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Effective Communication of Patient Information Leaflets (PILs) in Selected Malaria Drugs in Nigeria

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Abstract

Communication is a soul-train that connects the humans of the same speech community. Effective communication is even a larger soul-train that promotes a peaceful co-existence among the humans. It is established that fracas of all sorts ensue when a society debars effective communication; to misunderstand or not know medical inscriptions attracts the worst health catastrophe that a society can ever imagine. It is against this background that this study investigates if the educated Nigerian malaria users understand the instructions contained in selected Nigerian Malaria Drug Patient Information Leaflets (PILs). The study designed a questionnaire, which consisted of nine question items, and administered it on 900 educated Nigerians through the *Google Form Online Outlet* (GFOO). To analyse the data, the study applied the non-inferential tools of frequency count and percentage in order to draw conclusions from the natures and features of the data obtained for the study. The study presents, among other findings, that the majority of the educated Nigerians do not understand the PILs of the malaria drugs due to the strange or technical nature of the words, and the complex nature of the sentences used to write the leaflets.

Key words: Malaria; Drug leaflets; Self-medication; Effective communication

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INTRODUCTION

In Nigeria, as in many other tropical countries, malaria is the foremost health problem because it accounts for more cases and deaths than any other disease in the world

Successive Nigerian governments, through their Ministries of Health, have tried different measures to eradicate the problem but little progress has been made, so far. According to the statistics available on the website of the US Embassy in Nigeria, 'Malaria is a risk for 97% of the Nigeria's population. The remaining 3% of the population live in the malaria free highlands. There are an estimated 100 million malaria cases with over 300,000 deaths per year in Nigeria' (https://photos.state.gov/libraries/nigeria/231771/Public/December-MalariaFactSheet2.pdf). It is a common phenomenon today, in Nigeria, to hear of people die of malaria. On the other hand too, one hears of those who died from the wrongful use of the malaria drugs. This can be attributed to the low level of information, which is available to the Nigerian malaria drug users in the drug's leaflets.

In a country like Nigeria where health facilities are scarce, and when available, lack adequate and standard manpower, there is a great tendency that many will decide to go on self-medication. If they do that, the possible safety guide for them, especially the educated ones, are the drug leaflets. If that, too, cannot provide the needed information, then, there is a problem. It is not our aim in this study to justify self-medication or the reasons people take drugs they do not know or understand. The economic and health situation may justify that. But of a serious concern is how the drug leaflets, as pointed out by Jolayemi (1997), Jolayemi (2001), and Jolayemi & Mahmud (2017), have served as a means of adequate language signs and communication. In this instance,

the drug leaflet is the medium through which the communication occurs. For the communication itself to fulfill its intended goals, Idegbekwe & Nwala (2016) note that there must be a convergence of three factors of the message sender, the message and the audience in order to make a good communication act. At this instance, we focus on the content of the drug leaflets as the message and the convergence it strikes with the consumers, who are the audience, in order to establish the level of communication of the leaflets to these consumers.

OBJECTIVES OF THE STUDY

This study investigates some malaria drug leaflets to unravel the reasons a large population of the survey conducted for this research do not understand the message in the leaflets. The main essence of this is to suggest the way forward to the malaria drug manufactures on better ways to communicate to the users of drugs. Specifically, the objectives of this study are to:

i. identify the Nigerians that self-medicate on the malaria drugs;

ii. investigate if those who self-medicate get the needed information on the drug leaflets;

iii. if they do not, examine the possible reasons they do not get the needed information on the

drug leaflets; and

iv. collect such words that may hinder the effective comprehension of the malaria drug leaflets.

RESEARCH QUESTIONS

i. Are there Nigerians that self-medicate on the malaria drugs?

ii. Do those who self-medicate get the needed information on the drug leaflets?

iii. If no, why will they not get the needed information on the leaflets?

iv. What are such words that may hinder the effective comprehension of the malaria drug leaflets?

REVIEW OF SOME RELATED STUDIES

Burgers, Beukeboom, Sparks and Diepeveen (2015) pay attention to how (not) to inform the patients about drug-use with emphasis on the use and effects of negations in Dutch Patient Information Leaflets. The study does a content analysis of 30 Patient Information Leaflets (PILs) of different brands of pollinosis drugs, half of which are freely available in drugstores and half only by physician's prescription. The study mapped negation-use in PIL sections on 'proper usage' and 'potential side effects.' The study discovers that negations are often used in PILs as 21.0% of the clauses contain at least one negation. This number is higher in the sections that are related to potential side effects than the proper usage. They conclude, among others, that negations also decrease PILs' appreciation and medical-adherence intentions. In another research, Adeniji (2015) studies the features and functionalities of the informative leaflets accompanying the drug leaflets in the Nigerian market. The aim is to study the language tools deployed by the marketers using the leaflets to see if they are readable and comprehensible. The findings from Adeniji's study reveal that the drug leaflets explore the functions of the language, largely to convey information, give instructions, and make prescriptions. Other findings are that the leaflets advertise, describe, and give contra-indications about the drugs, through the language resources, which include lexis and structures. This thereby justifies the language as the main tool for communication as humans. However, the study does not investigate if the leaflets or the lexical contents of the leaflets are well understood by the readers, which is the main focus of the present study.

Furthermore, Ghaemi and Sheibani (2014) do a genre-based analysis of the drug leaflets also known as Patient Information Leaflets (PILs). The researcher analysed the PILs at the two levels of macro- and microstructures. The results of the analysis at the macrostructure level indicate that approximately, PILs are made of 17 sections; however, some variations are also observed and that at the microstructure level, each section has its own move and step framework. Also, Eesa (2011) does a discourse analysis of drug labels and leaflets and conclude that instructional labels use linguistic devices such as headlines, direct address and positive vocabulary in order to attract the attention of the people. These linguistic devises also have a direct effect on the consumers as the devises encourage them to buy the products. Again, the study does not focus on how effective these leaflets are to the end users, as the current study desires.

In another study, Beusekom, Grootens-Wiegers, Bos, Guchelaar, and Broek (2016) focus on the possibilities of having people with low literacy level misinterpret the drug leaflets. The main objective of the study is to gain insight into how people with low literacy level use and evaluate written drug information. Another objective of theirs is to identify the ways in which these researchers feel the patient leaflets can be improved, and in particular, using images. The study used a focus group of low literate participants, who had interview sessions with the researchers. At the end of the study, Beusekom, et al., as part of the findings, reveal that the PILs were considered discouraging to the use of these respondents, because the needed information from the leaflets were difficult to locate, as well as understand. Thus, many in this group rely on alternative information sources (p. 1372). The study recommends that the leaflets should be shorter, and improved in terms of organisation, legibility and readability as most of 'the participants thought images could increase the leaflet's appeal, help ask questions, provide an overview, help understand textual information, aid recall, reassure, and even lead to increased confidence,

empowerment and feeling of safety' (p. 1372).

In an earlier research, Gal and Prigat (2005), indeed, question the rationale behind drug companies' use of drug leaflets, which the users cannot read. The study notes that readability and usability remain cogent problems, which drug manufacturers have not been able to solve as much attention is paid on manufacturing the drug itself than the explanation of how it should be used. Research has exposed problems with the readability and usability of a wide range of PILs on diverse matters, such as: diet and health (Dollahite et al., 1996), cancer prevention and treatment (Glazer et al., 1996), postoperative instructions (Clement and Wales, 2004), AIDS prevention (Johnson et al., 1997), consent forms (Ott and Hardie, 1997) or pharmacy drug leaflets (Kirksey et al., 2004). This seems to be the overall picture that can be drawn from the hundreds of studies published over several decades (Zorn and Ratzan, 2000). At the end, Gal and Prigat (2005) suggest that PILs producers adopt a broad ecological view of the environments in which patient education materials are created and deployed.

Also, Kyei, Ocansey, Koffuor, Abokyi and Feni (2014), investigate the influence of PILs on Ophthalmic patients' education and medication compliance. The study used a semi-structured questionnaire with sections on patient demographics, patient information leaflets impact on therapeutic education, and medication compliance. It was administered on 400 ophthalmic review patients in three eye care facilities in the Central Region of Ghana. The readability level, using the Rudolph Flesch's readability ease calculator, of the PILs was also done of the common ophthalmic medications prescribed in these eye Centres. Pearson's Chi-square statistical analysis was used to test for significant association between the variables. At the end of the study, it is discovered that Ophthalmic patients' opinion on PILs is reasonably good and has a positive influence on patients' medication compliance. It however, does not have much influence on the patients' education due to low readability and comprehensiblility because most patients that read the PIL said it was difficult.

Similarly, Adepu and Swamy (2012) do a study on the development and evaluation of PILs' usefulness. The study finds that the information leaflets examined meet the minimum readability level, and the designed criteria scores, which are also in consonance with the patients' education and comprehension. On a similar note, Sustersic, Gauchet, Foote, and Bosson (2016) present a study on how best to use and evaluate PILs given during a consultation. The study concludes that PILs, when well written and used at the appropriate time, can improve the patients' knowledge and or patients' satisfaction whatever the clinical situation. The study also concludes that the PILs induce better adherence to the treatment, to diet, and to lifestyle advice, especially in the short term. These later studies and their findings of how PILs can be so useful to the patients somewhat contrasts with the earlier studies where it is discovered that PILs, due to the language patterns and presentations, can be of little help to the users as understanding is low. This difference however creates more room for research such as the present one to determine, in a different environment and language context, the communicativeness of PILs in Nigeria especially PILs on the malaria drugs in the country.

METHODOLOGY

This study is designed as a survey to investigate the extent to which the malaria drug leaflets communicate the details of the drugs to the Nigerian users. The study's target population covered the Thirty Six (36) States in Nigeria and the Federal Capital Territory, focusing on the educated Nigerians with Senior School Certificate Examination (SSCE), National Certificate in Education (NCE), Ordinary National Diploma (OND), Graduates and other higher degrees of the universities who used malaria drugs. But the sampled population was 900 Nigerians, who responded to the *Google form* generated online questionnaire instrument. Data were collected with a questionnaire of nine (9) question items administered on the 900 Nigerians through the google form outlet online. The link for the questionnaire was sent to the WhatsApp and Facebook platforms of the respondents. Their submitted responses were collected from the google platform. To analyse the data, the frequency counts were taken and the percentage of the responses was calculated; that is, the numbers of YES or No or other values and variables used.

DATA PRESENTATION

Question 1: What is your highest education qualification?

Table 1
Showing the Responses to Question One

Value	Count	Percentage
SSCE	334	37%
University Graduate/HND/NCE/OND	498	55%
Masters/PhD	68	8%
Total	900	100

Question 2: Have you done self-medication before?

Table 2
Showing the Responses to Question Two

Value	Count	Percentage
Yes	728	81%
No	172	19%
Total	900	100

Question 3: Was your choice of drug based on recommendations from friends, relatives or acquaintances?

Table 3
Showing the Responses to Question Three

Value	Count	Percentage
Yes	762	85%
No	138	15%
Total	900	100

Question 4: Do you read the malaria drug's leaflet before taking the drug in it?

Table 4
Showing the Responses to Question Four

Value	Count	Percentage
Yes	686	76%
No	214	24%
Total	900	100

Question 5: If you read the leaflet, do you fully understand the information contained therein?

Table 5
Showing the Responses to Question Five

Value	Count	Percentage
Yes	132	15%
No	768	85%
Total	900	100

Question 6: If your answer to the above question is yes, what aided your understanding?

Table 6
Showing the Responses to Question Six

Value	Count	Percentage
The words are familiar	22	17%
The sentences are simple and straight forward	50	38%
Other language features	60	45%
Total	132	100

Question 7: If you do not understand the leaflets, what is the reason?

Table 7
Showing the Responses to Question Seven

Value	Count	Percentage
The words are strange	234	30%
The leaflet is too long	174	23%
The sentences are complex and difficult to understand	167	22%
All of the above	193	25%
Total	768	100

Question 8: Would you wish the leaflet be written in a simpler way that you could understand?

Table 8
Showing the Responses to Question Eight

Value	Count	Percentage
Yes	789	88%
No	111	12%
Total	900	100

Question 9: Do you consider the following words elicited from the malaria drug leaflets simple: Falcidrum, Potentiation, Fetal malformation, Aspartame and Prophylactic?

Table 9
Showing the Responses to Question Nine

Value	Count	Percentage
Yes	112	12%
No	788	88%
Total	900	100

Sources: This Survey Study

RESULTS AND DATA ANALYSIS

From Table 1, we see that among the 900 respondents, 37% of them are SSCE holders, 55% are graduates, HND, OND and NCE holders, while the remaining 8% are holders of higher degrees from the university (Masters and PhDs). This clearly defines the type of respondents we involved in the survey. The respondents, having attained the various academic heights, could read and write to the different extents where a drug leaflet should be understandable. Furthermore, 81% of the respondents agreed to have done self -medication in the past while 85% of them claimed that the drugs they took were recommended to them by their friends, colleagues and acquaintances as shown in Table 3.

Many of the respondents had read malaria drug leaflets in the past before taking drugs either on a self-medication basis or recommended by either friends or medical practitioners. In fact, in Table 4, 76% answered in the affirmative, while 24% responded in the negative. This means that there is a high rate of awareness among the educated Nigerians on the need to read the drug leaflets before eventually taking the drugs. But sadly, in Table 5, we see that a whopping 85% of these readers did not fully understand what was read while only 15% of them said that they did.

From those that understood the read leaflets, as summarised in Table 6, 17% claimed that the familiar nature of the words used in the leaflets aided their understanding while 38% said that the sentences used in the leaflets were simple and straight forward. Then, 45% of them cited other language features came to their aid in understanding the leaflets. On the other hand, 30% of the respondents that did not understand the read leaflets cited the strange nature of the words used, while, 23% said the leaflets were too long, and 22% alluded that the sentences were complex and difficult to understand. Lastly, 25% of the respondents were of the view that all the reasons cited aided their lack of understanding, that is: the words were strange, the leaflet was too long, and the sentences were complex and difficult to understand. Please, see Table 7.

From Table 8, we see that 88% of the respondents wished the malaria drug leaflets be written in a simpler language so that they could easily read and understand. On the other hand, only 12.% were of the view that there was no need to use a simpler language, perhaps, because the language was simple to them, already. Lastly, in Table 9, a list of presumably difficult words was given to the respondents to ascertain if they considered them difficult too. 88% of the respondents found the words difficult while 12% found the words simple. So, we can adduce that most Nigerians find the words used in the malaria drug leaflets difficult, and as indicated in Table 8, would them be simplified.

DISCUSSION OF THE FINDINGS

From our analysis, we find out that most educated Nigerians (81%) practise self-medication. The high number of Nigerians who practise self-medication is similar to the findings from an earlier study of Ayanwale, Okafor, and Odukoya (2017), where it is discovered that 311 out of 337 amounting to (92.3%) of the respondents practise self-medication. In as much as it is not encouraged, it is a reality we have to leave with and proper safety measures and enlightenment must be done to make sure that at least, the educated ones who self-medicate, are safe to a high degree through the information available on the malaria drug leaflets. This means that if they get any drug across the counter or from recommendations from friends and acquaintances, they can get a whole lot of information from the malaria drug leaflets in order to make a sane judgment of its safety for use.

The above discovery leads us to another finding, which borders on the malaria drug leaflets that are usually not comprehensible to a large population of the educated Nigerians. Our findings, as summarised in Table 5, reveal that 85% of the respondents (i.e. 768 out of 900) do not fully understand the information contained in the malaria drug leaflets. This means that the leaflets are not communicative, enough. The above result validates the study of Adibe, Igboeli, Ubaka, Udeogaranya, Onwudiwe and Ita (2015) that advertising materials, which actually include the PILs under study used in promoting drugs in Nigeria, have incomplete information and the physical characteristics of the materials are not adequate. Their study reveals further that 'it seems that drug industries at present mainly aim at increasing sales rather than promoting health care. Information in some pharmaceutical brochures exaggerated the benefits of the drug and downplayed risks associated with the drugs' (p. 539).

Though 15% of our respondents are in the affirmative as regards their understanding of the malaria drug leaflets, it is abysmally low for comfort. Many of this 15% claim the simple sentences of the leaflets as the reason behind their comprehension of the leaflets. However, the larger population of the entire study respondents (85%) alludes that the leaflets contain long and complex sentences with strange medical-based words. To them, most of the vocabulary items of the drug leaflets are jargons, to use the direct sociolinguistic register. A look at some of these malaria drug leaflets reveals that there are more of complex sentences as compared to the simple sentences. But it would require further studies to ascertain if complex sentences reduce comprehensibility of written texts, a matter that is outside the scope of the present study.

A similar aspect to complex sentences is the use of predominantly medical and technical words and terms for a text whose target audience are mainly non-medical personnel at least in the context of self-medication. At this instance, we refer to the words that are strange, which are not everyday or common words to be understood by the layman. The last question presented in the questionnaire for the study bordered on if the respondents understood about five words which the researcher considered strange and unfamiliar for non-medical practitioners. 88% of the respondents agree that the words are indeed strange. Only 12 % of the respondents say it is familiar. Some of these lexical items elicited from the malaria PILs studied are: *reciprocal potentiation, synergistic action, pyrimethamine, intermittent, hypersensitivity to sulfonamides, falcidrum malarial, erythrocytic stage, cerebral type of malaria, pernicious malaria, plasmodium vivax, chloroquine, falcidrum, food vacuole, reactive metabolites, excipients, pulmonary oedema, teratogenic potential,* and *arthemether*. The words above are majorly used in the medical profession and the core scientific fields. Most drug users are not in these fields to gain more insight. In a study conducted by Laurea (2013), it is discovered that most patients do not understand the technical words used by doctors to describe their illnesses. The study recommends that 'physicians need to keep in mind that patients may not comprehend all the medical terms they use, thus they should always check their patients' understanding. On the other hand, patients should not feel embarrassed to ask questions or explanations from their physicians -after all, they are talking about their own health' (p.103). Though the focus here is not on the nature of the language used by the doctors and patients but there is a similarity in the use of some technical words as can be seen above. Going by the recommendation of Laurea (2013), it would not be wrong to advise malaria drug users in Nigeria to ask competent persons as regards the interpretation of these technical items in the PILs.

According to Hill and Bird (2013, p. 1), 'the majority of health professionals believe that providing patients with information about their disease and treatments is an important aspect of their care.' This means that a detailed and simple communication is important for the drug users. Also, in an editorial, Etchells (1999) states that the provision of information is considered to be a fundamental ethical, legal and professional obligations. Information is important for all the groups of drug users whether in a health care facility or in an across the counter situation.

Furthermore, concerning the simplification of PILs language, it would take further studies to unravel if there are simpler ways of writing these leaflets without necessarily using the high sounding, technical and unfamiliar words. Studies will also need to be done to examine of the complex sentences identified with PILs can be simplified. This is because from our study, 88% of the respondents wish the PILs be written in a simpler language that will engender effective communication, which they will understand. This, in a way, negates the study of Beusekom, et al. (2016), where it is discovered that only the people with low literacy struggle with the

comprehension of the information available in PILs. Since the present study adopts respondents from the educated group, one would have thought that, the results would have been better in terms of their PILs' comprehension. But, alas, that is not the case as both groups (low literate and very literate) opt for the PILs to be written in a language that is more accessible.

This resonates for a study on how best to write PILs in a language that will be accessible to all since drugs, especially malaria drugs, are used by both the literates and the illiterates in Nigeria. Such a study will be of importance because of the alarming data of people, arising from our study, who do self-medication (81%); those that read the drug leaflets without understanding (85%); and the 88%, who say some of the words are difficult to understand coupled with the problems of complex and lengthy sentences.

CONCLUSIONS, RECOMMENDATIONS AND SUMMARY

In view of the study above, we conclude that: Nigerians, indeed, self-medicate on the malaria drugs, majority of who do not get the needed information on the drug leaflets owning to the ineffective communication modes of the PILs. These incomprehensible modes, mainly, are: the use of strange and difficult words, and lengthy and complex sentence structures.

We, therefore, recommend that the malaria drug, and by inference, other drug manufacturers should consider their target audience in choosing the type of words and expressions they will use to write the drugs' leaflets. Thus, easily accessible explanation and terms, rather than complex expression and jargon, be explored.

In summary, the study obtained responses from 900 educated Nigerians on the effective communication of the malaria drug leaflets. We have established that many educated Nigerians do not consult medical practitioners before determining the malaria drugs to be taken; rather, they rely on the PILs. Also, we establish that the malaria PILs do not communicate the right message to educated Nigerians, who engage in self-medication, due to their incomprehensibility. A larger population is of the opinion that a simpler language be used to aid understanding of PILs.

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