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RESEARCH ARTICLE

Health Information Literacy among Malaria Patients in Ghana: Sustainable Development Goals (SDG) 3 in Focus

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Abstract:

Background:

This cross-sectional survey aimed to ascertain the knowledge of malaria patients in determining the nature and extent of health information needed; accessing the needed health information effectively and efficiently; evaluating such health information and its sources critically in order to use the information.

Methods/Results:

A self-reported questionnaire was given to 155 participants in selected “drug stores” in Ho in the Volta Region of Ghana. Positive relationships were found between respondents whose decision to purchase malaria drugs was based on laboratory tests and high health information literacy skills. Low knowledge of libraries among the respondents was recorded even though there was no significant difference between the health information literacy of those who see the library as a source of health information and those who do not.

Conclusion:

There is a need to involve libraries in the health delivery system in order to help extend literacy training/skills to the citizenry.

Keywords: : Malaria, Information literacy, Health information, Information seeking-behaviour, Ghana, Sustainable development goals.

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1. INTRODUCTION

Health information literacy, a concept that has become synonymous with health literacy focusing on active searching and evaluating health related information by people [1], has gained much prominence among most citizenry. It has been defined as “the cognitive and social aptitudes which influence the people’s inspiration and capacity to access, comprehend and utilise information in manners which advance and maintain great health and wellbeing” [2] and according to Dodson and colleagues, it requires an individual to have the skills to access, understand, appraise and use the information and services to make decisions about their health and the health of their family and the community [3].

Sørensen and colleagues also view health information literacy as one that “entails people’s knowledge, motivation and competence to access, understand, appraise, and apply hea-

lth information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course” [4]. In tandem with other researchers, Mayer hypothesised that health information literacy “comprises a set of abilities and skills needed to recognise a health information need, search and evaluate health information from multiple sources, and to use this information to make appropriate health decisions” [1].

Low levels of health literacy common in vulnerable populations, people with low levels of income and education, and people with a compromised health status [5, 6], is associated with inadequate knowledge about the health as well as the healthcare system, poor access and utilisation of health services and also increased hospitalisation [7]. These, according to various authorities, lead to poor health outcomes and health inequalities [8 - 10]. Also, low health literacy has been predicted to influence harmful consequences in older age [11, 12].

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Even though, number three (3) of the Sustainable Development Goals (SDG) specifically targets health (to ensure healthy lives and to promote wellbeing at all ages), it can be seen that most of the other goals: SDG1 (No poverty), SDG2 (Zero hunger), SDG4 (Quality education), SDG8 (Decent work and economic growth), and SDG10 (Reduced inequalities) are all indirectly linked to health. SDG3 addresses maternal health, neonatal and child health, AIDS, tuberculosis, malaria and includes universal access to sexual and reproductive health services including family planning [7].

Malaria, which is sometimes called the “King of Diseases”, is caused by protozoan parasites of the genus *Plasmodium* [13], remains a major public health challenge in Sub Saharan Africa with about 88% of the total world cases and 90% of deaths in 2015 [14]. Regarding this disease, Ghana recorded about 38% of outpatient visits and 27.3% of admissions in health facilities and 48.5% of under-five deaths in 2015, which make it one of the leading causes of morbidity and mortality [15]. In a study on the “economic burden of malaria on businesses in Ghana”, Nonvignon stated that “businesses in Ghana lost about US\$6.58 million to malaria in 2014, 90% of which were direct costs; and a total of 3913 workdays were lost due to malaria during the period of the study” [16]. These concerns and statistics justify any study that aims at reducing/eradicating this prevalence of this endemic in the country. Understanding the level of health information literacy among people who are likely to suffer from malaria is a key step in meeting SDG3.

Libraries are recognised for their firm belief in the right to access to information, and this naturally extends to the right to accessing and understanding health related information [17], with public libraries playing important roles in basic literacy training [18]. This role of libraries in literacy training needs to be enhanced and extended to include health information literacy training. Extending library services to vulnerable people, would not only make them information conscious but it will also go a long way to “ensuring healthy lives and promoting well-being for all” – SDG3 [19]. This cross-sectional survey was, thus, aimed at ascertaining the knowledge of malaria patients in determining the nature and extent of health information needed; accessing the needed health information effectively and efficiently; evaluating such health information and its sources critically in order use the information effectively.

2. METHODS

2.1. Subjects

This cross-sectional survey conveniently selected four “drug stores” in Ho, Volta Region of Ghana, where customers who came to buy malaria drugs for themselves were purposively selected. One hundred and fifty-five (155) customers participated in this study. Permission was sought from the managers of the four “drug-stores” in order to use their facility and customers for the study. These drug-stores were conveniently selected based on the willingness of the managers to allow their facilities to be used and also the willingness of the buyers to respond to the survey. In all, the researchers received permissions from six (6) drug-stores scattered across the Ho township. However, only four (4) had respondents agreeing to

answer the questionnaires. The objectives of the study were explained to participants, and those who were interested and willing gave their consents to participate in the study.

2.2. Data Collection Tool

This study used both primary and secondary data. Primary data was used to collect data regarding respondents’ ability to recognise the need for health information, access the needed information, evaluate and use the said health information through the use of a self-reported structured questionnaire. Also, information about age, gender, and educational background was collected to appreciate the socio-demographic characteristics of the respondents. Secondary data was collected through a review of related literature to understand current and previous studies on the topic and also appreciate the gap in the literature that needs to be bridged.

2.3. Statistical Analysis

The self-reported questionnaire consisted of two parts. Part one assessed respondents’ basic knowledge of malaria. The cumulative percentage of the various scores was calculated. Items or groups that scored 80% or more were ranked as “Excellent,” those within $60 \leq x < 80$ were ranked as “Average” and scores that were less than 60% were ranked as “Poor” [20]. Continuous variables were expressed as their mean \pm standard deviation, whereas categorical variables were expressed as figure and proportion. Comparisons of the general characteristics of groups of interest were performed using chi-square tests, or Fisher exact tests where appropriate. A level of $P < 0.05$ was considered statistically significant for all analyses. Microsoft Excel and GraphPad Prism version 6.00 were used for statistical analysis where appropriate.

3. RESULTS

Among the 155 respondents of this study, it was found out that the majority were males 88 (56.77%). These respondents had an average age of 31.87 ± 8.22 years, with the majority of them enrolled in secondary school at the time of this survey. It was also found that majority of the respondents were working in the informal sector 90 (58.06%). Refer to Table 1 for details on the demographic characteristics of the respondents.

Regarding how health information literates the respondents were the study established that respondents who went to buy malaria drugs based on a laboratory test exhibited a higher level of knowledge. Significantly, the study revealed that respondents whose decisions to purchase malaria drugs were based on laboratory tests demonstrated high skills in determining the nature and extent of health information they needed (P -value: < 0.0001); evaluating such health information and its sources critically (P -value: < 0.0001); and using the health information effectively (P -value: < 0.0075). However, the study could not establish any significant difference among the respondents regarding their ability to access the needed health information (P -value: < 1.0000). Refer to Table 2 for respondents’ health information literacy skills stratified into those who presented laboratory results at the time of buying drugs and those whose decision to purchase such drugs was based on past experience, experience of weakness and headache, and recommendations from family and friends.

Table 1. Demographic characteristics of respondents.

Parameters	Frequency N = 155	Percentage 100
Gender		
Males	88	56.77
Females	67	43.23
Age	31.87*	8.22**
Educational status		
No education	17	10.97
Basic	13	8.39
Secondary	89	57.42
Tertiary	36	23.22
Religion		
Christianity	81	52.26
Islamic	74	47.74
Employment status		
No employment	38	24.52
Formal	27	17.42
Informal	90	58.06
Marital status		
Married	79	50.97
Single	76	49.03

Apart from Age, all data are frequency and their corresponding percentages. Age is presented as mean* and standard deviation**

Table 2. Health information literacy skills of respondents.

Parameters	Respondents with lab test N = 64	Respondents without lab test N = 91	P-value
Skills to know the need for health information			
Excellent	61(95.31)	26(28.57)	< 0.0001
Average	2(3.13)	31(34.07)	
Poor	1(1.56)	34(37.36)	
Skills to access the needed health information			
Excellent access	47(73.44)	66(72.53)	1.0000
Poor	17(26.56)	25(27.47)	
Skills to evaluate the accessed health information			
Excellent	28(43.75)	5(5.49)	< 0.0001
Average	5(7.81)	9(9.89)	
Poor	31(48.44)	77(84.62)	
Skills to effectively use the accessed health information			
Excellent	32(50.00)	26(28.57)	0.0075
Poor	32(50.00)	65(71.43)	

Data are presented as figure with percentage in parenthesis. P is significant at <0.05. HI means Health Information

This survey also sought to find out from the respondents the various sources of their health information. Particularly, the study focused on the source of information behind the respondents' decisions to purchase any drug. Regarding this, it was established that there was no significant difference between the male and female respondents' sources of information on drug purchase (*P-value*: <0.7171). However, it was ascertained that the majority of both males 27(30.68%) and females 24(35.82%) based their decisions on doctors or health workers' advice. Also, with regard to the sources of respondents' information on the treatment/prevention of malaria, it was found that majority of both males 31(35.23%) and females

27(40.30%) depended on information from friends and relatives. Refer to Table 3 for details on respondents' sources of health information.

Another important finding of this study was how respondents view libraries as sources of information and how these views reflected in their health information literacy. The study found out that only 34(21.94%) respondents believed that libraries could be rich sources of health information. Predominantly, apart from users' ability to use health information effectively and efficiently (*P-value*: 0.0086), it was found that there was no significant difference between those who view

libraries as sources of health information and those who do not in all categories. Thus, knowledge of libraries as sources of information does not have much influence on patients' knowledge health information literacy (Table 4).

4. DISCUSSION

This paper presents results on the knowledge of malaria patients in identifying the needs for health-related information, and how confident they are regarding their abilities to obtain and use needed information for the benefit of their own health. The findings of this study revealed that patients who are health information literate presented at the pharmacies or "drug stores" with laboratory reports before purchasing their drugs. Rapid and effective malaria diagnosis does not only alleviates suffering, but also decreases community transmission [13]. The nonspecific nature of the clinical signs and symptoms of malaria may result in over-treatment of malaria or non-treatment of other diseases in malaria-endemic areas, and misdiagnosis in non-endemic areas [21]. Thus, medically, the laboratory-based test is recommended for malaria diagnosis. This, therefore, confirms that those who are health literate are

more likely to undergo a laboratory test before taking any drug. This assertion and facts supporting it are in tandem with the findings of this study which confirms a positive relationship between health information literacy and adherence to right health procedures.

In tandem with previous studies, this study reported that there is no significant difference between males and females regarding their sources of health information [23, 24]. The report of high dependence on friends/relatives and other informal sources of information has been presented in other studies [19, 24 - 26]. This finding may be due to the poor health information literacy among those who purchased drugs without laboratory reports as recorded in Table 2. Thus, most of such respondents depend on such informal sources that are close to them, easy to comprehend and less expensive to obtain, in order to meet their health information needs.

Libraries, for a long period, have engaged the public in many areas including health [27]. However, this study does not support the assertion that libraries engage the public in health issues. This may be as a result of the view of Uzuegbu (2016)

Table 3. Respondents' sources of health information.

Parameters	Male N = 88	Female N = 67	P-value
Sources of information on drug decisions			
Media adverts	17(19.32)	9(13.43)	0.7171
Friends/relatives	26(29.55)	22(32.84)	
Doctors/health workers	27(30.68)	24(35.82)	
Past experience/exposure	18(20.45)	12(17.91)	
Sources of information on the treatment/prevention of malaria			
Media programmes	27(30.68)	15(22.39)	0.5121
Health workers	30(34.09)	25(37.31)	
Friends/relatives	31(35.23)	27(40.30)	

Data are presented as figure with percentage in parenthesis. P is significant at <0.05

Table 4. Knowledge of health information based on respondents' view of libraries as sources of health information.

Parameters	Libraries as sources of HI N = 34	Libraries not as sources of HI N = 121	P-value
Ability to know			
Excellent knowledge	23(67.65)	64(52.89)	0.0915
Average	8(23.53)	25(20.66)	
Poor	3(8.82)	32(26.45)	
Ability to access			
Excellent access	25(73.53)	88(72.73)	1.0000
Poor	9(26.47)	33(27.27)	
Ability to evaluate			
Excellent knowledge	3(8.82)	30(24.79)	0.0749
Average	2(5.88)	12(9.92)	
Poor	29(85.29)	79(65.29)	
Ability to use			
Excellent access	6(17.65)	52(42.98)	0.0086
Poor	28(82.35)	69(57.02)	

Data are presented as figure with percentage in parenthesis. P is significant at <0.05. HI means Health Information

that “the outreach programmes of the present day public libraries in Sub-Saharan Africa do not offer the effective information service delivery required because they lack the ethos to successfully execute such tasks” [27].

CONCLUSION

This study has established a positive relationship between health information literacy and patients’ adherence to basic clinical procedures. It has been found that those who presented laboratory reports prior to purchasing malaria drugs exhibited high information literacy skills. This may be true with adherence to other medical requirements like drug adherence among others. Such positive attitudes do not only affect the patient’s health positively, but will also go a long way in achieving SDG3 in the long run. Although the study did not report any direct relationship between knowledge of libraries and excellent health information literacy, it is still recommended that public libraries should take interest in the health care delivery system of the country as libraries have been recognised for their firm belief in the right to access to information and their literacy training skills. Libraries can create educational programmes and nurtured relationships with health and community agencies and use innovative outreach methods to reach their user populations [26]. Getting the citizenry aware and interested in their health information literacy will sustain a healthy society.

AUTHORS' CONTRIBUTIONS

This work was carried out with collaboration between all authors. Authors DDA and GCY conceptualised and designed the study. Both authors recruited participants and generated the data. Author DDA analysed the data and drafted the manuscript. All Authors reviewed the manuscript for intellectual content and each author approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from ethical committee of University of Health and Allied Science, Ho, Ghana.

HUMAN AND ANIMAL RIGHTS

No animals/ humans were used for studies that are the basis of this research.

CONSENT FOR PUBLICATION

This study was anonymous and non-linked. Confidentiality of respondents was assured. All participants read and understood the objectives of the study and consented to participate in the study. For those who could not read, research assistants helped to read and explain the objectives to them.

CONFLICT OF INTEREST

The authors declare no conflicts of interest, financial or otherwise.

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