AWARENESS AND ADHERENCE TO RECOMMENDED MEDICAL-CARE PRACTICES AMONG DIABETIC FARMERS IN KOGI STATE: IMPLICATIONS FOR STRENGTHENING HEALTHCARE COMMUNICATION POLICIES FOR FARMERS IN NIGERIA

ONOJA, Ibe Ben
Mass Communication Department, Federal University, Oye-Ekiti, Ekiti State, Nigeria, Email: ibe.onoja@fuoye.edu.ng, ORCID: 0000-0002-8166-9157, linkedin.com/in/ibe-ben-onoja-33809463

ONOJA, Nelson Monday
Department of Agricultural Economics and Extension, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria. onoja.mn@ksu.edu.ng, https://orcid.org/0000-0003-3288-5782

ONAKPA, Mohammed Shaibu
Mass Communication Department, Prince Abubakar Audu University, Anyigba, Kogi State, Phone Number: 08068470598; Email: onakpamohammed@gmail.com

ONOJA, Patience Ojonile
Department of Nursing, Federal Teaching Hospital, Ido Ekiti, Ekiti State, Nigeria. Phone Number: +2348066875251. Email: akubopatience@gmail.com. ORCID: 0000-0003-2438-9084

ABSTRACT
Diabetes mellitus remains a major public health challenge that requires sustained adherence to recommended medical-care practices for effective management. However, evidence on awareness and adherence among diabetic farmers in Kogi state is limited. Hence, this study assessed diabetic farmers' awareness of and adherence to recommended medical care practices to inform healthcare communication policies in Kogi State and Nigeria. It specifically examined the socio-economic characteristics of diabetic farmers, their level of awareness and adherence to recommended medical care practices, and the barriers to adherence and their determinants. Using a multistage sampling procedure, 90 respondents (30 Kogi central, 30 Kogi east, and 30 Kogi west) were randomly sampled for the study. Data were collected using a well-structured questionnaire and analysed using descriptive and inferential statistics. Findings revealed that the respondents were predominantly male (54.4%) and married (63.3%), had a mean age of 53.6 years, possessed at least O-level education (55.6%), and earned an average monthly income of ₦87,695.56. The majority (60.0%) of respondents were fully aware of the recommended medical care practices, with relatively high adherence (53.3%). The major reasons for non-adherence were worry about medication safety (1.65±0.56) and efficacy of prescribed medications (1.62±0.55); unaffordability of the prescribed medications (1.56±0.65); inadequate access to quality healthcare facilities (1.58±0.64); unaffordability of recommended diets (1.58±0.66); reliance on local herbs (1.51±0.69); and spiritual interventions (1.50±0.68). Adherence to recommended medical care practices had a positive correlation with age ($\chi 2=0.762$; P-value=0.028), education ($\chi 2=2.726$; P-value=0.016), and awareness ($\chi 2$=5.023; P-value=0.025). The study concludes that diabetic farmers had a high level of awareness, which translated into relatively high adherence.

Keywords: Farmers' awareness; Adherence; Diabetes medical-care practices; Healthcare Communication policy.

INTRODUCTION

Diabetes mellitus is one of the fastest-growing non-communicable diseases globally and a major public health concern because of its associated morbidity, mortality, and economic burden. The available diabetes statistics show a growing global burden for individuals, families and countries. This is evident in the 10th edition of the International Diabetes Federation (IDF) Diabetes Atlas (2021) reports that approximately 537 million (10.5%) adults worldwide aged 20-79 years have diabetes (this include both type 1 and type 2 diabetes, as well as diagnosed and undiagnosed diabetes) with projection to rise to 643 million, and 783 million by 2030 and 2045, respectively. The growing prevalence of diabetes is particularly alarming in low-and middle-income nations (Nigeria inclusive), where healthcare systems often face challenges in diagnostic and management services (Ojewale et al., 2019).

Over the years, Nigeria has witnessed a substantial rise in the prevalence of diabetes, posing a significant challenge to public health, particularly among rural dwellers (who are predominantly farmers), whose access to quality healthcare services and diabetes education remains limited (Okurumeh et al., 2022). Effective diabetes management, therefore, requires continuous adherence to recommended medical care practices such as regular medical screening, adherence to prescribed medications, regular blood glucose monitoring, healthy diets, physical exercise, and other practices (Osiberu et al., 2021). Furthermore, farmers constitute a critical segment of Nigeria's labour force and play a major role in national food systems. However, the demanding nature of farming activities, coupled with limited access to quality healthcare facilities in rural communities, may affect their awareness and/or adherence to recommended diabetes medical care practices. These may increase the risk of complications, reduce productivity, and adversely affect household livelihood systems.

Although there have been some developments in diabetes awareness and medical care practices in Nigeria, there is a dearth of empirical studies, particularly on diabetic farmers in Kogi State. Hence, awareness and adherence to recommended medical care practices among diabetic farmers in Kogi State were investigated to generate empirical evidence to inform the development of context-specific healthcare communication policies aimed at improving diabetes control among the farming populace in the state.

Objectives of the Study

The general objective of this study was to investigate awareness of and adherence to recommended medical care practices among diabetic farmers in Kogi State, with implications for strengthening healthcare communication policies for farmers in Nigeria. The study specifically:

i. examined the socio-economic characteristics of respondents in the study area;
ii. ascertained their awareness and adherence to recommended medical-care practice;
iii. investigated the possible reasons for non-adherence to recommended medical-care practices among the respondents in the study area;

iv. determined the factors influencing adherence to recommended medical-care practices among the respondents.

v. examined the implications of diabetic farmers' awareness and adherence to recommended medical-care practices for strengthening healthcare communication policies among farmers in Kogi state.

METHODOLOGY

The study was carried out in Kogi State, located in the North-Central geopolitical zone of Nigeria. The State was created on 27th August 1991 from parts of the former Kwara and Benue states, with a land mass of 27,747 km^2 (National Bureau of Statistics, NBS 2022). Kogi State shares boundaries with Nasarawa State, Benue State, Enugu State, Anambra State, Edo State, Ondo State, Ekiti State, Kwara State, Niger State, Delta State, and the Federal Capital Territory (FCT) Abuja (Olajide et al., 2020). The State has twenty-one (21) Local Government Areas (LGAs) spread across the three (3) Senatorial Districts (namely: Kogi Central with 5 LGAs, Kogi East with 9 LGAs, and Kogi West with 7 LGAs). The state is inhabited by diverse ethnic groups, including the Igal, Ebira, Okun-Yoruba peoples, Basa and others. The people are predominantly farmers. The study population comprises all registered diabetic farmers currently receiving medical care at hospitals in the state.

A multistage sampling procedure was used to select respondents for the study using purposive and simple random sampling techniques. Firstly, three (3) Senatorial Districts, namely Kogi central, Kogi east, and Kogi west, were purposively selected for the study to ensure adequate coverage of diabetic farmers across diverse geographical, socio-economic, religious, and healthcare facilities. Secondly, one (1) LGA each, namely Okene LGA (Kogi central), Dekina LGA (Kogi east), and Lokoja LGA (Kogi west), were purposively selected to represent the Senatorial districts in the State. These LGAs were selected as the most populous in their Senatorial districts, with a high concentration of farming households, and they host several public healthcare facilities that provide medical services to diabetic patients. Thirdly, one (1) major public healthcare facility was purposively selected from each of the LGAs, namely Okene LGA (General Hospital, Okene), Dekina LGA (Prince Abubakar Audu University Teaching Hospital, PAAUTH, Anyigba), and Lokoja LGA (Federal Medical Centre, FMC-Lokoja). These facilities were chosen due to the high influx of diabetic patients. Fourthly, thirty (30) confirmed diabetic farmers, each of whom was registered and receiving medical care at the selected facilities, were randomly selected, giving a total of 90 respondents for the study.

Primary data were generated from the respondents using a well-structured questionnaire. The test instrument was originally designed in English and translated by the interpreter into Igala, Ebira, Yoruba, Bassa and other local dialects for those who could not read or speak English. Verbal consent was solicited from the respondents before the instrument was administered.

This was achieved with the help of trained research enumerators and interpreters, where necessary, such as Nurses, Laboratory technicians, medical students, and other medical personnel who volunteered to be part of the study. However, the diabetic patients who were critically ill and/or incapable of answering the questions were excluded from the study. The data collected for the study were analysed using descriptive statistics (frequency counts, means, percentages and standard deviation), mean scores from Likert-type scales and inferential statistics (Chi-Square) at $\alpha = 0.05$ to test for associations between the selected variables and adherence to medical-care practices.

RESULTS AND DISCUSSION

Socio-economic characteristics of the respondents

Findings in Table 1 revealed that the respondents were predominantly male (54.4%) and married (63.3%), had a mean age of 53.6 years, possessed at least O-level education (55.6%), and earned an average monthly income of ₦87,695.56. The predominance of male respondents suggests that farming in the study area remains largely male-dominated. Also, men often control agricultural resources and the decision-making process in rural Nigeria, which may influence healthcare-seeking behaviour. The finding aligns with a study conducted in Benue state, Nigeria, where 54.8% of diabetic patients were male, indicating a similar gender pattern among diabetic patients in agricultural communities (Akinbule et al., 2025). However, the finding contradicts the submission of Okurumeh et al. (2022) that more females (55.6%) than males were reported with cases of type 2 diabetes mellitus at a tertiary hospital in Ekiti state, Nigeria. This variation may be due to the type of diabetes patients sampled for both studies.

The mean age of 53.6 years indicates that most respondents were middle-aged adults. This is not surprising because the risk of developing diabetes increases with age due to physiological changes, reduced insulin sensitivity, and prolonged exposure to lifestyle and occupational risk factors (Schrems et al., 2025). Similar studies among diabetic patients in Nigeria reported mean ages ranging from approximately 57 to 62 years, confirming that diabetes is more prevalent among middle-aged and older adults (Okurumeh et al., 2022). The implication is that healthcare policies targeting diabetic farmers should focus on age-specific education, routine screening, and continuous monitoring programmes for older farming populations.

The high proportion of married diabetic farmers (63.3%) suggests that family support may play a significant role in diabetes management. Marriage often provides emotional, financial, and social support that can enhance treatment adherence, clinic attendance, dietary compliance, and medication use. This finding is consistent with previous Nigerian studies that reported a predominance of married diabetic patients and established that family support positively influences diabetes self- management behaviours (Ojewale et al., 2019; Akinbule et al., 2025). Consequently, healthcare policies should integrate family-centred diabetes education and counseling programmes to strengthen adherence to recommended medical-care practices.

The average household size of 5 persons suggests the typical family structure in rural Nigeria. Household size may have both positive and negative implications for diabetes management. For instance, large households can provide a social support system, assistance with farm work, medication reminders, and caregiving services, which may enhance adherence to recommended medical care services. On the other hand, larger households may increase household expenditure and place pressure on limited family resources, thereby reducing the possibility of diabetic farmers to meet healthcare costs, purchase necessary medications, and maintain recommended diets. Hence, healthcare policies should consider family economic status when planning interventions for diabetic farmers.

Furthermore, the educational attainment of the respondents was encouraging, with 55.6% having at least a secondary education. Education enhances literacy, comprehension of medical instructions, awareness of disease complications, and adherence to recommended medical care practices. Evidence from previous studies indicates that higher educational attainment is associated with better diabetes knowledge, health literacy, and self-management practices (Aje and Fakeye, 2024).

More so, the average monthly income of ₦87,695.56 indicates a modest economic status among the respondents. Income is a critical determinant of healthcare access because diabetes management requires regular medical consultations, laboratory investigations, medications, and adherence to dietary recommendations (Osiberu et al., 2021). Although the average income of diabetic farmers may support basic healthcare needs, rising healthcare costs could limit consistent adherence to recommended medical care practices. This finding suggests the need for policy reforms to improve health insurance coverage, subsidize diabetes medications, and expand access to affordable healthcare services.

Diabetic farmers' awareness of recommended medical-care practices

The findings in Table 2 revealed that the majority (60%) of the diabetic farmers were aware of the recommended medical care practices for diabetes management. This indicates that the diabetic farmers in the study area possessed essential knowledge of diabetes care practices, such as regular medical check-ups, blood glucose monitoring, taking medications as prescribed, maintaining healthy dietary habits, and engaging in physical exercise.

The relatively high level of awareness may be attributed to exposure to healthcare services, health education programmes, and regular interactions with healthcare personnel. The finding supports the findings of Osiberu et al. (2021), who reported a high level of awareness of recommended diabetes medical care practices among adults in South-western Nigeria. However, the finding also implies that 40% of diabetic farmers were unaware of recommended medical care practices. This suggests the need for strengthened diabetes education programmes, particularly among the farming populations. Thus, healthcare policies should focus on expanding community-based awareness campaigns, improving access to diabetes information, and integrating diabetes education into primary healthcare and agricultural advisory services to enhance disease control among diabetic farmers.

Table 1. Socio-economic characteristics of the respondents (n = 90)

Variables	Frequency	Percentage	Mean/Mode
Age			
39-45 years	17	18.9	
46-50 years	22	24.4	
51 years and above	51	56.7	53.6±7.97
Sex			
Male	49	54.4	Male
Female	41	45.6	
Marital Status			
Married	57	63.3	Married
Unmarried	33	36.7	
Household Size			
1-3	29	32.2	
4-6	41	45.6	5.0±2.35
7 Persons and above	20	22.2	
Educational Status			
No formal education	14	15.6	
Primary	26	28.9	
Secondary	32	35.6	Secondary
Tertiary	18	20.0	
Estimated monthly income (₦)			
≤70,000	16	17.8	
70,001 - 100,000	56	62.2	₦87,695.56
≥100,001	18	20.0	

Source: Field survey (2025)

Table 2: Respondents' distributions by awareness of recommended medical-care practices (n = 90)

Awareness of recommended medical-care practices	Frequency	Percentage (%)
High	54	60.0
Low	9	10.0
No awareness	27	30.0
Total	**90**	**100**

Source: Field survey (2025)

Diabetic farmers' adherence to recommended medical-care practices

The results in Table 3 revealed that slightly over half (53.3%) of diabetic farmers adhered to recommended medical care practices. Specifically, most respondents reported taking their medications as prescribed (1.58±0.64); consulting their doctor before stopping or changing medications (1.50±0.68); and avoiding combining prescribed medications with local herbs (1.55±0.68). This indicates a moderate level of adherence to recommended medical care practices among diabetic farmers, suggesting that many recognized the importance of following professional medical advice in managing their health. Adherence to recommended medical-care practices is essential for achieving effective glycaemic control and preventing diabetes-related complications (Aje and Fakeye, 2024).

Table 3: Distribution of respondents by adherence to recommended practices (n = 90)

Recommended medical-care practices	**Mean±S.D**		
I take medicine as prescribed	1.58±0.64		
I consult a doctor before stopping/cutting back on my medications	1.50±0.68		
I normally travel with your medications	0.92±0.86		
I engage in self-medication in the last seven days	1.22±0.77		
I substitute your doctor's prescriptions with local herbs	0.76±0.83		
I do not combine doctors' prescriptions with local herbs	1.55±0.68		
I do not abandon doctor's prescriptions for spiritual interventions	1.46±0.66		
I do the recommended exercise for like 22 minutes every day	0.75±0.79		
I stop exercising without consulting my doctor	1.47±0.69		
I stopped taking the recommended diet	1.06±0.79		
Follow recommended when away from your home for days	0.89±0.76		
Substitute dietician's recommended diets with local herbs	1.62±0.59		
Abandon dietician's recommended diets for spiritual interventions	0.73±0.82		
Stick to recommended diet even when out on social functions	0.79±0.83		
Use protective gloves in injury-prone places	0.86±0.83		
Engage in injury-prone activities	0.78±0.79		
Promptly consult doctor when any health-related change is noticed	0.91±0.87		
Regularly check sugar level and Blood pressure as advised	1.53±0.65		
Normally keep the records of sugar and BP test as advised	0.77±0.84		
Keep the routine visit to the hospital as indicated	0.97±0.86		
Substitute the prescribed drug with another without consulting doctor	1.50±0.61		
Store medications in cool, dry place at normal room temperature	0.93±0.77		
Overall adherence score:	**Frequency**	**Percentage**	
Low (3 – 26.09)	42	46.7	
High (26.1-40.0)	48	53.3	**26.1±9.16**
Total	**90**	**100**	

NB: Mean ($\bar{x}$)≥1 = Adhere and Mean ($\bar{x}$)<1 = No adherence. **Source:** Field survey (2025)

Despite the relatively positive result, the finding indicates that nearly half (46.7%) of the diabetic farmers did not adequately adhere to recommended medical care practices. This raises concerns about the risk of poor glycaemic control and diabetes-related complications among diabetic farmers. Thus, strengthening healthcare policies by improving diabetes counseling services, implementing regular follow-up programmes, ensuring affordable access to medication, and expanding community-based adherence support initiatives is necessary to enhance treatment compliance among farmers.

Diabetic patients' reasons for non-adherence to recommended self-care practices

As shown in Table 4, the major reasons for non-adherence to recommended medical-care practices among diabetic farmers were worry about the long-term effects of the medications (1.65±0.56); ineffectiveness of the prescribed medications (1.62±0.55); poor access to affordable prescribed medications (1.56±0.65); inadequate access to quality medical facilities (1.58±0.64); poor access to affordable recommended diets (1.58±0.66); use of local herbs (1.51±0.69); and seeking spiritual interventions (1.50±0.68).

The finding suggests that non-adherence to recommended medical-care practices among diabetic farmers is driven by treatment-related concerns, financial constraints, and socio-cultural/religious influences. The fear of long-term medication effects and doubts about treatment effectiveness support the assertion by Rafhi et al. (2024) that patients' beliefs and perceptions about medications significantly influence adherence behaviour. For instance, when patients perceive medications as harmful or ineffective, they are less likely to comply with prescribed treatment management.

The unavailability and unaffordability of recommended medical care practices, such as healthy dietary intake and medications, constitute economic constraints in diabetes management. This finding is consistent with Amaechi et al. (2024), who reported that the high cost of medical care and limited access to essential medications are major barriers to treatment adherence in Nigeria. Similarly, the inadequate access to quality health facilities observed in this study's findings supports the position of Eze et al. (2025) and Ezeaka et al. (2025), who identified poor healthcare access as a major challenge to effective healthcare management, particularly in low-income countries (including Nigeria).

Furthermore, the use of local herbs and reliance on spiritual interventions highlights the influence of culture and religious beliefs on health-seeking behaviour. Mustafa et al. (2025) noted that some diabetic patients in Nigeria often combined conventional treatment with traditional remedies and spiritual healing practices due to cultural beliefs and perceived efficacy. Such practices may undermine adherence to recommended medical-care practices.

Table 4: Distribution of respondents by reasons for non-adherence to recommended self-care practices (n = 90)

Reasons for non-adherence	Mean ($\bar{x}$)±S.D
Worry about the long-term effects of the medications	1.65±0.56
Worry about becoming too dependent on the medications	1.46±0.69
Dissatisfaction with my family's supports towards my medications	0.78±0.83
Dissatisfaction with health care provider's supports	0.91±0.87
Unavailability/Unaffordability of the prescribed medications	1.56±0.65
Phobia for prescribed medications	0.80±0.82
Unavailability of quality medical facilities in my locality	1.58±0.64
Unavailability of recommended exercise facilities in my locality	0.63±0.58
Unavailability of exercise instructors in my locality	0.81±0.82
The recommended exercises take too much of my time	0.79±0.84
The recommended exercises are too stressful for me	1.50±0.68
Unavailability/ Unaffordability of recommended diets	1.58±0.66
Poor taste of the recommended diets	0.82±0.83
Time consumption of the preparation of the recommended diets	0.86±0.83
Perceived ineffectiveness of recommended diabetic treatments	0.72±0.80
Ineffectiveness of the recommended diabetic treatments	1.62±0.55
Use of local herbs	1.51±0.69
Seeking Spiritual interventions	1.50±0.68

Mean ($\bar{x}$)≥1 = Major reason, and Mean ($\bar{x}$)<1 = Minor reason.

Source: Field survey (2025)

Determinants of adherence to recommended self-care practices

Results of the chi-square analysis revealed that age ($\chi^2 = 0.762$; $p = 0.028$), education ($\chi^2 = 2.726$; $p = 0.016$), and awareness ($\chi2=5.023$; p-value = 0.025) had a positive and significant relationship with adherence to recommended self-care practices among diabetic farmers in the study area. This implies that older, more educated, and more aware diabetic farmers were more likely to adhere to recommended medical-care practices than their counterparts.

The positive, significant relationship between age and adherence simply suggests that older diabetic farmers may have greater experience with disease management and a better appreciation of the consequences of non-compliance. This finding is consistent with Salama and Saudi (2020), who reported that positive and significant predictors of adherence to recommended medical treatments among diabetic patients attending a family medicine outpatient clinic in Ismailia, Egypt.

More so, the positive and significant influence of education on adherence implies that educated farmers are better able to understand medical instructions, interpret health information, and appreciate the importance of complying with treatment recommendations. This agrees with Aje and Fakeye (2024), who found that educational attainment significantly enhanced diabetes knowledge and adherence to treatment among patients with Type 2 diabetes.

Table 5: Test of the relationship between selected variables and adherence to recommended medical-care practices among diabetic farmers in the study area

Variable	No-adherence	Adhere	Total	*Cal-χ^2*	P-value	
Remark						
Age (Years)						
39 - 45	16	16	32	0.762	0.028	S
46 - 50	11	10	21			
≥ 51	21	23	44			
Sex						
Male	23	29	52	1.236	0.266	NS
Female	25	20	45			
Marital Status						
Married	35	33	68	1.853	0.396	NS
Unmarried	13	16	29			
Household Size						
≤3	15	16	31	1.466	0.226	NS
4-6	21	17	38			
≥7	9	12	21			
Education						
NFE	5	11	16	2.726	0.016	S
Primary	12	17	29			
Secondary	14	20	34			
Tertiary	7	11	18			
Estimated monthly income (₦)						
≤70,000	11	5	16	1.810	0.178	NS
70,001 - 100,000	23	33	56			
≥100,001	8	10	18			
Awareness of diabetic medical-care practices						
No awareness	17	10	27	5.023	0.025	S
Low	5	4	9			
High	20	34	54			
Religion affiliation						
Christianity	19	21	40	2.016	0.156	NS
Islam	18	19	37			
Traditionalist	7	6	13			

NFE=No Formal Education; NS=Not Sign.; and S=Significant. **Source:** Field survey (2025)

Furthermore, the significant relationship between awareness and adherence confirms that knowledge of recommended medical care practices is essential for compliance. For instance, farmers who are aware of the benefits of medication adherence, regular medical consultations, healthy dietary intake, and appropriate lifestyle modifications are more likely to follow recommended practices. This submission supports Shrivastava et al.'s (2020) assertion that awareness and knowledge are fundamental drivers of diabetes medical care practices. The findings therefore imply that strengthening healthcare communication policies targeted at farmers should prioritize diabetes education, awareness-raising, and health literacy programmes, particularly for less-educated farmers.

Implications for strengthening healthcare communication policies for farmers in Kogi State, Nigeria

The findings imply that awareness is a critical driver of adherence to recommended medical care practices among diabetic farmers, as evidenced by the significant positive relationship between awareness and adherence. This suggests that healthcare communication policies should prioritise sustained diabetes education and awareness programmes as effective tools for improving treatment adherence and healthcare outcomes among farmers in the state.

However, the persistence of non-adherence despite relatively high awareness highlights the limitations of information-based interventions alone. The diabetic farmers' concerns about medication safety and efficacy, financial barriers, inadequate access to quality healthcare facilities, and reliance on herbal and spiritual interventions underscore the need for healthcare communication policies that address behavioural, cultural, and other socio-economic factors influencing diabetes management decisions.

Furthermore, the significant influence of age and education on adherence implies that communication strategies should be tailored to suit characteristics of various farmer groups, using simple, culturally acceptable messages, delivered through accessible channels such as community health workers, agricultural extension agents, local media, religious organizations, and farmers' associations.

Thus, strengthening healthcare communication policies in Kogi state should involve integrating diabetes education into agricultural extension/advisory services, promoting evidence-based health literacy, countering misconceptions about diabetes treatment, and linking communication efforts with improved access to affordable healthcare services. This approach will enhance adherence to recommended medical care practices and contribute to better health outcomes among diabetic farming populations in Kogi State.

CONCLUSION AND RECOMMENDATIONS

The study concludes that diabetic farmers in Kogi State had a high level of awareness, which translated into a relatively high level of adherence to recommended medical care practices. However, adherence was constrained by concerns about the long-term effects and effectiveness of prescribed medications, poor access to affordable medications and recommended diets, inadequate healthcare facilities, and reliance on local herbs and spiritual interventions. Furthermore, age, educational attainment, and awareness had significant positive effects on adherence to recommended medical care practices. Thus, improving adherence to recommended medical-care practices among diabetic farmers requires addressing economic, healthcare access, and communication-related barriers.

REFERENCES

Aje, A. A., and Fakeye, T. O. (2024). Factors associated with disease knowledge and attitude among ambulatory patients with type 2 diabetes – a multicenter study. *BMC Endocrine Disorders,* 24(158):1-9. https://doi.org/10.1186/s12902-024-01696-0

Akinbule, O. O., Tor-Anyiin, F. N., & Adenusi, S. A. (2025). Impact of socio-economic factors and lifestyle behaviours on the quality of life of diabetes patients in Markurdi Benue state Nigeria. *Scientific Reports*, 15(1):34498. https://doi.org/10.1038/s41598-025-15889-7

Amaechi, V. C., Ugboma, E. J., Asumah, O. M., Usman, F. A., Nwiyi, C. J., Urom-Ndubuisi, C. U., Igwe, C. S., Obi, D. M., Okunade, J. O., Okon, D. (2024). The impact of drug cost on medicationadherence in nigeria: A perception among pharmacists. Universal Journal of Pharmaceutical Research 2024; 9(4): 5-13. *http://doi.org/10.22270/ujpr.v9i4.1148*

Eze, P., Aniebo, C. L., Ilechukwu, S., and Lawani, L. O. (2025). Understanding Unmet Healthcare Needs in Nigeria: Implications for Universal Health Coverage. *Health services insights*, 18:1–13. Doi: 10.1177/11786329251330032

Ezeaka, N. B., Ochuba, C. C., & Bartholomew, C. E. (2025). Addressing healthcare inequalities in nigeria: A communication perspective on advocacy and policy implications. *Journal of Advanced Research and Multidisciplinary Studies*, *5*(1): 1-11. Doi: 10.52589/jarmsaaqqdlcj

International Diabetes Federation (IDF) (2021). The IDF Diabetes Atlas 10th edition. https://idf.org/news-and-resources/resources/idf-diabetes-atlas-2021/

Mustafa, I. O., Ebiwonjumi, A. S., Alao, I. F., and Ayodele, I. A. (2025). Influences of belief in local therapies on diabetes management among patients attending Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. *FUOYE J. of Bio. Research*, *2*(1): 20- 26.

National Bureau of Statistics (NBS) 2023. Nigerian Gross Domestic Product Report. Pp. 1-35.

Ojewale, L. Y., Oluwatosin, A. O., and Fasanmade, A. A. (2019). A survey on patients' characteristics, perception of family support and diabetes self-management among type 2 diabetes patients in South-West Nigeria. *Nursing Open*, 6(2): 208-215. Doi: 10.1002/nop2.236

Okurumeh, A. I., Akpor, O. A., Okeya, O. E., & Akpor, O. B. (2022). Type 2 diabetes mellitus patients' lived experience at a tertiary hospital in Ekiti State, Nigeria. *Scientific reports*, 12(1): 8481. https://doi.org/10.1038/s41598-022-12633-3

Olajide, R.B., Onoja, N.M. and Oloruntomi, B.O. (2020). Analysis of ownership status and competency to operate communication devices by extension personnel in Kogi State, Nigeria. *International Journal of Agricultural Economics, Management and Development,* 8(1): 1-15. https://daeeksu.com/olajide-et-al-2/

Osiberu, A. A., Oluwasanu, M. M., Omobowale, M., John-Akinola, Y., And Oladepo, O.(2021). A cross-sectional study of the knowledge and screening practices of diabetes among adults in a south western Nigerian city.J PREV MED HYG, 62(2): E529-E538. DOI: 10.15167/2421-4248/jpmh2021.62.2.2059

Rafhi, E., Al‐Juhaishi M., Stupans, I., Stevens, J. E., Park, J. S., and Wang, K. N. (2024). The influence of patients' beliefs about medicines and the relationship with suboptimal medicine use in community-dwelling older adults: a systematic review of quantitative studies. *International Journal of Clinical Pharmacy*, *46*(4): 811-830. https://doi.org/10.1007/s11096-024-01727-9

Salama, H. M., & Saudi, R. A. (2020). Effect of patients beliefs about medications on adherence to drugs in diabetic patients attending family medicine outpatient clinic in Ismailia, Egypt. *Journal of Diabetes & Metabolic Disorders*, 19(2): 951-958. Doi: 10.1007/s40200-020-00587-0

Schrems, E., Gruber, J. R., Schiweck, C., Ruf, A., Reif, A., Goldbach, R., ... & Matura, S. (2025). Daily life stress is linked to increased glucose levels in individuals with insulin resistance: a real-world assessment. *Diabetologia*, 68(12): 2709-2718. https://doi.org/10.1007/s00125-025-06552-x

Shrivastva, A., Phadnis, S., Karthik, R. N., and Gore, M. (2020). A study on knowledge and self-care practices about Diabetes Mellitus among patients with type 2 Diabetes Mellitus attending selected tertiary healthcare facilities in coastal Karnataka. *Clinical Epidemiology and Global Health*, 8: 689–692. https://doi.org/10.1016/j.cegh.2020.01.003