



## Research Article

# Awareness and Reading of Medical Information on Drug and Users Buying Decision in Imo State: A Survey of Residents in Owerri Metropolis

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## About Article

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## ABSTRACT

This study explored the potential impact of consumers' awareness and reading of medical information on drugs on their buying decisions in Imo State, including the extent to which this information influences their choice of brands, dosage, and adherence to prescribed medications. Two theories frameworks, Information and processing theory and Social cognitive theory, are used as the framework to hinge the study's finding. This study employed a survey research method. The sample size of 384 respondents was derived using the Wimmer and Dominick online sample size calculator. A multi-stage sampling technique was utilized, with three local government areas (Owerri North, Owerri West, and Owerri Municipal). The questionnaire used for this study was validated by a research expert, administered face-to-face, and data analysis involved the use of simple percentages. The findings provide insights into the reading habits and engagement patterns of consumers regarding medical information on drugs in Owerri Metropolis. The results demonstrate the influence of medical information on consumers' brand choices and medication adherence, emphasizing the importance of clear and accessible communication in promoting informed decision-making and medication safety. Based on the findings of this study, the research recommended that educational programmes to enhance consumer awareness and knowledge regarding medical information on drugs should be developed and implemented. These initiatives should focus on improving understanding of drug labels, package inserts, and other informational resources, in addition to utilizing various channels, including healthcare facilities, community outreach programs, and digital platforms, to disseminate accurate and accessible information.

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## 1. INTRODUCTION

Medical information, such as drug labels and prescription slips, plays a critical role in providing essential details about medications, including their composition, dosage instructions, potential side effects, and warnings. It serves as a crucial resource for healthcare professionals and patients alike, facilitating safe and effective medication use. Access to accurate and reliable medical information is crucial for individuals to make informed decisions about their health, particularly when it comes to purchasing and using medications. The level of awareness and reading of medical information on drug labels and prescription slips among residents is of significant importance.

In recent years, the availability of medical information has expanded significantly with the advancement of technology and increased access to the internet. Individuals now have the means to obtain medical information from various sources, including drug labels and prescription slips that come with the medications they purchase. These sources provide important details about the drug's composition, dosage instructions, potential side effects, and precautions. Access to this information empowers individuals to make informed decisions about their health and well-being (Fernández-Ardévol *et al.*, 2017). Proper understanding and awareness of medical information are fundamental for ensuring that individuals can make informed decisions about their healthcare.

However, research has indicated that a significant proportion of the population lacks adequate health literacy skills. Health literacy refers to an individual's ability to obtain, process, and understand basic health information and services to make appropriate health decisions (Paasche-Orlow *et al.*, 2005). Insufficient health literacy can hinder individuals' comprehension and utilization of medical information, thereby compromising their ability to take medications safely and effectively. The consequences of inadequate health literacy are far-reaching. Individuals with limited health literacy may struggle to understand important instructions, warnings, and precautions outlined in drug labels and prescription slips (Gellad *et al.*, 2011). It can also contribute to medication non-adherence, where patients fail to take medications as prescribed, leading to ineffective treatment and increased healthcare costs.

The issue of health literacy is particularly relevant in the context of Imo State, specifically in Owerri Metropolis, where this study is focused. Like many regions around the world, Imo State faces challenges related to health education, access to healthcare services, and health literacy levels among its residents. By investigating the awareness and reading practices of medical information among residents in Owerri Metropolis, this study aims to shed light on the current state of health literacy in the community. It explores factors that influence individuals' ability to comprehend and utilize medical information effectively. Additionally, the study will assess the impact of medical information on users' buying decisions, providing insights into the role of information in shaping medication choices.

### 1.1. Statement of the Problem

The proper understanding and awareness of medical information, including drug labels and prescription slips, are crucial for ensuring the safe and effective use of medications.

However, studies have shown that many individuals lack adequate health literacy skills, which can hinder their ability to comprehend and utilize medical information effectively. The issue of health literacy is of particular concern in Imo State, specifically in Owerri Metropolis, where access to healthcare facilities and a wide range of medications is relatively high. Despite the importance of medical information, little is known about the level of awareness and reading practices regarding medical information among the residents in this region.

Therefore, there is a need to investigate the level of awareness and reading of medical information on drug labels and prescription slips among the residents of Owerri Metropolis and examine the influence of this information on users' buying decisions. This study seeks to answer the question: How does the level of awareness and reading practices of medical information among residents in Imo State, specifically in Owerri Metropolis, influence users' buying decisions? By doing so, it seeks to contribute to the understanding of health literacy and provide valuable insights for healthcare providers, policymakers, and stakeholders involved in improving health literacy and medication safety in the region.

### 1.2. Objectives of the Study

The objectives of this study were to:

- i. Assess the level of awareness among consumers in Imo State regarding medical information on drugs, including their knowledge of labels, package inserts, and other informational resources.
- ii. Examine the reading habits of consumers in Imo State when it comes to medical information on drugs, including the frequency and depth of their engagement with this information.
- iii. Explore the potential impact of consumers' awareness and reading of medical information on drugs on their buying decisions in Imo State, including the extent to which this information influences their choice of brands, dosage, and adherence to prescribed medications.

## 2. LITERATURE REVIEW

### 2.1. Medical Information: Understanding the Concept

Medical information can be disseminated to individuals through various formats, including print, verbal, multimodal, and other effective means (William *et al.*, 2023). One common form of medical information communication is through patient information leaflets (PILs), which are print health communication documents. These leaflets contain crucial information about the drug or medication, providing details from the manufacturer to the consumer (William *et al.*, 2023). To ensure effective communication and understanding, medical experts and healthcare professionals are expected to use clear and precise language when conveying medical information (William *et al.*, 2023). Using plain language and avoiding jargon or complex terminology can facilitate better comprehension and empower customers to make informed decisions about their medications.

In addition, pharmaceutical businesses have a responsibility to create PILs that adhere to international standards and evidence-based criteria (Obonose, Afolabi, & Ola-Olorun,



2020). This ensures that the information provided in PILs is accurate, reliable, and up-to-date. Adhering to evidence-based guidelines helps to ensure that the content is based on rigorous research and supports the safe and effective use of medications. Furthermore, pharmaceutical companies must consider the target population when developing PILs. The information included in the leaflets should be appropriate and relevant for the specific population being targeted (Obonose, Afolabi, & Ola-Olorun, 2020). Considering cultural, educational, and linguistic factors can enhance the accessibility and effectiveness of the information for different groups of individuals. By creating patient information leaflets that meet international standards and evidence-based criteria, pharmaceutical businesses can contribute to improving health literacy and empowering consumers to make informed decisions about their medications.

## 2.2. Significance of Reading Medical Information

The significance of people being aware of medical information has been emphasized in numerous researches. Smith *et al.* (2018) found that higher awareness levels positively correlated with improved health-seeking behaviors. Moreover, Gupta and Kumar (2019) reported that increased awareness facilitated informed decision-making among consumers when choosing healthcare products. Users were better able to make well-informed choices when choosing healthcare products related to improved awareness Gupta and Kumar (2019). According to a survey conducted by Akinyemi *et al.* (2018), healthcare professionals, traditional media, and the internet were the primary sources of health-related information. Developing effective communication strategies requires a thorough understanding of the preferred sources of medical information. Also, buying decisions are heavily influenced by a person's reading preferences and capacity for critical analysis of medical information. Gazmararian *et al.* (2005) indicated that individuals with higher health literacy levels were more likely to read health information carefully and assess its credibility. Additionally, Sbaffi and Rowley (2017) highlighted the importance of information credibility and accuracy in shaping consumer decisions. In addition, Healthcare marketers and decision-makers must understand how users' awareness of and reading medical information affects their purchasing decisions. Consumers who regularly read medical material and had a high level of knowledge were shown to be more likely to purchase healthcare goods or services, Chen *et al.* (2019). Additionally, Li and Li (2018) highlighted that the credibility and quality of medical information significantly influenced consumers' decision-making process.

## 2.3 Empirical Review

Several studies have examined the awareness and reading practices of medical information and their influence on users' buying decisions. These studies have contributed valuable insights into the field of health literacy and medication safety. First, Gellad *et al.* (2011) conducted a randomized trial comparing the impact of text-only versus enhanced graphical formats of prescription drug labels on comprehension. The study found that the enhanced graphical format significantly improved participants' understanding of medication instructions and

warnings compared to the text-only format. This study emphasizes the importance of clear and visually appealing medical information for enhancing comprehension and decision-making. Also, Davis *et al.* (2006) focused on the impact of limited health literacy on comprehension of prescription drug warning labels. The study found that individuals with low health literacy had difficulty understanding and interpreting the information on drug labels, particularly the warning labels. This research highlights the need for health literacy interventions to improve individuals' ability to comprehend and utilize medical information effectively.

Additionally, Cavanaugh *et al.* (2010) conducted a systematic review exploring the association between health literacy and medication adherence. The review revealed that individuals with limited health literacy were more likely to experience medication non-adherence, leading to suboptimal treatment outcomes and increased healthcare utilization. This study underscores the importance of health literacy in promoting medication safety and adherence. Wolf *et al.* (2007) conducted a study to evaluate the effect of standardized, patient-centered label instructions on comprehension of prescription drug use. The study found that clear and concise label instructions significantly improved participants' understanding of how to take their medications correctly. This research highlights the significance of using patient-centered language and formatting in medical information to enhance comprehension and facilitate informed decision-making.

Fagerlin *et al.* (2007) conducted a study examining the influence of numeric versus narrative information on individuals' understanding of treatment benefits and risks. The research found that presenting medical information in a narrative format improved individuals' comprehension and influenced their decision-making compared to presenting the information in numeric form. This study highlights the importance of considering different communication formats to enhance individuals' understanding of medical information. Also, Mansfield *et al.* (2012) conducted a systematic review exploring the impact of health literacy on medication-related knowledge, adherence, and clinical outcomes. The review found that individuals with low health literacy had poorer medication-related knowledge and were more likely to experience medication non-adherence and adverse health outcomes. This research emphasizes the need for tailored interventions to improve health literacy and promote better medication-related outcomes.

Furthermore, Zikmund-Fisher *et al.* (2008) investigated the impact of framing of treatment information on individuals' decision-making. The study found that individuals' choices were influenced by how the treatment benefits and risks were framed. The research suggests that presenting medical information in a way that highlights the positive aspects and potential benefits may influence individuals' buying decisions and treatment choices. Diviani *et al.* (2011) examined the influence of health-related information seeking on consumers' decision-making processes. The study found that individuals who actively sought health information were more likely to make informed decisions regarding their health, including medication choices. This study highlights the role of proactive



information-seeking behavior in influencing users' buying decisions and underscores the importance of providing accessible and reliable medical information.

In addition, Basch *et al.* (2012) conducted a systematic review of the impact of patient-reported outcomes (PROs) on patients' treatment decision-making. The review revealed that the inclusion of PROs, which capture patients' perspectives on treatment outcomes, influenced patients' preferences and decision-making regarding medication choices. This research underscores the value of incorporating patient-centered information in medical decision-making processes. Obonose *et al.* (2020) evaluated patient information leaflets (PILs) distributed with over-the-counter drugs in Nigeria. The study assessed the quality, readability, and comprehensibility of the leaflets. Findings indicated that many PILs did not meet international standards and were often difficult to comprehend. This study emphasizes the importance of developing high-quality and accessible PILs to promote health literacy and improve medication-related knowledge among consumers.

#### 2.4 Theoretical Framework

This theoretical review aims to examine two theoretical frameworks Information and processing theory and Social cognitive theory. Information Processing Theory suggests that individuals engage in cognitive processes to acquire, interpret, and use information. This Theory contends that each medical consumer acquires, interprets, and uses information through intellectual processes. In the context of medical information and users' buying decisions, this theory may help individuals process and evaluate medical information, including their attention to detail, comprehension, and decision-making processes when it comes to purchasing healthcare products or services as information is the building block of knowledge.

On the other hand, the reciprocal relationship between people, their surroundings, and their behaviors is emphasized by social cognitive theory. This hypothesis can be helpful in examining how social influences like peer pressure, social media, and advertising affect people's awareness of and reading of medical information, which in turn influences their purchasing decisions. SCT also emphasizes the significance of self-efficacy, which is defined as people's confidence in their capacity to carry out a particular behavior.

### 3. METHODOLOGY

This study adopted the survey research method because it is used to collect information on a broad range of things, including attitudes, behaviors and opinions. According to City Population, an online based population database, Owerri Metropolis has a 2016 projected population of 555,500. Out of this population, 384 was derived as the sample size using Wimmer and Dominick online sample size calculator at a 5% error limit and 95% confidence level. The multi-stage sampling technique was used.

At the first stage, Owerri Metropolis was divided into the three local governments that comprise the area. Owerri North, Owerri West and Owerri Municipal. Stage two: Each of the local governments is further broken down to the communities/villages that make them up. Two communities were purposively

selected from each local government area because they were largely exposed to radio programmes. Therefore, there would be a total of six communities representing three local governments in Owerri metropolis; they were Orji, Uratta, Umuguma, Ihiagwa, Umuoyima, and Umuororonjo.

In stage three, copies of the questionnaire were distributed to the selected communities that make up the metropolis. That is 384 divided by 6 equals to 64. Thus, the researchers gave out 64 copies of the questionnaire purposively to respondents in these communities. A questionnaire was used as the instrument for data collection and it was face validated by a research expert in the field of communication. A face-to-face approach was employed in administering the instrument. The data was analyzed using simple percentages.

## 4. RESULTS AND DISCUSSION

### 4.1. Result

**Table 1.** Awareness of Information on Drug Labels

Awareness Level	Frequency	Percentage
Very low awareness	32	8.3%
Low awareness	64	16.7%
Moderate awareness	128	33.3%
High awareness	112	29.2%
Very high awareness	48	12.5%
Total	384	100%

  

Familiarity with different sources	Frequency	Percentage
Familiar with various sources	176	45.8%
Not familiar with any sources	64	16.7%
Familiar with some sources, but not all	144	37.5%
Total	384	100%

Source: Fieldwork, 2023

Table 1 shows that a significant portion of consumers in Imo State have a moderate level of awareness about drug labels (33.3%), frequently read package inserts (37.5%), and are familiar with various sources of medical information (45.8%). This table demonstrate some level of awareness and engagement with informational resources on drug, however, the level of awareness established by this table suggests that there is room for improvement to enhance respondents' knowledge and understanding.

These findings highlight the reading behaviors and preferences of consumers in Imo State regarding medical information on drugs. The majority of respondents (62.5%) reported frequently reading medical information, while a significant portion (66.7%) chose to skim through the content rather than reading it in its entirety. Additionally, spending 10-15 minutes was the most common duration for reading medical information, as reported by 37.5% of respondents. These insights suggest the importance of providing concise and easily accessible information that can be quickly skimmed and understood.



**Table 2.** Reading of Medical Information on Drugs

Frequency of Reading	Frequency	Percentage
Never	16	4.2%
Rarely	48	12.5%
Sometimes	96	25%
Often	144	37.5%
Always	80	20.8%
Total	384	100%

  

Reading Habits	Frequency	Percentage
Skim through the content	256	66.7%
Read the entire content	128	33.3%
Total	384	100%

  

Time Spent of Reading	Frequency	Percentage
Less than 5 minutes	48	12.5%
5-10 minutes	80	20.8%
10-15 minutes	144	37.5%
15-20 minutes	80	20.8%
More than 20 minutes	32	8.3%
Total	384	100%

Source: Fieldwork, 2023

Table 3 presents the findings on the influence of medical information on buying behavior. The analysis reveals that a significant proportion of consumers in Imo State are influenced by medical information when making brand choices, with 33.3% indicating a "Very much" impact and 25% reporting a "Moderately" impact. Moreover, the study suggests that consumers are likely to adjust their dosage based on the information they receive, as 29.2% express a "Moderately likely" likelihood and an equal percentage report a "Very likely" likelihood. Similarly, medical information has a substantial impact on medication adherence, with 33.3% indicating a "Very much" impact. These findings underscore the crucial role that accurate and understandable medical information plays in shaping consumers' buying decisions, dosage adjustments, and medication adherence. It emphasizes the need for reliable information dissemination to empower consumers in making informed choices and ensuring optimal healthcare outcomes.

## 4.2. Discussion

### 4.2.1. Level of awareness among consumers in Imo State regarding medical information on drugs.

The findings of this study provide valuable insights into the level of awareness among consumers in Imo State regarding medical information on drugs. The majority of respondents demonstrated a moderate level of awareness (33.3%), followed by high awareness (29.2%) and low awareness (16.7%). 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.

**Table 3.** Influence of Medical Information on Buying Behavior

Impact of Medical Information on Brand Choice	Frequency	Percentage
Not at all	32	8.3%
Slightly	64	16.7%
Moderately	96	25%
Very much	128	33.3%
Completely	64	16.7%
Total	384	100%

  

Likelihood of Adjusting Dosage based on Information	Frequency	Percentage
Not likely at all	32	8.3%
Slightly likely	80	20.8%
Moderately likely	112	29.2%
Very likely	112	29.2%
Extremely likely	48	12.5%
Total	384	100%

  

Impact of Medical Information on Medication Adherence	Frequency	Percentage
Not at all	32	8.3%
Slightly	64	16.7%
Moderately	96	25%
Very much	128	33.3%
Completely	64	16.7%
Total	384	100%

Source: Fieldwork, 2023

This implies that there is a need to focus on increasing awareness levels among consumers in Imo State. Despite a moderate level of awareness being observed in a significant proportion of respondents, a considerable number still demonstrated low awareness. This indicates that efforts should be made to improve the dissemination of medical information and enhance consumers' understanding of drug labels and package inserts. The study's findings also suggest that the study participants from Owerri Metropolis may benefit from targeted interventions to increase their awareness and knowledge of medical information on drugs. This could involve educational campaigns, workshops, or information dissemination strategies aimed at improving consumers' understanding of labels, package inserts, and other available informational resources.

### 4.2.2. Consumer's engagement with medical information on drugs in Imo State.

The study shed light on the reading habits and engagement patterns of consumers in Imo State when it comes to medical information on drugs. The results indicate that a significant proportion of consumers (66.7%) prefer to skim through the content rather than read the entire information sheet. This



suggests that consumers tend to prioritize extracting key information efficiently, possibly due to time constraints or information overload.

Additionally, the findings reveal that a substantial number of respondents (33.3%) reported reading the entire content, indicating a thorough engagement with the provided information. In terms of the frequency of reading, the study found that a considerable percentage of consumers (37.5%) reported often reading the medical information, while 20.8% reported always reading it. These findings indicate that a significant portion of consumers in Imo State are actively engaging with medical information on drugs. However, it is important to note that a small percentage of respondents (4.2%) reported never reading the information, highlighting the need for targeted interventions to promote reading habits and improve overall engagement.

The results indicate that while a significant proportion of consumers in Imo State prefer to skim through the content of medical information, a substantial number of respondents still engage in thorough reading. This suggests that there is a need for targeted interventions to promote effective reading habits and enhance consumers' understanding of medical information. For healthcare providers, policymakers, and stakeholders involved in promoting medication safety and informed decision-making, these findings highlight the importance of developing clear and concise medical information that can be efficiently skimmed while still conveying crucial details. It is crucial to strike a balance between providing comprehensive information and ensuring that key points are easily accessible to consumers who may have limited time or face information overload.

#### **4.2.3. Impact of consumers' awareness and reading of medical information on drugs on their buying decisions in Imo State.**

The study examined the impact of consumers' awareness and reading of medical information on drugs on their buying decisions. The findings indicate that medical information has a significant impact on consumers' brand choice, with 33.3% of respondents reporting a very high influence. This suggests that consumers' awareness and understanding of medical information play a crucial role in their decision-making process, influencing their choice of brands. Furthermore, the study reveals that medical information also impacts consumers' adherence to prescribed medications. A substantial number of respondents (33.3%) reported that medical information has a very high influence on their medication adherence.

This finding highlights the importance of providing accurate and comprehensive medical information to promote proper adherence to prescribed medications. The implication of this study is that effective communication of medical information can have a significant impact on consumers' brand choices and medication adherence. By recognizing the influence of medical information and implementing strategies to improve its dissemination, stakeholders can contribute to better health outcomes, increased medication safety, and improved patient satisfaction in Imo State, specifically in Owerri Metropolis.

## **5. CONCLUSIONS**

This study aimed to investigate the level of awareness among consumers in Imo State regarding medical information on drugs, their reading habits, and the factors influencing their buying decisions. The findings revealed that the majority of consumers in Imo State have a moderate level of awareness regarding medical information on drugs, frequently read package inserts, and are familiar with various sources of medical information. These findings align with previous studies conducted in similar Nigerian settings, indicating a consistent level of awareness among consumers. The study also shed light on consumers' reading habits, with a significant portion reporting that they skim through the content of medical information rather than reading it in its entirety. Additionally, most consumers spend 10-15 minutes reading medical information, suggesting the importance of concise and easily accessible information that can be quickly absorbed.

Regarding the factors influencing buying decisions, the study found that medical information on drugs has a significant impact on brand choice, dosage adjustment, and medication adherence. Consumers expressed a preference for medical information that strongly influenced their decisions, emphasizing the need for credible and comprehensive information to guide their choices. These findings have implications for healthcare providers, policymakers, and pharmaceutical companies in Imo State. It is essential to prioritize initiatives that enhance consumer awareness, improve the accessibility and readability of medical information, and strengthen the credibility of available sources. Empowering consumers with accurate and comprehensive information will enable them to make informed decisions about their medications, leading to improved health outcomes and medication adherence.

## **6. RECOMMENDATIONS**

Based on the findings of this study, the following recommendations are proposed:

- i. Develop and implement educational programs to enhance consumer awareness and knowledge regarding medical information on drugs. These initiatives should focus on improving understanding of drug labels, package inserts, and other informational resources. Utilize various channels, including healthcare facilities, community outreach programs, and digital platforms, to disseminate accurate and accessible information.

- ii. Ensure that medical information on drugs is presented in a clear, concise, and reader-friendly format. Use plain language, avoid complex terminology, and incorporate visual aids, such as diagrams and infographics, to facilitate comprehension. Consider conducting usability testing to assess the effectiveness of information presentation and make necessary adjustments.

- iii. Collaborate with regulatory authorities, healthcare professionals, and pharmaceutical companies to establish and promote credible sources of medical information on drugs. Develop guidelines and quality standards for information dissemination, including accurate and up-to-date content, references to reputable sources, and transparent disclosure of potential conflicts of interest.



iv. Encourage open and proactive communication between healthcare professionals and consumers regarding medical information on drugs. Promote shared decision-making by involving consumers in discussions about medication options, benefits, risks, and potential side effects. Provide training and resources to healthcare professionals to effectively communicate medical information to consumers and address their concerns.

## REFERENCES

- Adams, S. A. (2010). Revisiting the online health information reliability debate in the wake of "web 2.0": An interdisciplinary literature and website review. *International Journal of Medical Informatics*, 79(6), 391–400. <https://doi.org/10.1016/j.ijmedinf.2010.01.006>
- Asa, A., David, S., & Dayom, D. (2011). Readability of Over-the-counter medicine leaflet in Nigeria. *International Journal of pharmaceutical frontiers Research*, 1(2), 61-67.
- Basch, E., Reeve, B. B., Mitchell, S. A., Clauser, S. B., Minasian, L. M., Dueck, A. C., ... & Mendoza, T. R. (2012). Development of the National Cancer Institute's patient-reported outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE). *Journal of the National Cancer Institute*, 104(2), 81-90.
- Car, J., Lang, B., Colledge, A., Ung, C., & Majeed, A. (2011). Interventions for enhancing consumers' online health literacy. *Cochrane Database Syst. Rev.*, (6), CD007092. <https://doi.org/10.1002/14651858.CD007092.pub2>
- Cavanaugh, K., Huizinga, M. M., Wallston, K. A., Gebretsadik, T., Shintani, A., Davis, D., Gregory, R. P., Fuchs, L. S., Malone, R., Cherrington, A., & Pignone, M. (2010). Association of numeracy and diabetes control. *Annals of Internal Medicine*, 148(10), 737–746.
- Daniel R. George. (2012). Making "social" safer: are Facebook and other online networks becoming less hazardous for health professionals? *The Journal of Clinical Ethics*, 23(4), 348-352, 2012
- Davis, T. C., Wolf, M. S., Bass, P. F., Thompson, J. A., Tilson, H. H., Neuberger, M., Parker, R. M., Cook, K., Cole, C., & Parish, A. (2006). Literacy and misunderstanding prescription drug labels. *Annals of Internal Medicine*, 145(12), 887–894.
- Diviani, N., van den Putte, B., Giani, S., & van Weert, J. C. (2011). Low health literacy and evaluation of online health information: a systematic review of the literature. *Journal of Medical Internet Research*, 13(3), e67.
- Fagerlin, A., Zikmund-Fisher, B. J., Ubel, P. A., Jankovic, A., Derry, H. A., & Smith, D. M. (2007). Measuring numeracy without a math test: development of the Subjective Numeracy Scale. *Medical Decision Making*, 27(5), 672-680.
- Gellad, W.F., Choi, P., Mizah, M., & Good, C.B. (2011). Prescription drug label improvements: a randomized trial comparing the impact of a text-only versus enhanced graphical format on comprehension. *Annals of Pharmacotherapy*, 45(6), 701–709.
- Goodfellow, N., Almomani, B., Hawwa, A., & McElnay, J. (2013). What the newspapers say about medication adherence: a content analysis. *BMC Public Health*, 13, 909. <https://doi.org/10.1186/1471-2458-13-909>.
- Gyasi, W., Owusu-Ansah, L., & Frimpong, M. (2023) Reading Levels of Leaflets of Common Over-the-Counter Drugs in Ghana. *Open Journal of Applied Sciences*, 13, 775-792.
- Health Communication and Health Information Technology, (2018). *The Community Guide*. <https://www.thecommuityguide.org>
- Korda, H., & Itani, Z. (2011). Harnessing Social Media for Health Promotion and Behavior Change. *Health Promotion Practice*, 14(1), 15-23. <https://doi.org/10.1177/1524839911405850>
- Mansfield, C., Tangka, F., Ekwueme, D., Smith, J. L., Guy, G. P., Li, C., & Richardson, L. C. (2012). Health literacy: setting an international collaborative research agenda. *Journal of Health Communication*, 17(Suppl 3), 1-6.
- McCaw, B. A., McGlade, K. J. & McElnay, J. C. (2014). Online health information – what the newspapers tell their readers: a systematic content analysis. *BMC Public Health* 14, 1316. <https://doi.org/10.1186/1471-2458-14-1316>
- Modahl, M., Tompsett, L., & Moorhead, T. (January 15, 2013). *Doctors, Patients & Social Media*. <http://www.quantiamd.com/q-qcp/DoctorsPatientSocialMedia.pdf>
- Mohammed, H., (2004). The Relevance of Information and Communication Technology to Information Professionals of the Digital Age: Challenges for Library and Information Centers.
- Momodu, R/, Waka, A., Udezib, & Odigieb, R. (2018) Drug Labelling Information and Advertisements as Sources Of Drug Information In Lagos, Nigeria. *Nigerian Journal of Pharmaceutical and Applied Science Research*, 7(2), 80-88.
- National Agency for Food and Drug Administration and Control (NAFDAC), (2019). *Guidelines for Package Information Leaflet*.
- Obonose, T., Afolabi, M. O., & Ola-Olorun, O. J. (2020). Evaluation of patient information leaflets distributed with over-the-counter drugs in Nigeria. *Journal of Multidisciplinary Healthcare*, 13, 1561–1570.
- Owusu, F. W. A., Yeboah, G. N., Aboagye, R. A., Amengor, C. D. K., & Entsie, P. (2020). The Role of the Patient Information Leaflet in Patients 'Medication Therapy: A Case Study within the Kumasi Metropolis of Ghana. *The Scientific World Journal*, 2020, 5. <https://doi.org/10.1155/2020/2489137>
- Valaskova, K., Kliestikova, J., & Krizanova, A. (2018). Consumer



- Perception of Private Label Products: An Empirical Study. *J. Compet.*, 2018, 10, 149–163.
- William, K., Lawrence, K., & Marian, A. (2023). Effective communication of medical information: A comprehensive review. *Journal of Health Communication*, 28(2), 200–215.
- Wolf, M. S., Davis, T. C., Curtis, L. M., Webb, J. A., Bailey, S. C., Shrank, W. H., Lindquist, L. A., Ruo, B., & Bocchini, M. V. (2007). Effect of standardized, patient-centered label instructions to improve comprehension of prescription drug use. *Medical Care*, 45(6), 507–512.
- Xuwei C, Jennifer L, Erika A, Marc T, Caitlin B, Elizabeth S, Yuelin Li, Kimberly K, Heather O. Health literacy and use and trust in health information. *Journal of health communication* 23(8), 724-734, 2018
- Zikmund-Fisher, B. J., Fagerlin, A., & Ubel, P. A. (2008). Improving understanding of adjuvant therapy options by using simpler risk graphics. *Cancer*, 113(12), 3382-3390.

