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Influence of Patient Information Leaflets (PILs) on Medication Use: A Survey of Diabetic Patients in South-East, Nigeria

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Abstract

This study focused on the Influence of Patient Information Leaflets (PILs) on Medication Use: A Survey of Diabetic Patients in South-East, Nigeria. The specific objectives of the study were, among others, to analyze the extent of awareness and influence of patient information leaflets on diabetic patients' medication usage; and evaluate the influence of patient information predicated on Necessity-Concerns Framework and Information-Motivation-Behavioural Skills (IMB) Model. A mixed-method design, which comprised survey and in-depth interview, was adopted in a bid to link findings from quantitative and qualitative data. A structured questionnaire and interview guide were used to collect data from participants. The quantitative data was analysed using the Statistical Package for the Social Sciences (SPSS) software, (version 27). Pie Charts were used to present the frequencies associated with the demographic characteristics and responses related to awareness, perceived impact, and perception of PILs. On the other hand, the qualitative data was analyzed using thematic analysis and reporting verbatim some narratives that reflect major opinions and experiences of the interviewees. The result showed, among other things, a generally high level of awareness of PILs, with a significant majority of patients engaging with them at least sporadically. Based on the findings, it was recommended that, healthcare institutions and diabetes care centres should implement targeted awareness campaigns to increase diabetic patients' knowledge of the existence, purpose, and accessibility of Patient Information Leaflets. This can be done through counseling sessions, community outreach, and digital platforms to ensure wide dissemination and understanding of PILs' role in medication adherence.

Keywords: Adherence, Diabetic Patients, Influence, Medication, Patient Information Leaflets



Introduction

In managing chronic conditions such as diabetes, adherence to medication is paramount for effective disease control. Diabetes, particularly type 2, demands rigorous management, requiring patients to maintain a balance between medication, diet, exercise, and regular monitoring of blood glucose levels (American Diabetes Association, 2019). Patient Information Leaflets (PILs) are typically designed to offer comprehensive, user-friendly details regarding drug dosage, potential side effects, drug interactions, and specific storage instructions (Raynor, et al, 2010). The role of PILs becomes, especially, vital for diabetic patients, as they often require lifelong medication and management routines, which necessitate a clear understanding of their medications to avoid complications associated with improper use. Al-Saleh, et al, (2020), insist that the role of PILs in improving medication adherence is dependent on patients' awareness and perception of these resources, as well as the clarity, relevance, and cultural sensitivity of the information presented on the leaflets.

Patient information leaflets are official documents included in the packaging of medications to inform users about the safe and appropriate use of the medicine (Aslani, 2010). Regulatory bodies, such as the Food and Drug Administration (FDA) and the European Medicines Agency (EMA), mandate the inclusion of PILs to promote medication safety and adherence (Joglekar, 2021). In Nigeria, similar requirements exist under the National Agency for Food and Drug Administration and Control (NAFDAC), which enforces the distribution of medication information to improve patient safety and drug efficacy. Despite the availability of PILs, studies indicate that their effectiveness is limited by several factors, including the readability, design, and cultural relevance of the information provided (Bassey & Umoren, 2022; Wogalter, et al, 2014).

Research Objectives

The objective of this study is to analyse the influence of patient information leaflet on diabetic patients' adherence to medication in South-East Nigeria. However, the specific objectives are to:

1. assess the level of awareness of patient information leaflets (PILs) among diabetic patients in South-East Nigeria.
2. assess diabetic patients' perception of the usefulness of information provided in patient information leaflets.
3. evaluate the influence of patient information leaflets on diabetic patients' medication usage.
4. ascertain the level of medication adherence among diabetic patients with the help of patient information leaflets.
5. identify the factors that influence the usage of patient information leaflets by diabetic patients.

Theoretical Framework

This study was anchored on the Necessity-Concerns Framework and Information-Motivation-Behavioural Skills (IMB) Model. The Necessity-Concerns Framework (NCF) provides a robust theoretical basis for understanding patients' perceptions and adherence to medication. Developed by Horne et al. (1999), the NCF suggests that adherence to prescribed treatment regimens is primarily influenced by two contrasting dimensions: beliefs about the necessity of the medication and concerns about its potential adverse effects. This framework is particularly relevant in the context of chronic conditions like diabetes, where continuous medication use is essential for effective management.



Necessity beliefs pertain to the extent to which patients perceive their medication as essential for maintaining health and controlling their condition. When patients strongly believe in the necessity of their treatment, they are more likely to adhere to it (Horne et al., 2013). This belief can be shaped by various factors, including patient education and the clarity of information provided in patient information leaflets (PILs). In the context of this study, the role of PILs is crucial in reinforcing these beliefs by providing accurate, accessible, and comprehensive information about the benefits of medication use.

Conversely, concerns reflect the fears and apprehensions patients have regarding potential side effects and long-term impacts of medication. These concerns can lead to non-adherence when they outweigh the perceived benefits (Horne et al., 2013). The content and presentation of PILs can influence these concerns, as clear and balanced information helps mitigate undue anxiety. Therefore, understanding how diabetic patients in South-East Nigeria interact with PILs and how these leaflets shape their beliefs and concerns about medication is vital for addressing adherence issues.

By integrating the Necessity-Concerns Framework with the Information-Motivation-Behavioural Skill (IMB) Model, this study examines how awareness and the perceived quality of information provided by PILs affect diabetic patients' medication use. The IMB Model provides a complementary lens by considering the informational, motivational, and behavioural skills needed for effective adherence (Fisher & Fisher, 1992). When combined, these frameworks facilitate a comprehensive exploration of how patient education through PILs influences beliefs about medication necessity and concerns, ultimately impacting adherence behaviour.

Method

This study adopted mixed-method design, which comprises survey and in-depth interview. The researcher considers this design appropriate for assessing the influence of Patient Information Leaflets (PILs) on adherence to medication among diabetic patients in South-East Nigeria at a specific point in time. This approach allowed for a snapshot view of participants' attitudes, and perceived influence related to PILs.

Population of the Study

The target population for this study is unknown. However, it consists of diabetic patients attending outpatient diabetes managements at Federal Medical Centers in South-East Nigeria. Eligible participants included both male and female diabetic patients aged 18 years and above, who are currently using medication for diabetes management.

The Federal Medical Centers in the five Southeast states served as settings for this study due to their role as hubs for diabetes management. These centers are equipped with multidisciplinary teams that provide education, counseling, and treatment for chronic diseases. Patients visiting these FMCs represent diverse demographics, offering insights into awareness and usage patterns of patient information leaflets.

Sample Size and Sampling Technique

The sample size was determined using Cochran's formula.

Cochran's Sample Size Formula is

$$n^0 = \frac{Z^2 \times p \times (1-p)}{e^2}$$

Where:

n^0 is the sample size for an unknown population.

$Z=1.96$ (for 95% confidence).

$p= 0.5$ (for maximum variability).

$e= 0.05$ (for 5% margin of error).



$$\begin{aligned}n^{\circ} &= \frac{(1.96)^2 \cdot 0.5 \cdot (1-0.5)}{(0.05)^2} \\n^{\circ} &= \frac{3.8416 \cdot 0.25}{0.0025} \\n^{\circ} &= \frac{0.9604}{0.0025} = 384.16\end{aligned}$$

So, the sample size for survey was approximately 384 participants although the researcher distributed 400 copies to accommodate invalid copies without affecting the calculated sample size.

For the IDI, the sample size was 20 interviewees which mean 4 for each State in south east. The justification for the sample size is according to Ojiakor (2016) who posits that 20 interviewees are adequate for an interview to avoid theoretical saturation.

For the sampling, for survey, a multistage sampling technique was employed for this study. The stages are as follows:

Stage One: Here, a census of all the federal medical centers (FMCs) from each of the five States in South-East Nigeria, namely, Anambra, Enugu, Imo, Abia, and Ebonyi, were selected as the study sites.

Stage Two: Based on the overall desired sample size (previously calculated using Cochran's formula), the study employed the quota sampling technique to distribute the sample size among the 5 centers. That is, $384/5 = 77$. From this calculation, each center was to get 77 copies of the questionnaire. However, the researcher distributed 80 copies of the questionnaire per State making it 400. The rationale for this had been explained earlier.

Stage Three: within each chosen FMC, purposive sampling technique was then used to recruit participants from the diabetic patient population receiving care at the period of the study. The selection was based on the fact that the participant is a diabetic patient receiving treatment at the time of the study.

In addition to survey, the researcher with the aid of research assistants employed purposive sampling technique to select patients for the in-depth interview who are literate and expressed willingness to be studied. The interviews lasted for about 25 minutes on the average, and the composition of the sex is 12:8 for male and female respectively. The eldest was 71 with the youngest at 30 which put the mean age at 50.4. The sessions were recorded and later transcribed.

Instrument for Data Collection

A structured questionnaire was used to collect data from participants. The questionnaire consists of six sections, corresponding to each research objective as follows:

Demographic Information: Age, gender, level of education, duration of diabetes, type of medication, and frequency of visits to healthcare facilities.

Awareness of PILs: Questions to assess whether participants are aware of PILs and how often they encounter them.

Perception of Usefulness: Questions gauging participants' opinions on the helpfulness, clarity, and informativeness of PILs in managing their diabetes.

Perceived influence of PILs on diabetic patients' medication usage: questions ranged from . how helpful they found the information provided in the PILs, to influence of reading PILs on adherence to .prescribed medication schedule.



Perceived Influence on Medication Adherence: Questions assessing participants' perceptions of how PILs affect their medication-taking behaviour, adherence, and understanding of medication.

Factors Influencing Use of PILs: Questions addressing factors such as readability, language, cultural relevance, and accessibility of PILs.

In the same vein, the interview guide centered majorly on the 5 objectives of the study with room for follow up questions to achieve the stated objectives. It also contained check questions to help check the credibility of the responses.

Validity of the Instrument

The well-structured questionnaire and Interview guide for this study were submitted to the health and communication experts who are also experts in research methods for face and content validity. The content validity was achieved by ensuring that all questions asked were based on the research questions. The researcher effected the necessary corrections as made by the supervisors before the final draft was printed and approved by the supervisors as instruments for data collection for the study.

Reliability of the Instrument

The reliability of the instrument was confirmed through a pilot study using the test-retest method in which 15 copies of the questionnaire were administered to 15 diabetic patients from general hospital, Awo-omamma, in Imo State. After filling out the questionnaire, the researcher collected the responses. The same questionnaire but fresh copies were administered to the same group after 1 week, results of the 1st and 2nd tests were tallied and analysed using Pearson Product Moment Correlation coefficient. It yielded a high positive correlation of 0.9, meaning the instrument is very reliable.

The member checking procedure was used for the interview guide to show the level of trustworthiness of instrument. It was used on 3 diabetic patients in Imo State University Owerri after which it was check for consistency. The results from the member checking showed high level of internal consistency.

Method of Data Collection

Data collection was conducted by trained research assistants who administered the copies of questionnaire to participants during their clinic visits. Each participant was given a brief introduction to the study, and informed consent was obtained. For participants with limited literacy, the research assistants read the questions aloud and record the responses to ensure accurate data collection.

In addition to the quantitative data, the researcher collected qualitative data through IDI. The In-depth interviews were conducted within the hospital premises to avoid inconveniencing the respondents. On the average, the sessions lasted for about 25 minutes. The sessions were recorded with the consent of the participants. Afterwards, it was transcribed to ensure accuracy and depth during analysis.

Method of Data Analysis

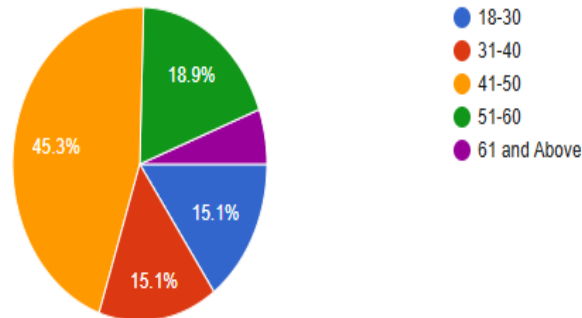
The quantitative data was analyzed using the Statistical Package for the Social Sciences (SPSS) software, version 27. Pie charts and tables were used to present the frequencies associated with the demographic characteristics and responses related to awareness, perceived impact, and perception of PILs.

On the other hand, the qualitative data was analyzed using thematic analysis and reporting verbatim some narratives that reflect major opinions and experiences of the interviewees. For some form of measurement, the qualitative data was also presented quantitatively for a clearer picture.

Findings

Result 1: Field Survey (Use of Questionnaire)

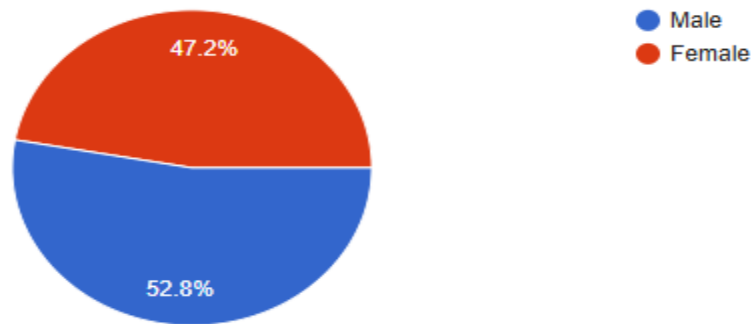
Chart 1: Age of Respondents



Source: field work, 2025

From the chart above, respondents within age group 41-50 constitute the largest portion of the population at 45.3%. This is quite significant when one considers that other groups are behind at 15.1% and 18.9%. This suggests that the majority of the respondents and responses were from individuals in their 40's with minimal participation from elderly individuals. This may be as a result of the patients that were on ground on the days of data collection.

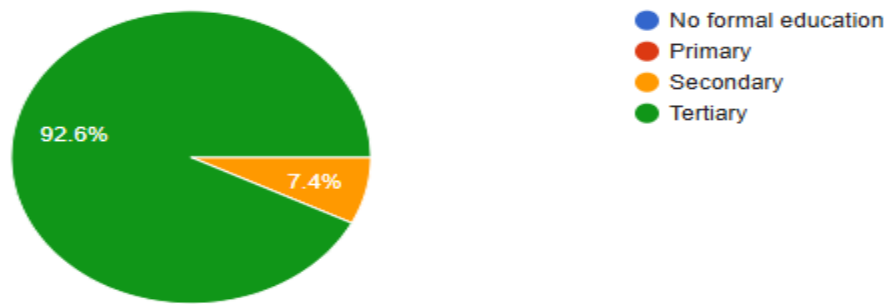
Chart 2: Gender of Respondents



Source: field work, 2025

The pie chart visually represents a 53/47 split between males and females. This indicates a relatively balanced, though slightly male dominated distribution within the sample size. It is worthy to note that the representation was purely coincidental and not purposive. The implication is that result indicates a fairly representative of both genders.

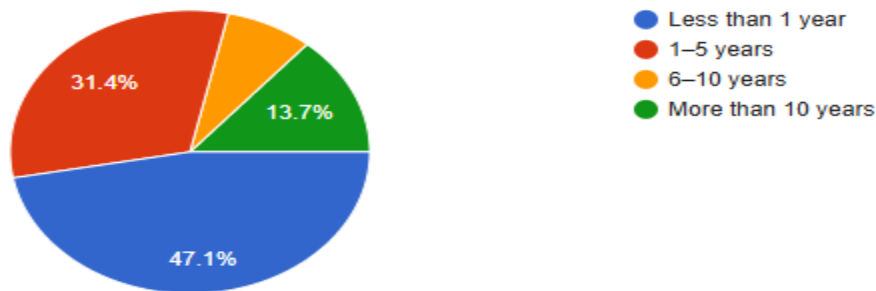
Chart 3: Respondents Educational Qualification



Source: field work, 2025

As can be seen in chart 3, majority of the respondents at 92.6% have higher degrees. While this was accidental, it suggests that with a highly educated sample, the credibility of the responses with regards to reading and comprehension of PIL is considered advantageous to the study.

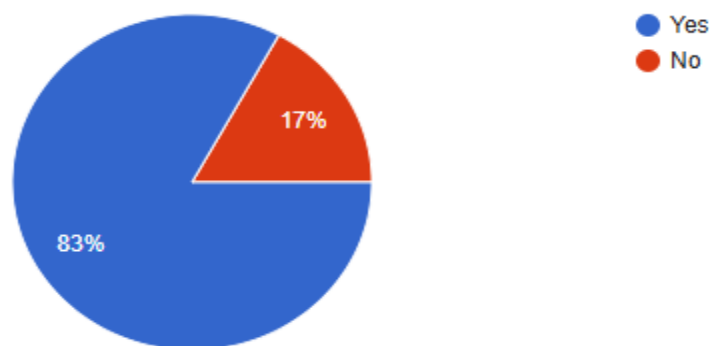
Chart 4: Years of diagnosis.



Source: field work 2025

This item sought to ascertain the number of years of diagnosis of patients. Chart 4 reveals a spread across different durations including newly diagnosed at 47.1% and those with longer term experience at 13.7%. This appears to strengthen the study's ability to capture diverse and holistic view of diabetic patients in south east Nigeria.

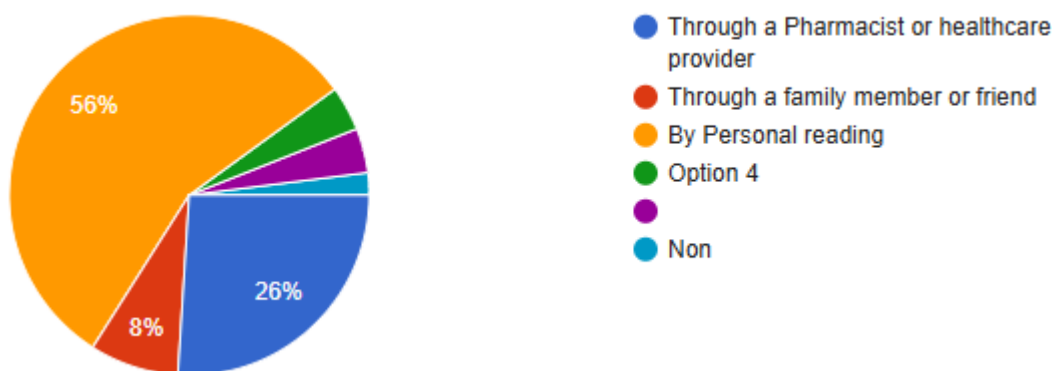
Chart 5: Respondents awareness of PILs



Source: field work, 2025

This variable was solely on awareness of PILs as part of the medication pack. Majority at 83% are aware of the existence of such leaflets while 17% are unaware. This does not in any way translate to reading as that will be explored by another item in the instrument.

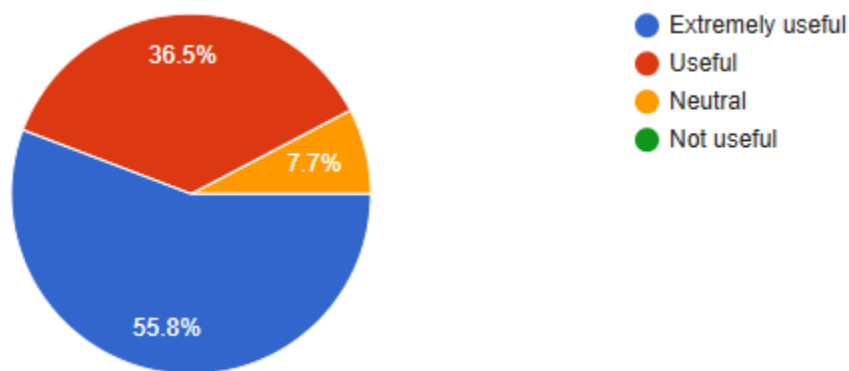
Chart 6: Respondents Source of PILs awareness



Source: field work 2025

This item sought to identify how respondents became aware of the leaflets. As can be deduced the majority of the respondents (56%) became aware of PIL through their own initiative. Also 26%) got to know about them from a pharmacist or health care provider while a smaller percentage (8%) was informed by a family member. Notably, none of the respondents reported becoming aware of medication leaflets through a friend. This suggests a level of proactiveness on the part of the respondents, and that friends and family may contribute to management but are not a primary source of PIL awareness for the sampled patients.

Chart 7: Respondents rating of the usefulness of PIL

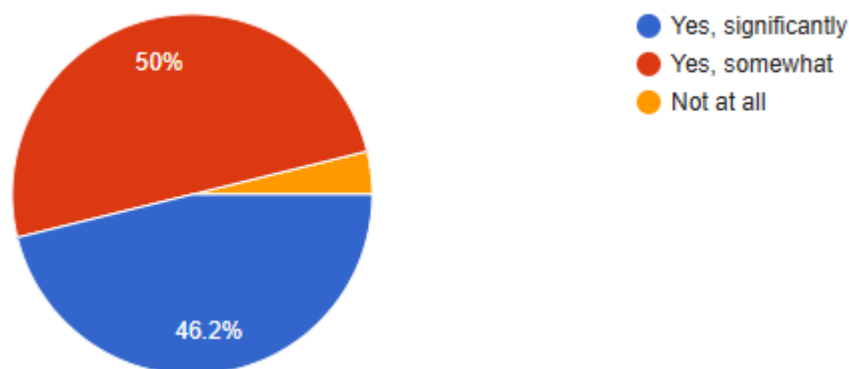


Source: field work 2025

Chart 7 reveals that vast of the respondents find medication leaflets to be a valuable resource. From the figure, 55.8% of the respondents rate PILs extremely useful which underscores the importance in their management of diabetes. Adding the 36.5% who find them useful, we have a combined 92.3% who derive positive value from these leaflets. This strong endorsement highlights the potential of well-designed leaflets to empower patients with essential information. The small percentage 7.7% who remain "neutral"

could indicate a few possibilities like relying on other sources of information, or maybe the leaflets, while not unhelpful, don't fully meet their specific needs or learning styles.

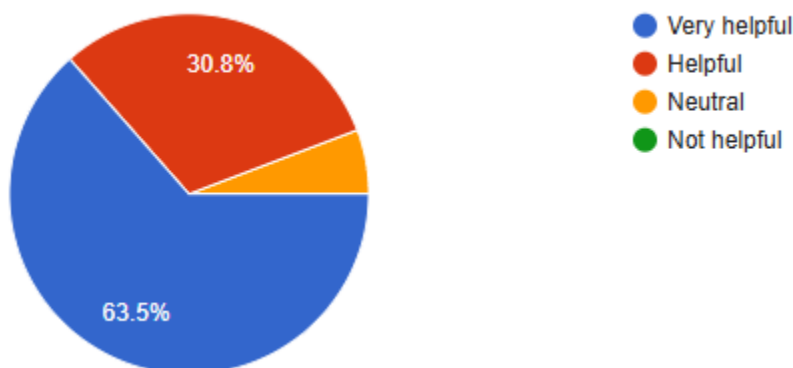
Chart 8: Response on PILs reduction of anxiety



Source: Field work, 2025

The data clearly shows that the leaflet is perceived as effective in reducing anxiety with a combined majority at 96.2% reporting that they feel some form of relief. This indicates positive psychological impact and strongly suggests that medication leaflets play a positive role in reducing anxiety among your diabetic patient population.

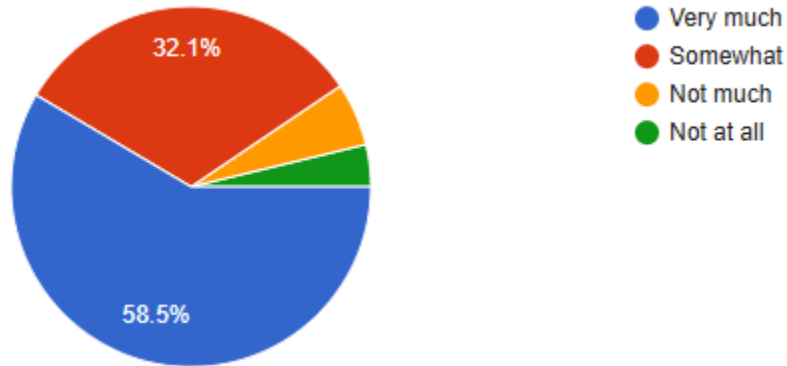
Chart 9: Response on helpfulness of PIL



Source: field work 2025

Data suggests that 63.5% of the respondents, representing majority, find the leaflets very helpful. This may be an indicator that the information provided is meeting their needs effectively and contributing positively to their understanding and management of their diabetes medication. Following is the group that found it helpful at 30.8% which implies they derive some level of benefit from the attached leaflet. The smallest percentage of neutral at 5.7% responses, and 0% for not helpful might indicate that for some patients, the leaflets are neither particularly beneficial nor unhelpful. The reason for this disposition will be further explored in the qualitative section

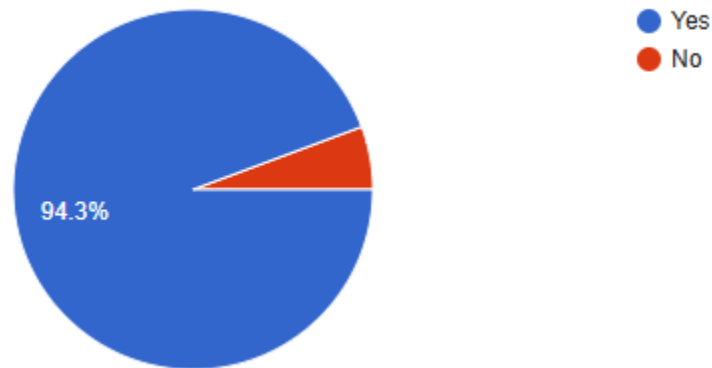
Chart 10: response on extent of adherence after reading PIL

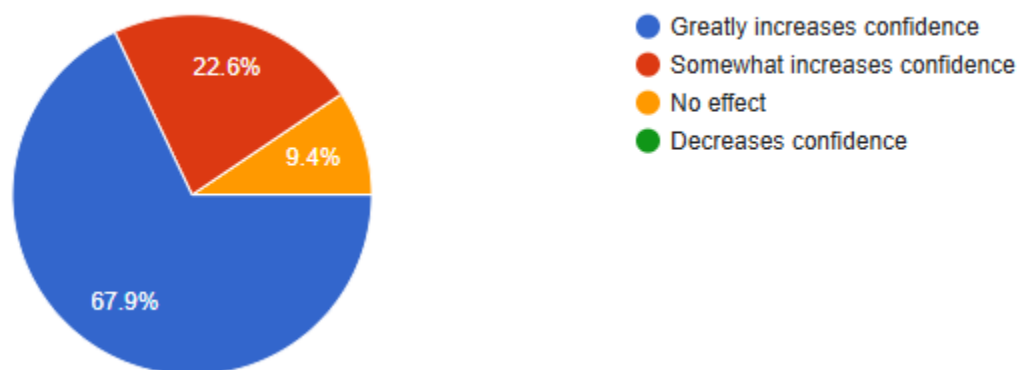


Source: field work, 2025

The study did not stop at how useful respondents considered PIL, but went ahead to determine the extent of influence of PIL by how well respondents adhere to the instructions contained in the leaflet. From the available data, 58.5% are of the opinion that it affects them very much or to a large extent. In the same vein, 32.1% agree but disagree on the extent because for them, it was “somewhat” which translates to moderate extent. The remaining 9.4% did not see any influence of PIL. With the combined number of the great and moderate influence, it can be deduced that PIL does have an effect on respondents although in varying degrees.

Charts11 &12: response on PIL in understanding of medications and effect on confidence





Source: 2025 field work

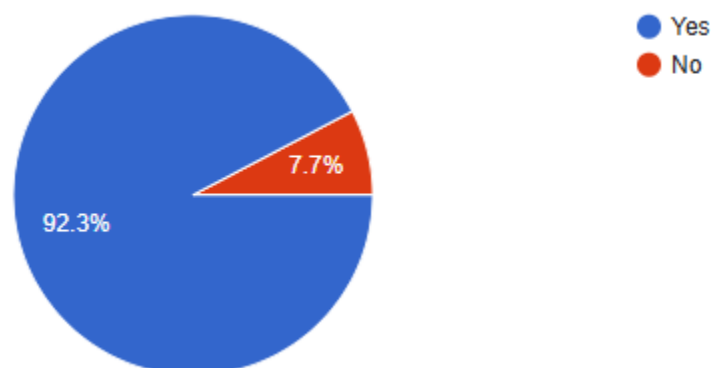
Worthy of note is the fact that item 12 in the questionnaire measured the respondents general understating of PIL to which 94.3% responded in the positive, while 5.7% responded in the negative. The 13th item now sought to gauge the extent PIL affected their confidence in taking medications correctly. The question was necessary considering the possibility of drug abuse in the correct administration of medications. The finding is summarized below:

- ☐ **Greatly increases confidence – 67.9%**
- ☐ **Somewhat increases confidence – 22.6%**
- ☐ **No effect – 9.4%**
- ☐ **Decreases confidence – 0%**

Source: field work 2025

Data reveals that confidence of 67.9% of the respondents greatly increases after reading PIL which may be a strong indicator of the perceived value of PIL. The additional 22.6% whose confidence somewhat increases seems to support the earlier submission that PIL is considered valuable especially when one considers the combined figure of 90.5 %. The 9.4% who reported no increase may be as a result of years of diagnosis. It is noteworthy that no respondent reported that it decreases confidence which could imply that PIL is not counterproductive

Chart 13: response on belief in adherence as a result of PIL



Source: field work 2025

From the data, there appears to be a significant association between adherence and reading of PIL. This is evident from the positive response from 92.3% of the respondents. The 7.7% that responded in the negative may be as a result of the barriers to reading of PILs like font size and use of jargons.

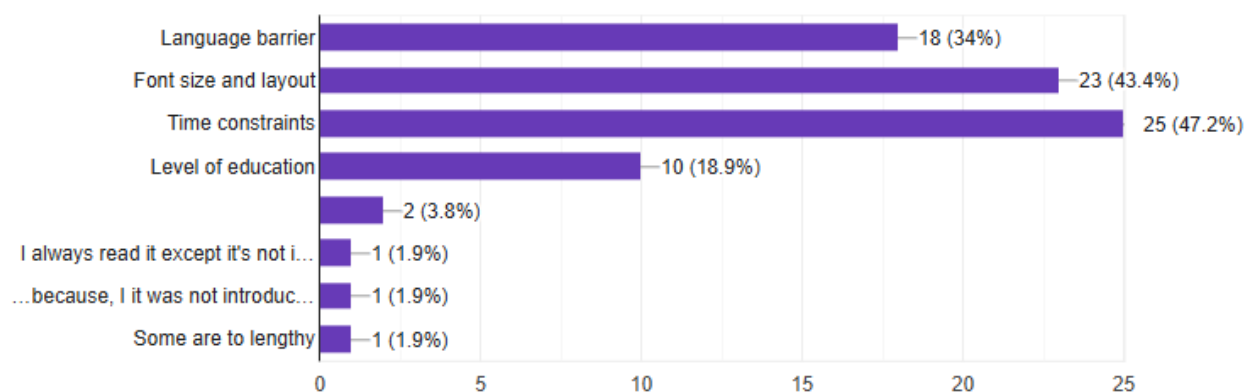
Chart 14: response on likelihood to complete dosage as a result of PIL

Options	percentage
Very much	58.50%
Somewhat	28.30 %
Not much	9.40%
Not at all	0%

Source: field work 2025

For a straightforward and easily readable summary of the responses, the researcher used a tabular illustration for this item. The overwhelming majority with a combined figure of 86.8% (58.5% + 28.3%), affirm that reading the leaflet makes them either "very much" or "somewhat" more likely to complete their medication dosage. This suggests that the information provided in the leaflets is often persuasive or informative enough to positively impact adherence behaviour. Going further, an insignificant number at 9.4% felt the PIL leaflet helped, but not very much, suggesting that while they may have read it, it didn't significantly impact their behaviour.

Chart 15: response on factors that influence PIL reading

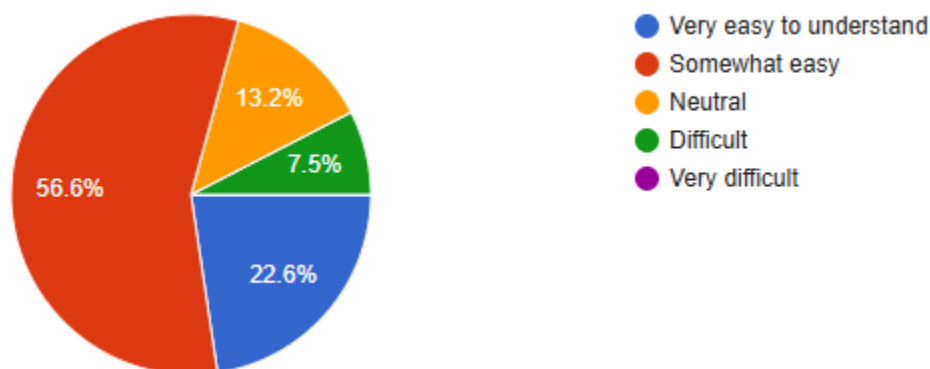


Source: field work 2025

This item sought to identify factors that influenced decision to read or not to read the attached leaflet. From figure 15, the main barriers to PIL reading according to the respondents were time, font size/layout and language comprehension. The most prominent factor appears to be time constraints as 47.2% of the respondents feel they may not have the time to thoroughly go through the PIL. Following closely is font size or layout at 43.4%. This could be as a result of the size and wordiness of the leaflet which may not really be considered eye friendly. Another significant barrier is language which is more linked to terminology and not the lingua franca. This goes to show that PIL most often doesn't cut across the literacy and illiteracy divide. The educated may also feel lost with the amount of technical/medical

jargons usually associated with PILs. The insignificant ‘others’ at 3.8% was further explored during the IDI.

Chart 16: Response on the language and terminology of PIL



Source: field work 2025

This last item on the questionnaire was to understand how easy or difficult respondents find the language and terminology of PIL. From the data, a large proportion of the respondents find the leaflets are generally comprehensible. With a combined percentage of 79.2% (22.6 and 56.6%) who fit into the very easy and somewhat easy categories, this is considered a positive take out. This could be because of the educational qualification of majority of the respondents who possess tertiary qualifications. On the other hand, the 13.2% who are undecided or neutral and the other 7.5% suggests that there is a need for improvements for easier clarity

Presentation of Qualitative Data

Result 2: In-Depth Interview (Use of IDI Guide)

For the interview, the researcher and the research assistants conducted 4 interviews per State with diabetic outpatients totaling 20 sessions. The selection of the interviewees was purposively done as literacy is a prerequisite to reading of PIL. Demographically, the interviewees were made up of 12 males and 8 females. The mean of respondents’ age was 50.4 with the eldest at 71 and the youngest at 30. The sessions had an average of 25 minutes and the language was English. Psychographically, this section was analyzed thematically and in line with the research question.

- 1. Respondents’ awareness of PIL:** for this objective, the interviewees were first asked if they have ever seen the patient Information leaflet. In response, all the interviewees representing 100% affirmed in the positive that have seen PIL. With the uniformity, it might be linked to the fact that they were all educated and that may have increased their level of awareness of such leaflet. Some of their responses are :

“of course I am well aware naa” (F)

Yes I am (M)

A further probe focused on when they first realized the presence of PIL and how, revealed the following responses:

“I can’t really say, but how I became aware was by checking the medication pack (M)



"I can't really remember but I do know that I stumbled on it someday by accident" (F)

"When I was younger, I do see it but not that I read them. Then I just use them to play. Just look at them, check how many pages, maybe if they are about 2 or 3 drugs, I will compare their leaflets, check the colors of the drugs and then put them back" (F)

2. **Respondents' perception of the usefulness of information on PILS:** this question with follow up questions sought to gauge their perceived usefulness of the leaflet.

Numerically, 80% representing 16 interviewees considered it very useful, while the remaining 20% representing 4 interviewees did not consider it useful. On the reasons it was considered useful, the study harvested the following reactions from men and women alike:

"I see it as useful as regards the precaution and drug interaction" (F)

"I usually look at the contra indications because I am hypertensive and always mindful of what I take to avoid negative reaction.

Taking a different stance is an interviewee who feels it is not necessary or useful. For him *"it is just to increase the prize of the drug because they add all those things in the cost of production" (M)*. While he is entitled to his opinion, it can be deduced from the data that majority of the patients/respondents considered PIL useful in the management of their diabetic condition.

3. **Response on PILs influence on medication usage:** the question on PILs influence on medication usage revealed the following:

"now as an adult, I have come across some and I look at them, especially when I buy drugs over the counter, trying to know the information.....sometimes, okay, there was a time a drug was prescribed, though I bought it over the counter, and I was asked to take it 3 times daily. By the time I read the leaflet, I understood I had to take it 6 hourly, so I changed from what I was told and used the one leaflet said because I felt it was more effective to use it that way". (F)

"Most times I check before I use a new drug. This started when I had high cholesterol level and was prescribed statins. I first googled the side effects and my findings made me go through the leaflet to confirm or refute." (M)

"...just like they say that information is power. When I read or any time I have time to read it, I might come across one or two information that might be useful, and then lead to some attitude change" (M)

"Sometimes I bank on residual knowledge about medication but in recent time, because of the level of awareness. We have made mistakes in the past such as maybe a drug you are supposed to take once a day, I take it 2 times a day. But these days, with the availability of PILS, a lot of changes have been made" (M)

With a smile on her face, a female interviewee had this to say: *"most times, I jump to the dosage and side effects and other times I leave it to God and the doctorsabi pharmacists..."*

From the afore mentioned reactions, it can be seen that majority of the respondents considered it useful especially in terms of drug usage.

4. **Respondents' level of medication adherence with the help of PILs:** knowing that it is one thing to know how to take drugs, and another thing to take it religiously and also complete the dosage. With that in mind, the research sought to know the extent PIL helps respondents to adhere to the medications. Transcribed data reveals the following:



High extent: 60% representing 12 interviewees

Medium extent: 35% representing 7 interviewees

Low extent: 5 % representing 1 interviewee

Some of the responses are: *“first of all, it helps me to see the possible side effects and to avoid misusing the drugs” (M)*

“yes I do because it gives me more confidence because there are some things that I read there that are not explained by medical doctors, so it gives me more confidence” (F)

“it does because sometimes it states clearly the indication, precautions and the drug interactions, so it has really helped me because if I am taking other drugs and I read the leaflets, I would now know if it has interaction with other drugs I am taking” (F)

“Yes it does so that I am informed about expected changes and maybe reactions” (F)

“I told you earlier that this is a trick by manufacturers to increase price” (M). Despite the lone voice on the negative side, it can be deduced that it affects the respondents to a large extent.

5. **Factors that influence respondent’s usage of PILs:** unlike what was obtainable with survey, the interviewees were asked to pick a dominant factor that acts as a barrier to maximizing the benefit of PILs. Analysis of the data reveals the following:

Font size: 45% (9 interviewees)

Volume of information: 40% (8 interviewees)

Jargons: 15% (3 interviewees)

According to them, *“Yes oooooo, the length, tiny characters bother me a lot” (F)*

“Sure, big time challenge is the quantum of information contained therein. There are too many information that when you pick the leaflet, you become discouraged. Knowing that diabetes affects vision, how are we expected to strain the eyes we are already managing?” (M)

“Text size is a problem. Sometimes when I want to refer to it and I don’t have my glasses on, it becomes a big problem”

“Well I will say text size because sometimes, some of the things they write are too tiny” (M)

“Yes, the text size. Sometimes it can be very tiny and sometimes they always start with language I am not familiar with. With that I will flip through and go to where they have English. So to me, it is the size. Maybe you bought it at night and want to read it, the size becomes a problem” (F)

On strategies to increase readability and usage of PIL, they recommended the following:

“First, too many information has to reduce because I know a lot of people get discouraged by the number of pages. Secondly, the character size has to be increased so that it would be legible enough for people to read, no matter their health condition” (M)

“...Shorter, bolder and simpler terms for lay people. We are already too stressed in Nigeria to be cracking our brains coupled with the amount we spend in hospitals and on drugs” (F)



“they should make the font size to be bolder and perhaps reduce the level of professionalism they attach to the leaflet so that even a layman can read and understand it” (M)

“The text size should be increased and the number of pages should be reduced. They should go straight to the precautions and interactions and indications. I think it’s better that way” (F)

“They should make it legible enough to enable people read and understand the contents, and how to go about it” (M)

Discussion

The findings of this research are discussed in line with the research questions that guided this study. This discussion is based on the analysis of the quantitative and qualitative data presented in the previous sections.

Both quantitative and qualitative data reveal a pattern of engagement, suggesting a moderate to high level of general awareness. A substantial majority, constituting of the study participants, indicated interacting with PILs at least actively, others reported reading them "sometimes" and a near-equal number claimed to read them "always." Conversely, a notable number stated that they "never" read PILs, while none reported reading them "rarely." This finding aligns with Ojiakor-Umenze, et al, (2024) whose study found out that the majority of respondents demonstrated a moderate level of awareness, followed by high awareness and low awareness. These findings suggest that while a significant proportion of consumers have a reasonable level of awareness, there is still room for improvement in increasing awareness levels. The recommendation may have played out as all the interviewees are aware while majority of the respondents for survey are also aware although in varying degrees.

As earlier presented in, the overwhelming majority of participants in this study hold a positive view regarding the utility of the information contained within PILs. A significant number of the respondents indicated that they found the leaflets either "extremely useful" or "useful". In contrast, only a small fraction, expressed a "neutral" opinion, and notably, none of the participants reported finding the information provided in PILs to be "not useful" at all. From the qualitative angle, most of the interviews considered it very useful, while few interviewees did not consider it useful. For some of them, *“I usually look at the contra indications because I am hypertensive and always mindful of what I take to avoid negative reaction (F).* Another also has this to say: *“I see it as useful as regards the precaution and drug interaction” (F).* On the opposing side, a male interviewee considered it useless when he responded that *“it is just to increase the prize of the drug because they add all those things in the cost of production” (M).* This finding agrees with Ravi, et al, (2021), whose study found out that most of the patients were comfortable with sharing health data with the National Health Service (NHS) or universities, but far fewer with commercial organizations such as technology companies.

Items from both survey and IDI probed to understand the level of influence. From IDI, *“now as an adult, I have come across some and I look at them, especially when I buy drugs over the counter, trying to know the information.....sometimes, okay, there was a time a drug was prescribed, though I bought it over the counter, and I was asked to take it 3 times daily. By the time I read the leaflet, I understood I had to take it 6 hourly, so I changed from what I was told and used the one leaflet said because I felt it was more effective to use it that way”. (F)*

“Most times I check before I use a new drug. This started when I had high cholesterol level and was prescribed statins. I first goggled(sic) the side effects and my findings made me go through the leaflet to confirm or refute.” (M)



“...just like they say that information is power. When I read or any time I have time to read it, I might come across one or two information that might be useful, and then lead to some attitude change” (M). Majority of the interviewed aligned with the position of others that it greatly influences them in different ways. From survey, the data reveals a statistically significant and overwhelmingly positive influence of PILs on the self-reported likelihood of medication dosage completion among diabetic patients in South-East Nigeria. A substantial 86.8% of participants indicated an increased propensity to adhere to their prescribed medication regimen as a direct consequence of reading the PIL. Specifically, 58.5% reported being “very much” more likely, while an additional 28.3% reported being “somewhat” more likely to complete their dosage. Conversely, only a small minority (9.4%) perceived “not much” influence, and a negligible 0% reported “not at all” being influenced in their medication usage by the PIL.

This finding offers robust empirical support for the position that PILs serve as a significant positive determinant in shaping medication-taking behaviour among diabetic patients in this specific socio-cultural and healthcare context. The high proportion of patients reporting an increased likelihood of dosage completion post-leaflet engagement aligns with the theoretical framework for this study; Necessity-Concerns Framework(Horne et al, 1999) which framework provides a comprehensive basis for exploring how patient information leaflets impact medication adherence among diabetic patients in South-East Nigeria. It underscores the importance of addressing various psychological and sociocultural factors that influence health behaviour. This framework facilitates a comprehensive exploration of how patient education through PILs influences beliefs about medication necessity and concerns, ultimately impacting adherence behaviour.

The quantitative data reveals a remarkably high level of self-reported medication adherence associated with the reading of Patient Information Leaflets (PILs) among diabetic patients in South-East Nigeria. An overwhelming 92.3% of participants responded affirmatively (“yes”) when asked about their adherence to their prescribed medication regimen after having read the PIL. From the qualitative angle, they responded thus: High extent: 60% representing 12 interviewees, Medium extent: 35% representing 7 interviewees, Low extent: 5 % representing 1 interviewee.

This finding strongly posits that PILs act as a significant facilitator of medication adherence within this specific patient population. The exceptionally high percentage of self-reported adherence following PIL engagement suggests a powerful link between accessing and processing the information contained within these leaflets and the subsequent adoption of consistent medication-taking behaviours. This observation aligns with the principles of informed decision-making and self-efficacy, wherein a better understanding of one's treatment regimen empowers individuals to adhere more diligently. From IDI (2025), *“first of all, it helps me to see the possible side effects and to avoid misusing the drugs” (M).* *“yes I do because it gives me more confidence because there are some things that I read there that are not explained by medical doctors, so it gives me more confidence” (F).* *“it does because sometimes it states clearly the indication, precautions and the drug interactions, so it has really helped me because if I am taking other drugs and I read the leaflets, I would now know if it has interaction with other drugs I am taking” (F).* The information provided in PILs likely contributes to this high level of reported adherence.

Data from survey reveals a multi-faceted array of factors influencing the usage of Patient Information Leaflets (PILs) among diabetic patients in South-East Nigeria. The most prominent factors reported were “time constraints” and “font size”, indicating significant practical barriers to engagement. Additionally, “language barrier” and “level of education” emerged as substantial socio-linguistic and cognitive influences. A small residual category of “others” suggests the presence of less frequently cited, potentially idiosyncratic factors. In the same vein, IDI revealed the following: Font size: 45% (9interviewees), Volume of information: 40% (8 interviewees), Jargons: 15% (3 interviewees).



This identification of key influencing factors provides critical insights into the challenges associated with optimizing PIL utilisation within this specific population. This finding underscores the importance of brevity, conciseness, and efficient information presentation in PIL design (Dowse & Ehlers, 2005).

Conclusion and Recommendations

The qualitative and quantitative data collectively suggests that while there is a good level of awareness and a strong positive perception of the usefulness of PILs among diabetic patients in South-East Nigeria, several factors influence their usage. PILs appear to have a significant positive influence on medication usage and are associated with high levels of reported adherence. However, barriers such as time constraints, font size, language, and education level need to be addressed to ensure that all diabetic patients can benefit from the valuable information contained within them. These findings underscore the importance of developing and disseminating clear, concise, visually accessible, and linguistically appropriate PILs to optimise their impact on diabetes management in Nigeria. The study therefore, recommends the following:

1. Healthcare institutions and diabetes care centres should implement targeted awareness campaigns to increase diabetic patients' knowledge of the existence, purpose, and accessibility of Patient Information Leaflets. This can be done through counseling sessions, community outreach, and digital platforms to ensure wide dissemination and understanding of PILs' role in medication adherence.
2. PILs should be regularly reviewed and redesigned to be culturally sensitive, linguistically simple, and visually clear to accommodate the literacy levels of diabetic patients in South-East Nigeria.
3. Healthcare professionals should be encouraged to actively use PILs as tools during consultations and follow-ups with diabetic patients.
4. Leveraging PILs alongside reminder systems such as mobile phone alerts, community health worker visits, and support groups can enhance adherence levels.
5. Further studies and healthcare policies should focus on identifying patient-specific and systemic factors that hinder the effective use of PILs, such as low literacy, distrust, or lack of access.

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References

- Al-Saleh, F., Taylor, K., & Bashir, H. (2020). Patients' perception of patient information leaflets (PILs) and attitudes towards their use: A systematic review. *Patient Education and Counseling*, 85(6), 1050–1060.
- American Diabetes Association.(2019). Standards of medical care in diabetes—2019. *Diabetes Care*, 42(Supplement 1), S1-S2.
- slani, P., & Benrimoj, S. I. (2009). Patient-centered care: Pharmacists' role in the changing healthcare environment. *Australian Prescriber*, 32(2), 34-37.
- Aslani, P., (2010). Patient-centered drug labeling: Prescribing medications based on patient understanding and beliefs. *Australian Journal of Pharmacy*, 87(5), 452-462.



- Bassey, B. E., & Umoren, P. E. (2022). COVID-19 health protocol and burden of investigative reportage among journalists in Akwa Ibom State, Nigeria. *International Journal of African Language and Media Studies*, 2(1), 204–215.
- Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behaviour. *Psychological Bulletin*, 111(3), 455-474.
- Horne, R., & Weinman, J. (1999). Patients' beliefs about prescribed medicines and their role in adherence to treatment in chronic physical illness. *Journal of Psychosomatic Research*, 47(6), 555-567.
- Horne, R., Chapman, S. C. E., Parham, R., Freemantle, N., Forbes, A., & Cooper, V. (2013). Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: A meta-analytic review of the Necessity-Concerns Framework. *PLoS ONE*, 8(12), e80633.
- Horne, R., et al. (2013). The Necessity-Concerns Framework: A multidimensional approach to adherence. *Health Psychology Review*, 7(sup1), S1-S15.
- Iloh, (2018). Health literacy and medication adherence among diabetic patients in Nigeria: An observational study. *BMC Public Health*, 18(1), 565.
- Joglekar, A., (2021). Regulatory policies on PILs and patient awareness in India. *Regulatory Toxicology and Pharmacology*, 123, 104871.
- Ojiakor-Umenze, I., C., Edem, K., D., & Nwaozor, A. O., (2024). Awareness and Reading of Medical Information on Drug and Users Buying Decision in Imo State: A Survey of Residents in Owerri Metropolis. *Journal of Medical Science, Biology, and Chemistry*, 1(1), 5-12.
- Ravi A., Soma F., Guy M., Hutan A., & Ara D.. (2021). Patient Perceptions on Data Sharing and Applying Artificial Intelligence to Health Care Data: Cross-sectional Survey. *Journal of medical internet research*,. 23(8).
- Raynor, D. K., Blenkinsopp, A., Knapp, P., Grime, J., Raynor, D. K., & Dickinson, D. (2007). A systematic review of quantitative and qualitative research on the role and effectiveness of written information available to patients about individual medicines. *Health Technology Assessment*, 11(5), 1-164.
- Raynor, D. K., Blenkinsopp, A., Knapp, P., Grime, J., Raynor, M., & Pollock, K. (2010). A systematic review of quantitative and qualitative research on the role and effectiveness of written information available to patients about individual medicines. *Health Technology Assessment*, 14(20), 1-158.
- Raynor, D. K., Knapp, P., & Silcock, J. (2014). Beyond the leaflet: Improving patient understanding of medications. *Pharmacy World & Science*, 28(4), 210-217.
- Wogalter, M. S., Shaver, E. F., & Kalsher, M. J., (2014). Effect of presentation modality in direct-to-consumer (DTC) prescription drug television advertisements. www.sciencedirect.com