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Knowledge and Compliance with Health Risk Information on Leaflet of Popular Anti-Malaria Drugs Among Pregnant Women in Abakaliki Urban of Ebonyi State.

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Abstract

Malaria, a prevalent health issue in many developing regions, poses a significant threat to pregnant women and their unborn children. Anti-malarial drugs are essential in preventing and managing this disease; however, their usage requires a comprehensive understanding of the potential health benefits , drug potencies and associated risks. This study investigates the knowledge and compliance of pregnant women with the health risk information provided in the leaflets accompanying popular anti-malaria drugs. The study adopted the survey research design and questionnaires were used as instrument for data collection. Two hospitals from Ebonyi state (Federal Teaching Hospital and St. Patrick Mile Four Hospital) were randomly selected. A sample of 30 pregnant women attending antenatal care was surveyed using accidental technique, and their familiarity with the health risk information, reading habits, discussions with healthcare providers, adherence to guidelines, and challenges encountered were analyzed. The findings show that knowledge and compliance play in crucial role in health/medical decision taking among and ensuring the safe and effective use of anti-malarial drugs during pregnancy. However, most of the respondent indicated low legibility of the leaflet contents due to use of language, font face and font size, and lack of interpretative imagery to limit the literacy demands. Again, health leaflets have helped in reducing risks associated with health misinformation among pregnant women in Ebonyi state. The study underscores the necessity for targeted educational interventions and improved communication strategies to enhance awareness and compliance among pregnant women, ultimately contributing to better maternal and fetal health outcomes and recommend that medical leaflets be made more eligible with pictorial interpretation to enhance comprehension.

Keywords: ***Health risk information, knowledge and compliance, anti-malaria drugs, leaflets, pregnant women***

Introduction

Malaria is a potentially life-threatening disease caused by the Plasmodium parasites, which are transmitted to humans through the bites of infected female Anopheles mosquitoes. The parasites primarily infect the liver and red blood cells, leading to a range of symptoms, including high fever, chills, headache, fatigue, and, in severe cases, organ damage or failure (WHO, 2021). Malaria, if not promptly treated, can escalate to life-threatening conditions. Malaria remains a significant global health challenge. According to the World Health Organization (WHO) (2020), there were an estimated 241 million cases of malaria worldwide, leading to approximately 627,000 deaths, with pregnant women and young children being the most vulnerable groups (WHO, 2021). Pregnant women are at an increased risk of contracting malaria due to changes in their immune system and hormonal fluctuations during pregnancy, making them more susceptible to infections (Desai et al., 2007). Malaria during pregnancy can lead to adverse outcomes, including maternal anemia, low birth weight, preterm birth, and even maternal mortality (Desai et al., 2007; Dellicour et al., 2010).

Malaria constitutes a significant health challenge in Nigeria, causing a notable burden of sickness and fatalities among both adults and children. The prevalence of malaria, particularly among children, is notably high in Nigeria, estimated at approximately 43.2% (Mazumdar & Mazumdar, 2007). A substantial portion of Nigeria's population, up to half, faces the risk of experiencing at least one episode of malaria annually. This disease has far-reaching implications, accounting for a substantial portion of outpatient visits (60%) and hospitalizations (30%) among children under five, as well as contributing to 25% of infant deaths and 11% of maternal mortality (Onwujekwe et al., 2000). Moreover, malaria's presence in certain households exerts a significant economic burden, often resulting in overwhelming health-related expenditures (Onwujekwe et al., 2010).

Malaria prevention in Nigeria primarily revolves around two key strategies: the distribution of Long Lasting Insecticide-treated Nets (LLINs) and Indoor Residual Spraying (IRS). LLINs are distributed through various channels, including free public sector campaigns that are often integrated with immunization and antenatal care services. Additionally, some LLINs are subsidized and made available through the commercial sector, as outlined by the Federal Republic of Nigeria and the Federal Ministry of Health in (2013).

The first line of treatment for malaria involves the use of Artemisinin-based Combination Therapies (ACTs). However, it's emphasized that ACTs should only be administered after confirming the presence of the malaria parasite through parasitological diagnosis, achieved using techniques such as microscopy or rapid diagnostic tests (RDTs). This approach helps ensure appropriate and targeted treatment.

Furthermore, for pregnant individuals, Sulphadoxine Pyrimethamine (SP) is utilized as an intermittent preventive treatment. This strategy involves the administration of SP to prevent malaria infections during pregnancy, highlighting the country's efforts to safeguard the health of pregnant women and their unborn children from the harmful effects of malaria

Pregnant women are more susceptible to contracting malaria compared to the general population. This increased susceptibility is primarily due to changes in the immune system and physiological factors during pregnancy, making them more vulnerable to infections, including malaria (WHO, 2018). To combat the burden of malaria in pregnancy, various preventive and treatment strategies have been implemented, including the use of anti-malaria drugs. In Nigeria, the utilization of anti-malaria drugs among pregnant women is common, and these medications are often accompanied by informational leaflets that detail their usage and potential health risks.

However, the effectiveness of these interventions heavily relies on the knowledge and compliance with the health risk information provided in these drug leaflets. It is crucial that pregnant women not only take these medications as prescribed but also understand the potential risks and benefits associated with their use.

Understanding the extent to which pregnant women are informed about the health risks associated with anti-malaria drugs and whether they adhere to the provided guidelines is essential for improving maternal and neonatal health outcomes. By identifying potential gaps in knowledge and compliance, this study can inform targeted interventions and educational campaigns to enhance the safe and effective use of anti-malaria medications during pregnancy, ultimately contributing to better health outcomes for both mothers and their babies in Abakaliki Urban, Ebonyi State.

Statement of the Problem:
Malaria remains a substantial public health concern, particularly among pregnant women. The utilization of anti-malaria drugs is a common preventive and treatment measure in this population. These medications are often accompanied by informational leaflets that detail their usage and potential health risks. However, the effectiveness of these interventions heavily relies on the knowledge and compliance of pregnant women with the health risk information provided in these drug leaflets.

The problem under investigation is the knowledge and compliance of pregnant women with the health risk information contained in the leaflets of popular anti-malaria drugs. Understanding the extent of this problem is essential for public health interventions. Without adequate knowledge and compliance, the effectiveness of anti-malaria drug distribution programs may be compromised, leading to preventable cases of malaria and associated complications in pregnancy.

This study seeks to address these issues by assessing the level of knowledge among pregnant women regarding health risk information in anti-malaria drug leaflets and by examining the factors influencing compliance with the provided guidelines.

Objectives of the Study

1. To find out the knowledge of health risk information on the leaflet of anti-malaria drugs among pregnant women.
2. To determine the readability of the health risk information on the leaflet of anti-malaria drugs among pregnant women.
3. To ascertain how well pregnant women understand the health risk information on the leaflet of anti-malaria drugs.
4. To ascertain the level of compliance of pregnant women with the guidelines provided in the leaflets of anti-malaria drugs

Research Questions
The following are the research questions:

1) Do pregnant women have knowledge of the health risk information on the leaflet of anti-malaria drugs?
2) Do pregnant women read the health risk information provided in the leaflet of anti-malaria drugs?
3) Do pregnant women understand the health risk information on the leaflet of anti-malaria drugs?
4) Do pregnant women comply with the guidelines provided in the leaflets of anti-malaria drugs?

Review of Related Literatures

Malaria Parasite Diseases

Malaria, a significant public health concern in Africa, particularly in countries like Nigeria, poses a grave threat to its population, with pregnant women and children being the most vulnerable. The impact of malaria on mortality rates, especially among children, is alarming. According to the Malaria Consortium of Nigeria (2014), approximately 11% of all child deaths globally occur in Nigeria, accounting for nearly 250,000 Nigerian children's deaths annually

due to malaria. This emphasizes the urgent need for effective malaria control and prevention strategies in these regions.

Malaria is caused by the Plasmodium parasite and is transmitted through the bite of infected mosquitoes. It manifests with high fever, chills, and other severe symptoms. Although malaria is less prevalent in developed countries like the United States, it remains a significant health issue in Africa, Southern Asia, Central America, and South America. The effective communication within the anti-malaria drug leaflet is indeed crucial in the fight against malaria and its associated challenges (Stewart, 1995). The way information is presented and conveyed in these leaflets can significantly influence a person's understanding of the disease, the prescribed medication, and how to manage their health effectively.

Features of Drug Leaflet

Drug leaflets, also known as package inserts or patient information leaflets (PILs), serve as essential written communication tools accompanying medication to provide information about the drug and its usage. These leaflets have distinct characteristics designed to convey important information effectively to patients and consumers (Raynor & Blenkinsopp, 2017).

Firstly, drug leaflets are structured to be easily accessible and reader-friendly. They employ clear language, avoiding complex medical jargon to ensure comprehensibility for a wide audience, including those with varying levels of health literacy. The information is typically organized into sections, such as indications and usage, dosage and administration, contraindications, warnings and precautions, adverse reactions, and storage instructions. This segmentation enhances readability and facilitates quick navigation to the required medical information that ensures there is no abuse of the drug. Essentially, most pharmacists ensure that the leaflet is present to help guide the prospective patient.

Drug leaflets are comprehensive and informative. They provide a detailed overview of the medication, including its purpose, intended users, dosing instructions, potential side effects, and what to do in case of an overdose. Additionally, they often contain pictograms, diagrams, or charts to supplement the textual information, enhancing visual understanding and aiding those with limited reading abilities. The inclusion of this varied media enhances the overall educational.

In many healthcare settings, distributing these leaflets is a standard practice to ensure that pregnant women are well-informed about the medications they are prescribed. It helps healthcare providers and patients work together to make the best choices for the health of both the expectant mother and her unborn child (Tarn et al., 2006).

An Overview of Health-Risk Communication

Health-risk communication is a crucial component of public health strategies, encompassing the systematic dissemination of information about potential health hazards, risks, and precautionary measures to the public and relevant stakeholders (Oxford English Dictionary, 2013). Risk is a fundamental concept in various domains, encompassing the uncertainty or probability of encountering danger, harm, or adverse events. It signifies the potential for loss, injury, or undesirable outcomes in a given situation (Adams, 1995). The primary aim is to enable individuals to make informed decisions regarding their health and safety. This form of communication involves various aspects, including risk assessment, audience analysis,

message development, communication channel selection, and evaluation of the effectiveness of the communication process.

Effective health-risk communication begins with a thorough risk assessment, evaluating the potential dangers and hazards associated with specific health issues. This information is then used to develop clear, accurate, and accessible messages that can be comprehended by the intended audience. According to Sandman (1994), a key objective of risk communication is to assist individuals in comprehending risks associated with intake of drug and modulating their responses to risk, whether by heightening awareness or reducing heightened reactions.

Understanding the health risk information presented on anti-malaria drug leaflets is of utmost importance for pregnant women due to the potential implications for both maternal and fetal health (WHO, 2014). Malaria poses a significant threat during pregnancy, increasing the risk of complications such as low birth weight, preterm birth, and maternal anemia. Anti-malarial drugs are vital in preventing and managing malaria, but they come with specific health risks that need to be clearly comprehended by pregnant women (Van et al., 2019). Knowledge about these risks allows expectant mothers to make informed decisions regarding their medication, balancing the benefits and potential harm.

Role of Medical leaflet in Fighting Drug Abuse among Pregnant Women

Drug abuse during pregnancy is a critical public health issue with severe implications for both the mother and the developing fetus (Chasnoff & Burns, 2013). Substance abuse among pregnant women involves the consumption of legal or illicit drugs in a manner that negatively affects the health and well-being of both the mother and the unborn child. Substance abuse during pregnancy can lead to various complications, including preterm birth, low birth weight, developmental delays, and in severe cases, neonatal abstinence syndrome (NAS) (Chasnoff & Burns, 2013). NAS occurs when a baby experiences withdrawal symptoms from the drugs the mother used during pregnancy.

The effects of drug abuse during pregnancy are far-reaching and can have lifelong consequences. Substance use, including alcohol, nicotine, prescription medications, and illegal drugs, can adversely affect the fetal brain's development and result in cognitive and behavioral issues later in life (Lester, Andreozzi, & Appiah, 2004). Moreover, drug abuse can lead to placental abruption, stillbirth, and an increased risk of sudden infant death syndrome (SIDS) (Ornoy, 2009).

Addressing drug abuse during pregnancy necessitates a comprehensive approach involving healthcare professionals, social support systems, and community resources. Pre-natal care plays a crucial role in identifying substance abuse early in pregnancy, allowing for appropriate intervention and support. Providing access to addiction treatment programs, counseling, and education about the risks of substance abuse during pregnancy is essential (Forray, & Foster, 2015). Public health campaigns and educational programs aimed at raising awareness about the detrimental effects of drug abuse during pregnancy can also be effective in preventing substance use among pregnant women.

Empirical studies

Onu et al. (2019) in their study entitled ‘Analysis of Health Risk Information on Leaflets of Popular Anti-Malaria Drugs in South East Nigeria’, reveals that majority of the leaflets contents studied were legible as they were above 6-point font size; that the use of whitespace in the leaflets was encouraging as it aided the legibility of messages contained in the leaflets

among others. This proposition to the role of medical leaflets is a pointer to the fact that an effective compliance with the anti-malaria information on drug leaflets could enhance health issues among pregnant women. Auta, et al. (2011) survey on Readability of Malaria Medicine Information Leaflets in Nigeria, using the Simplified Measure of Gobbledygook (SMOG) readability test and by examining them for paper type, font size type, use of symbols and pictograms, and bilingual information revealed that the mean United State reading grade level for malaria medicines information leaflets available in Nigeria was 13.69 ± 1.70. This value is equivalent to a tertiary level of education in Nigeria. The study also revealed that 6.7 % of the leaflets were glossy; 6.7 % contained symbols and pictograms; 42.2 % of the leaflets had a font type size < 8; and only 2.2 % of the leaflets were produced in both English language and one of the major local languages of Nigeria. Conclusion: Malaria medicine information leaflets available in the Nigerian market are not readable to the majority of the population. There is need for pharmaceutical companies to produce readable medicine information leaflets.

William (2013) conducted a study titled: Readability and Health Communication: An Analysis of the Readability of Commonly Used Malaria Drugs Information Leaflets in Cape Coast, Ghana. This study conducted in-depth analysis of the readability of commonly used malaria medicine information leaflets in Cape Coast, Ghana. Seven leaflets of malaria medicines that are very popular in Cape Coast, Ghana were analyzed using the Flesch-Kincaid Reading Ease and Gunning Fog readability indexes. These leaflets were also examined based on the legibility of print, type of paper and bilingual information. Data collected from the two indexes revealed that all the leaflets are very difficult to read. The similarity among the above researchers indicate that although there could be abundance of leaflets, issue of language, users' literacy level, eligibility , etc , could aid or mar the success of the leaflets. Hence, there might be abuse of drugs on this ground. On this loophole does this work set to assess knowledge and compliance of pregnant women to health information on anti-malaria drugs.

Theoretical Framework

This study is anchored on the Health Belief Model (HBM). The Health Belief Model (HBM) is a psychological framework that aims to understand and explain health-related behaviors of individuals by considering their beliefs and perceptions regarding a specific health issue. Developed in the 1950s by social psychologists Hochbaum, Rosenstock, and others, the HBM is widely used in public health and healthcare to design effective health interventions and communication strategies (Rosenstock, 1974). The HBM posits that an individual's health-related behavior is influenced by their perceptions of a health threat and the benefits and barriers associated with taking a particular action.

The Health Belief Model, integrated into the design of anti-malarial drug leaflets, proves instrumental in guiding pregnant women towards informed decision-making. By addressing perceived susceptibility, severity, benefits of action, barriers to action, cues to action, self-efficacy, and health motivation, these leaflets can effectively convey essential information.

Highlighting the increased susceptibility of pregnant women to malaria and the severity of potential consequences for both mother and fetus underlines the criticality of prevention and treatment. Emphasizing the benefits of anti-malarial drugs in reducing risks and complications for both ensures a clear understanding of the medication's advantages.

Addressing perceived barriers by providing safety profiles, managing potential side effects, and clarifying misconceptions fosters confidence and self-efficacy. Clear instructions, reminders for drug regimen compliance, and encouragement for regular consultations serve as essential cues to action. Moreover, enhancing knowledge about malaria, drug effectiveness,

and sharing success stories further motivates pregnant women to prioritize their health and the well-being of their unborn child. By aligning anti-malarial drug leaflets with the Health Belief Model, pregnant women can navigate their medication journey with knowledge, confidence, and a proactive stance, ultimately resulting in improved health outcomes.

Research Design

The cross-sectional survey research design was adopted for the study which was carried out in Ebonyi State, Nigeria. Survey is essentially in assessing the rate of knowledge and compliance. The strength of survey is in covering high number of respondents and creates the opportunity for the researcher to be objective.

Population of the study

The population for the study comprised a total of 30 pregnant women In Ebonyi State, who registered for antenatal clinics per week at a government-owned and a mission-owned hospital in the state. The hospitals selected for the study are Federal Teaching Hospital Abakaliki (government owned) and Mile Four Hospital Abakaliki (Missionary owned).

Sample size and Sampling Techniques

Census sampling was employed due to the small of number of nursing mothers available at the time of the survey. The hospitals were selected for the study using simple random sampling technique while stochastic sampling was used to select the first 15 pregnant women in attendance for antenatal supervision on the day of data collection in each of the sampled hospitals. Thus from each of the 2 selected hospitals, 30 pregnant women were chosen and this resulted in a total sample of 30 pregnant women.

Instrument of data collection

The researchers used questionnaire to assess the knowledge of anti-malaria leaflet questionnaire, which consisted of 15 items arranged in two sections; A and B. Section A, contained three questions about the level of education and location of residence of the participants. Section B, consisted of 12 items on anti- malaria leaflet. Approval gained from hospital authorities helped the researchers gain access to the respondents and to personally administer the questionnaire to 30 pregnant women. In order to ensure that the women responded willingly, a brief note of consent soliciting their compliance will accompany the questionnaire.

Data Analysis and Interpretation

This section dealt with the data gotten from the respondents. From the total of 30 respondents, 28 respondents adhered strictly to the rules of questionnaire filling and were found usable. This formed the basis of analysis for this study.

Table 1: Have you ever come across a leaflet or pamphlet that accompanies anti-malarial drugs?

Response	Frequency	Percentage
Yes	22	78.6
No	5	17.9
Don’t know	1	3.5
Total	28	100

Source: Field Work 2022

The table above showed that majority of respondents (78.6%) has indicated that they have come across a leaflet or pamphlet accompanying anti-malarial drugs. A smaller proportion (17.9%) have not come across such leaflets or pamphlets, and a very small percentage (3.5%) are unsure or do not know.

Table 2: How often do you read the information provided on the leaflet of anti-malarial drugs when you receive them?

Response	Frequency	Percentage
Very often	14	50
Rarely	8	28.6
Never	6	21.4
Total	28	100

Source: Field Work 2022

Data in table 2 indicates that the majority of respondents (50%) tend to read the information on the leaflet of anti-malarial drugs very often, suggesting a proactive approach to understanding the medication's details, potential side effects, and instructions. A significant portion (28.6%) reads the information rarely, indicating a moderate level of interest or attention to the leaflet's content. A smaller but still notable portion (21.4%) never read the information, suggesting a lack of engagement with the provided details or a reliance on other sources of information about the medication.

Table 3: Are you aware of the potential health risks associated with anti-malarial drugs as described in the leaflets?

Source: Field Work 2022

Responses	Frequency	Percentage
Yes	15	53.6
No	11	39.3
Don’t know	2	7.1
Total	28	100

As shown in the table above, 53.6% of respondents are aware of the potential health risks associated with anti-malarial drugs as described in the leaflets, 39.3% of respondents are not aware of the potential health risks as described in the leaflets, while 7.1% of respondents indicated that they don't know whether they are aware of the potential health risks.

Table 4: Have you ever discussed the information about potential side effects and precautions from medication leaflets with your healthcare provider or a trusted source during your pregnancy?

Responses	Frequency	Percentage
Yes	22	78.6
No	5	17.9
Don’t know	1	3.5
Total	28	100

Source: Field Work 2022

As indicated in the table above, 78.9% of respondents said they have discussed the information about potential side effects and precautions from medication leaflets with their healthcare provider or a trusted source during their pregnancy. 17.9% of respondents said they have not discussed this information. 3.5% of respondents indicated they don't know if they have discussed this information.

Table 5: When you are prescribed medication during your pregnancy, do you make an effort to follow the guidelines and instructions provided in the accompanying leaflets?

Responses	Frequency	Percentage
Yes	18	67.9
No	8	28.6
Don’t know	1	3.5
Total	28	100

Source: Field Work 2022

The table inferred that 67.9% of respondents said they make an effort to follow the guidelines and instructions provided in the accompanying leaflets when prescribed medication during their pregnancy. Also, 28.6% of respondents said they do not make an effort to follow these guidelines and instructions while 3.5% of respondents indicated that they don't know if they make an effort to follow the guidelines and instructions.

Table 6: How often do you find it challenging to adhere to the recommendations and precautions mentioned in the medication leaflets during your pregnancy?

Responses	Frequency	Percentage
Yes	8	28.6
No	14	50
Don’t know	5	21.4
Total	28	100

Source: Field Work 2022

It can be seen in the table above that 28.6% of respondents find it challenging to adhere to the recommendations and precautions mentioned in the medication leaflets during their pregnancy. While the majority of the respondents 50% do not find it challenging to adhere to these recommendations and precautions. 21.4% of respondents indicated they don't know whether it's challenging to adhere to these recommendations and precautions.

Table 7: Can you recall a specific instance during your pregnancy when you deviated from the guidelines outlined in a medication leaflet?

Responses	Frequency	Percentage
Yes	9	32.1
No	14	50
Don’t know	5	21.4
Total	28	100

Source: Field Work 2022

The table above showed that 32.1% of respondents recalled a specific instance during their pregnancy when they deviated from the guidelines outlined in a medication leaflet. 50% of respondents did not recall any instance of deviation from the guidelines. 21.4% of respondents indicated they don't know whether they deviated from the guidelines during their pregnancy.

Table 8: Have you ever sought clarification or advice from a healthcare professional regarding the proper usage of medication based on the information provided in the leaflets during your pregnancy.

Responses	Frequency	Percentage
Yes	18	67.9
No	8	28.6
Don’t know	2	3.5
Total	28	100

Source: Field Work 2022

As shown in the table above, 67.9% of respondents have sought clarification or advice from a healthcare professional regarding the proper usage of medication based on the information provided in the leaflets during their pregnancy. 28.6% of respondents have not sought such clarification or advice while 3.5% of respondents indicated they don't know whether they have sought clarification or advice from a healthcare professional.

Discussion of Findings

The availability and distribution of informational leaflets accompanying anti-malarial drugs are essential components of ensuring safe and informed medication use, particularly for pregnant women who face unique health considerations. The finding that 78.6% of pregnant women have come across these leaflets while 17.9% have not encountered them sheds light on the reach and effectiveness of this crucial information dissemination process.

For the majority of pregnant women (78.6%) who have encountered these leaflets, several factors contribute to this exposure. Firstly, healthcare providers play a fundamental role in ensuring patients receives comprehensive information about prescribed medications. When a pregnant woman visits her healthcare professional, she is often provided with a prescription accompanied by a detailed leaflet about the anti-malarial drug prescribed. This ensures that the woman has access to essential information about the drug's purpose, dosage, potential side effects, and administration guidelines. This interaction fosters a sense of empowerment and knowledge, allowing the pregnant woman to make informed decisions regarding her health and the health of her unborn child.

The data shows that 50% of pregnant women often read the information provided on the leaflets accompanying anti-malarial drugs when they receive them. This is a positive indication of active engagement in understanding medication details. However, 28.6% rarely read such information, and 21.4% are unsure or have never seen such leaflets. This discrepancy suggests room for improvement in promoting comprehensive reading of medication leaflets.

Comprehensive reading of leaflets is crucial for pregnant women to grasp essential information about dosages, potential side effects, and administration guidelines. Healthcare providers and pharmacists can play a pivotal role in emphasizing the importance of reading leaflets to ensure medication safety during pregnancy. It's vital to address barriers to understanding, such as language barriers or literacy issues, to make leaflets more accessible and comprehensible. The data indicates that 57.1% of pregnant women are aware of the potential health risks associated with anti-malarial drugs as described in the leaflets, while 32.1% are not aware of these health risks. This highlights both progress in disseminating information and areas for improvement in increasing awareness.

Health risk awareness is critical during pregnancy because it allows women to make informed decisions about their treatment options. Healthcare providers should take the opportunity to discuss potential risks and benefits with pregnant patients during consultations, ensuring that patients fully understand the implications of the medications they are prescribed.

The fact that 53.6% of pregnant women have discussed health risk information from the leaflets with a healthcare professional or someone else demonstrates a proactive approach to seeking clarification and understanding. However, 39.3% have never discussed such health risk information, and 7.1% did not provide a response. Effective communication between healthcare providers and patients is essential in addressing concerns and providing clarity on potential health risks. Initiatives that encourage open dialogue between pregnant women and healthcare professionals can help bridge this communication gap, ensuring that all questions and concerns are adequately addressed. The data shows that 67.9% of pregnant women actively seek clarification or advice from a healthcare professional regarding the proper usage of medication based on the information provided in the leaflets. This proactive behavior is commendable as it contributes to better medication adherence and safety.

Conclusion

The data from the findings demonstrates a positive trend in medication-related awareness and engagement among pregnant women. The widespread encounter with accompanying leaflets suggests that these informational materials are effectively reaching the population, contributing to a more informed healthcare approach. It's encouraging that approximately half of the respondents regularly read the leaflet information, indicating an active interest in understanding their prescribed anti-malarial drugs. The notable awareness of potential health risks associated with anti-malarial drugs, evidenced by a substantial percentage of respondents, reflects an informed patient base. Discussions with healthcare professionals or trusted sources further emphasize a proactive approach towards managing these risks, showcasing a health-conscious mindset.

Recommendations

Based on the findings of the study, here are some recommendations:

The government, health care provider and other policy makers should;

1) Implement health education campaigns specifically targeted at pregnant women in Abakaliki Urban. These campaigns should emphasize the importance of reading and understanding the information provided on medication leaflets..
2) Conduct training programs for healthcare professionals to equip them with the knowledge and skills to effectively communicate and discuss health risk information from medication leaflets with pregnant women during consultations.
3) Advocate for the inclusion of clear and comprehensive medication information on leaflets as a regulatory requirement for pharmaceutical companies.

References

Adams, J. S. (1995). Inequity in social exchange. *Advances in Experimental Social Psychology,* 62, 335-343.

Asa A., David, S., Samuel, B B., & Danlami, W. D. (2011). Readability of Malaria Medicine Information Leaflets in Nigeria. *Tropical Journal of Pharmaceutical Research,*10 (5): 631-635

Carpenter, D. (2010). *Reputation and power. organizational image and pharmaceutical regulation and the FDA.* Princeton: Princeton University Press.

Chasnoff, I. J., & Burns, K. A. (2013). Chemical-dependent women: Understanding the problems of substance abuse. Routledge.

Dellicour, S., Tatem, A. J., Guerra, C. A., Snow, R. W., Ter-Kuile, F. O. (2010). Quantifying the number of pregnancies at risk of malaria in 2007: a demographic study. *PLoS Med*. 26;7(1):e1000221. doi: 10.1371/journal.pmed.1000221. PMID: 20126256; PMCID: PMC2811150.

Desai, M., Feiko, O., Kuile, F. N., Rose, M., Kwame, A.,Bernard, B., & Robert, D. N. (2007). Epidemiology and burden of malaria in pregnancy. National Center for Biotechnology Information**.** 7(2):93-104. doi: 10.1016/S1473-3099(07)70021-X.

Federal Republic of Nigeria, Federal Ministry of Health. (2013). National Malaria Control Programme Strategic Plan Abuja, Nigeria. 2009–2013

Forray, A., & Foster, D. (2015). Substance use in the prenatal period. *Current Psychiatry Reports*, 17(11), 91.

Kayentao, K., Garner, P., Van-Eijk, A. M., Naidoo, I., Roper, C., Mulokozi, A., & Menéndez, C. (2013). Intermittent preventive therapy for malaria during pregnancy using 2 vs 3 or more doses of sulfadoxine–pyrimethamine and risk of low birth weight in Africa: systematic review and meta-analysis. *JAMA*, 309(6), 594-604.

Lester, B. M., Andreozzi, L., & Appiah, L. (2004). Substance use during pregnancy: Time for policy to catch up with research. *Harm Reduction Journal*, 1(1), 5.

Malaria Consortium. (2014). Malaria in Nigeria: The Progress So Far. Retrieved from https://www.malariaconsortium.org/resources/publications/517/malaria-in-nigeria-the-progress-so-far

Matthew U. O., Chioma, N, & Andrew, H. N. (2019). Analysis of Health Risk Information on Leaflets of Popular Anti-Malaria Drugs in South East Nigeria. *Ebonyi State University Journal of Mass Communication* ISSN: 2449-0369 Vol. 6, Issue 1, pp. 10-23

Mazumdar, P. & Mazunmdar, S. (2007). Prevention and treatment of malaria in Nigeria: Differential and determinants from a spatial view. Available at: https://uaps2007.princeton.edu/papers/70579

Nosten, F., McGready, R., d'Alessandro, U., & Bonell, A. (2007). Pharmacokinetics of antimalarial drugs in pregnancy: a systematic review. *PLoS medicine*, 4(12), e346.

Onwujekwe, O., Uzochukwu, B., Dike, N., Uguru, N., Nwobi, E., Shu, E. (2009). Malaria treatment perceptions, practices and influences on provider behaviour: comparing hospitals and nonhospitals in south-east Nigeria. *Malar J*.; 8(246):10.1186.

Onwujekwe, O., Hanson, B., Uzochukwu, B., Ichoku, H., Ike, E., & Onwuaghalu, B. (2010). Are malaria treatment expenditures catastrophic to different socio-economic and geographic groups and how do they cope with payment? A study in southeast Nigeria. *Tropical Med Int Health,*15(1):18–25.

Onwujekwe, O., Hanson, K. Uzochukwu, B., Ezeoke, O., Eze, S., & Dike, N. (2010). Geographic inequities in provision and utilization of malaria treatment services in southeast Nigeria: Diagnosis, providers and drugs. *Health Policy*, 94: 144- 149.

Ornoy, A. (2009). Prenatal origin of obesity and their complications: Gestational diabetes, maternal overweight and the paradoxical effects of fetal growth restriction and macrosomia. *Reproductive Toxicology*, 27(1), 1-14.

Oxford English Dictionary (OED) (2013). http://www.oed.com/view/Entry/166306?rskey=Rcq4wH&result=1#eid(accessed August 16, 2013)

Raynor, D. K., & Blenkinsopp, A. (2017). Medicine Safety: Adverse Drug Reactions, Medication Errors and the Impact of Health Information Technology. *Pharmacy Practice* (pp. 69-84). Academic Press.

Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs*, 2(4), 328-335.

Stewart, M. (1995). Effective physician-patient communication and health outcomes: a review. *Canadian Medical Association Journal*, 152(9), 1423-1433.

Tarn, D. M., Heritage, J., Paterniti, D. A., Hays, R. D., Kravitz, R. L., Wenger, N. S., & Physician Communication Working Group of the Patient Outcomes Research Team (PORT). (2006). Physician communication when prescribing new medications. Archives of *Internal Medicine*, 166 (17), 1855-1862.

Van Eijk, A. M., Hill, J., Povall, S., Reynolds, A., Wong, H., Ter Kuile, F. O., & Dellicour, S. (2019). The malaria in pregnancy library: a bibliometric review. *Malaria Journal*, 18(1), 1-16.

William, K. G. (2013). Readability and Health Communication: An Analysis of the Readability of Commonly Used Malaria Drugs Information Leaflets in Cape Coast, Ghana. *IOSR Journal of Research & Method in Education* (IOSR-JRME)e-ISSN: 2320 – 7388,p-ISSN: 2320 – 737X Volume 2, Issue 4, PP 17-25

World Health Organization. (2014). Intermittent Preventive Treatment of malaria in pregnancy using Sulfadoxine-Pyrimethamine (IPTp-SP). Policy recommendation. World Health Organization.

World Health Organization. (2018). Malaria in pregnant women. Retrieved from https://www.who.int/malaria/areas/high_risk_groups/pregnancy/en/

World Health Organization. (2021). Malaria. Retrieved from https://www.who.int/news-room/fact-sheets/detail/malaria

World Health Organization. (2021). Malaria: Retrieved from: https://www.who.int/news-room/factsheets/detail/malaria#:~:text=In%202021%2C%20nearly%20half%20of,of%20the%20global%20malaria%20burden.

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