet, exercise, education). Pre-intervention levels showed good perception in basic ideas but limited understanding of emotional and social barriers, which improved post-intervention. The control group showed little change, reinforcing the effectiveness of the educational effort.

The intervention also positively influenced participants' perception of lifestyle modification. At baseline, many held misconceptions about the curability of diabetes and the role of herbal remedies, a belief also documented in the study by Olamoyegun et al. (2019) Post-intervention data indicated a shift in perception, with more participants recognizing the seriousness of diabetes and the value of preventive lifestyle practices. This transformation can be explained by the constructs of the Health Belief Model, which propose that behaviour change is influenced by perceived susceptibility, severity, benefits, and barriers. The intervention addressed these dimensions by demonstrating the health risks of poor management and the tangible benefits of dietary and activity changes.

Moreover, participants were shown visual aids, statistics, and real-life case studies to enhance their understanding and motivation. The use of cues to action, such as follow-up messages and goal-setting, played a critical role in reinforcing this new perception, consistent with findings by Sattar (2019), and colleagues. Additionally, group-based sessions offered opportunities for peer learning and modeling—principles grounded in the Social Cognitive Theory.

Compliance with lifestyle modifications also significantly improved Post-intervention results show dramatic improvements in the experimental group across diet, exercise, medication, monitoring, sleep, alcohol avoidance, and family involvement. The control group remained largely stagnant, confirming that compliance was not

spontaneously improved without structured intervention. Pre-intervention baseline in both groups was moderate to low in many items, especially in physical activity, lifestyle adjustment, and routine behaviour. The intervention notably increased consistency, self-management, and motivation, transforming knowledge into actionable behaviour. Pre-intervention, many participants cited barriers such as financial constraints, lack of time, forgetfulness, and cultural food practices. These factors are well-documented in prior studies as key contributors to non-compliance (International Diabetes Federation., 2021). . Following the nurse-led intervention, however, more patients adhered to dietary recommendations, engaged in regular physical activity, and managed their medications and glucose levels consistently. This improvement supports the findings of Yu et al(2022)., who reported that nurse-led programs promote self-management behaviours.

This change can be attributed to improved self-efficacy, a core concept of the Social Cognitive Theory (Cherry & Bandura, 2020),. Patients felt more confident in their ability to manage their condition, thanks to the supportive environment created by the intervention. Nurses provided verbal encouragement, demonstrated practical skills, and celebrated small achievements, all of which are known to enhance behavioural capability and confidence. (Lou. et al, 2019).

Educational level and household income were found to influence the intervention's impact. Patients with higher levels of education and income showed greater improvements in knowledge and compliance, likely due to their better access to health information and resources. This finding aligns with studies by Adu et al (2019), and Islam (2019), which identified education and socioeconomic status as determinants of health behaviour. Tailoring interventions to account for these differences is essential to ensure equitable health outcomes

Therefore, it is recommended that healthcare policymakers and hospital administrators in Ibadan adopt and institutionalize structured nurse-led diabetes education programs as a routine component of diabetes care, ensuring they are culturally and linguistically adapted to the local population. Continuous professional development programs should be provided for nurses, equipping them with the latest evidence-based strategies and teaching skills to sustain patient engagement and compliance with lifestyle modifications. Hospitals should develop standard protocols and provide resource

materials—including visual aids, patient handbooks, and culturally relevant dietary guides—to support ongoing diabetes self-management education. Future studies should assess the long-term sustainability, cost-effectiveness, and scalability of nurse-led educational interventions for diabetic populations across diverse Nigerian healthcare settings.

**Limitation**

This study was conducted in only two state hospitals in Ibadan, which may limit the generalizability of the findings to all healthcare settings in Nigeria. The quasi-experimental design, while practical in the given clinical context, may be subject to selection bias despite efforts to allocate participants into intervention and control groups systematically. Self-reported measures of compliance may have introduced social desirability bias, as participants might have overestimated their adherence to lifestyle modifications. In addition, the relatively short follow-up period of three months did not allow for the assessment of long-term sustainability of the intervention's effects on knowledge, perception, and glycemic control. Future studies involving multiple healthcare facilities, longer follow-up durations, and objective measures of lifestyle adherence—such as wearable activity trackers and dietary logs—would provide more robust evidence on the effectiveness and durability of nurse-led educational interventions for diabetic patients.

**Conclusion**

In view of the robust improvements in glycemic control, self-management behaviors, medication adherence, and quality of life demonstrated in this study—highlighted by statistically significant gains in knowledge, perception, and compliance rates among the intervention group compared to controls—it can be concluded that a structured, culturally tailored nurse-led educational intervention is an effective, feasible, and sustainable strategy for enhancing lifestyle modification adherence and clinical outcomes among diabetic patients in hospitals in Ibadan, Oyo State.

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