

Information Need, Health Literacy, and Preventive-Health Behaviour among Individuals in a Rural Community of Ikenne Local Government Area, Nigeria

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Abstract

Objective: This study sort to ascertain the levels of information need, health literacy, and preventive-health behaviour among individuals in a rural community of Ikenne Local Government area in Nigeria and determine most significantly predictor of preventive-health behaviour.

Methodology: This was a cross-sectional study that utilized interviewer-administered validated 52-item questionnaire for data collection. Measures were information need on 51-point rating scale, health literacy on 27-point, and preventive-health behaviour on 48-point reference scales respectively. Study subjects were 268 consenting individuals selected by a multistage sampling technique in a rural community of Ikenne Local Government area, Nigeria. Data analysis was by computations of means and standard deviations and test of associations to determination predictor of the outcome variable. All statistical tests were at 5% level of significance.

Results: Majority (67.2%) of participants were females with 63.8% reporting appreciable level of formal education. Mean age of respondents was 32.2±13.11 years. Level of acquired information was 25.7±5.65 with a prevalence of 50.4%, health literacy mean score was 14.97±4.23 with a prevalence of 55.4%, while mean score of preventive-health behaviour was 23.37±7.27 with a prevalence of 48.7%. All levels of variables measured were considered average scores. Regression analysis showed that preventive-health behaviour was significantly dependent on health literacy ($\beta = 0.397$; $t=5.07$; $p<0.001$), and level of acquired information ($\beta= -0.211$; $t= -2.696$; $p<0.008$).

Conclusion: The study concludes that levels of acquired information, health literacy, and preventive-health behaviour observed are low. The observed high information-deficit would explain the observed inadequate preventive-health behaviour reported in the study.

Keywords: Health literacy, Information need, health-choices, Preventive-health practices.

Introduction

Information is considered an essential resource necessary in the learning process that serve to raise conscious awareness of the consequences of various phenomenon that put health status at great risk with outcomes that have far-reaching consequences to health. Information facilitates decision-making in resolving course of action when there are many options. Health outcomes of populations are significantly determined by functional health literacy, information available at their disposal to activate cognitive conscious awareness of relevance in responding and understanding the full ramifications of social and health issues of

relevance in the process of achieving and sustaining wellbeing [1]. These personal-level characteristics are modified by the cultural settings, educational opportunities, behavioural skills developed and socio-economic variables that underpin social life in the community.

It is now clearly established that health outcomes are dependent on health behaviour and in turn dependent on antecedents associated with health literacy [2], such as available health-related information and decision-making processes involved at the individual level. Health education has been described as important framework in closing knowledge gaps in individuals created by disparities in social

opportunities, through normative re-education of the mind-set and considered the most effective method of acquisition of cognitive skills in preventing disease than any other intervention [3]. Health education, therefore, provides the consciousness-raising, concern-arousing, action-stimulating impetus for population commitment and involvement in social reforms essential for sustainable development of the community in which we live and operate [4].

Health literacy is therefore an important outcome expected from health education activities and is primarily related to information dissemination and processing. In a review [5] that cited Nutbeam (1998) [6], defined health literacy as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health”. Similarly, Sheridan and colleagues (2011) [7] citing the Institute of Medicine (2004) [8] stated that health literacy is “*the degree to which individuals can obtain, process, and understand the basic health information and services they need to make appropriate health-related decisions*”. Furthermore, others have emphasized that health literacy represent the extent to which individuals can source information, process and understand the basic health information, and services required to make important health-related decisions that would improve quality of life or stimulate help-seeking at health protection level [1, 9, 10, 11, 12, 13].

Vast number of communities in developing and developed countries have been described as having low literacy levels and this has been considered as an important factor contributing to poor health outcomes, especially among females accounting for health disparities in these communities [14]. Lack of functional health literacy is an important factor responsible for a considerable proportion of individuals in the rural communities failing to use health services effectively [15] or follow medical directives for health maintenance [2]. Persons with limited health literacy can be at serious social disadvantage in terms of their ability to read and understand written medical instructions, including medication dosages and comprehend the implications and interpretations of results of medical tests and diagnosis, locate health providers and services offered, share personal

information such as health history, provide self-care in chronic illnesses, understand how to take medicines. In conceptualizing this study, it was hypothesized that preventive health behaviour will be significantly dependent on the information need of participants, and with the level of health literacy. The study sought to uncover the dynamics underpinning the role of information, health literacy in activating preventive-health behaviour among individuals of a rural community.

Materials and methods

Study design, subjects and settings

This study was a community-based cross-sectional survey design. Instrument adopted for the study was a validated 52-item questionnaire with internal consistency of 0.75. Data was collected about Information needs, health literacy, and preventive-health behaviour from 268 consenting individuals in the rural community of Ilishan in Ikenne Local Government area, Nigeria by multistage sampling of streets and households in the community. Trained research assistants collected data from participants who were required to respond to the items in the questionnaire constructed in both English and local language by interviewer-administered techniques. Variables of level of information-need regarding health issues and consequences, health literacy, and preventive-health behaviour were measured by data transformation from responses given by the participants and reduction using IBM SPSS version 24 to compute means and standard deviations and test associations between variables and determine path analysis of best predictors of substance-use prevention, at 5% level of significance.

Development of instruments for the study

The 52-item questionnaire developed measured responses of participants regarding demographic characteristics, information need, health literacy, and level of preventive-health actions performed by the respondents. In developing the questionnaire for this study, four conceptual domains related to health literacy were considered; educational attainment, ability to read in at least one language within the local region, ability to use the information to choose health options and ability to recognize health information on product packaging. Furthermore,

information need was conceptualized by considering the function of information as a resource in resolving course of action required in decision-making process and information-deficit related to what is necessary to maintain quality of life and well-being, information-insufficiency related to understanding specific prevalent health issues within the community, information-deficit affecting taking preventive actions in specific health situations, and respondents' reported reluctance of health workers to provide complete information to respondents during contact. Finally, Preventive health activities focused on actions within the domains of nutrition, hygiene practices, prevention of malaria and medical check-up necessary to keep an individual relatively healthy. The validity of the instrument was derived from conceptual operationalization of major variables in the study as measures described below.

Measures of information need

Measures of information need was incorporated in the questionnaire as a diagnostic tool expressed by items considering issues of information-deficit related to what is necessary to maintain quality of life and well-being, information-insufficiency related to understanding specific prevalent health concerns within the community, information-deficit to enable taking preventive actions in specific health situations, and reluctance of health workers to provide complete information to respondents during contact. Information need was measured on a 4-point Likert-type scale with responses such as *Strongly Disagree*, *Disagree*, *Agree* and *Strongly Agree* coded to allow values on the information-need domain represented by little or no acquired information to be scored low (0, 1, 2 and 3) and reflects that the respondent has relatively all it takes to resolve health issues with the information at their disposal. The perception items were weighted aggregate scores to create a scale of measurement on a 51-point rating scale.

Measures of health literacy

Health literacy was operationalized through questionnaire items which incorporated educational attainment, ability to use a language to understand health instructions, cognitive awareness of basic health-related situations as it

may affect the individual, symptom-recognitions and health actions required with corresponding knowledge about preventive-health activities, health-enhancing activities and self-management course of actions in specific health conditions. Health Literacy variables were measured on weighted aggregate score of 27-point rating scale, where scores below 13 points were considered to reflect below average health literacy while scores between 13 to 21 points considered above average health literacy attainment and scores above 21 points was considered good level of health literacy.

Measures of preventive health behaviour

Preventive-health behaviour was measured on a maximum 48-point weighted aggregated reference scale consisting items regarding dietary consumption of nutritionally balanced foods, sanitary and hygiene practices, prevention of malaria and consistency in medical check-up necessary to keep an individual relatively healthy. Response categories was the 4-point Likert-type scale in which *Not at all*, *Rarely*, *Occasionally* and *Very often* were assigned scores of 0, 1, 2, and 3 to indicate frequency of performance of the preventive-health action of interest. Here high scores represented healthy practices while low scores represented health practices that offered least protection from illness-related lifestyle.

Data analysis

Data analysis was conducted using the computer-assisted statistical software, Statistical Package for Social Sciences (IBM SPSS) version 24. Descriptive statistics such as frequency distributions, means and standard deviation were used to evaluate levels of information need, health literacy, and preventive health behaviour. Regression analysis was conducted to characterize and validate associations between moderating variables and outcome dependent variables, and whether they validate the research hypothesis. The level of significance was set at $p=0.05$ for all statistical procedures.

Results

The results in this study showed that the mean age of respondents was 32.2 ± 13.10 years and there were 88(32.8%) males and 180 (67.2%) females who participated. Most of the

participants are from the Yoruba (48.9%) and Igbo (39.6%) ethnic expressions. In the study, there were participants with non-formal (15.0%), primary (20.9%), high school (59.7%) and above high school (4.5%) education respectively. There were participants who reported most able to read in the English language (91.0%), and those who indicated proficiency to read in the local languages (77.6%), Pidgin English (4.5%), and unable to read (10.4%) in any language.

Information need

Responses to sub-variables that measured information need showed that 65% of the respondents accepted that health information is an important resource relevant for maintaining health and wellbeing, and that 112(41.8%) respondents reported information-deficit in matters related to HIV/AIDS infection transmission, 64(23.9%) indicated needing information about malaria infection, and 152(56.7%) respondents reported lack of complete information about available health services in the community. Further, 64 (23.9%) respondents in the study indicated that they lacked complete information about HIV risk-reduction, while 88 (32.8%) reported being deprived information related to their health and 136 (50.7%) signified that “*not enough information was given to them when receiving treatment during consultations with care givers*”.

Similarly, perceived health information needs measured on an aggregated 51-point weighted rating scale recorded a mean score of 25.8 ± 5.31 . Since high scores imply information-deficit, this group of participants demonstrated 50.6% deficiency in health information required to facilitate their health and contribute to improving their quality of life. (See Table 1).

Health literacy

Questionnaire items that asked participants about their ability to read and understand health-related instructions with or without further assistance beyond the initial explanation offered by health care providers showed that 48(19.9%) respondents reported needing further explanations regarding medication instructions about when to take prescribed drugs, 40(14.9%) participants expressed requiring assurance and

reiteration on how to take medications, and 90(33.6%) required assistance to explain their health conditions that warranted taking the medication. On the other hand, 152(56.7%) reported that they can follow instructions without getting confused if instructions are clearly written and verbally explained by health care personnel such as the nurse or pharmacist. Health Literacy measured on an aggregated weighted 27-point rating scale recorded a mean score of 14.44 ± 3.85 , just above average (*HL prevalence of 53.48%*) rating for participants in this study. (See Table 1).

Preventive health behaviour

Again, exploring the variables describing preventive-health activity, 112(41.8%) respondents reported that their health status constituted a constant concern to them, whereas 5.6% reported very often adding vitamin supplements to their diet, and 7.5% claimed to sleep very often under insecticide treated bed-nets. Regarding personal hygiene and sanitation practices, the study showed that participants (46.3%) remembered to wash their hands after using the toilet. Interestingly, the proportion of respondents who claimed to have very regular blood pressure checks and annual medical check-ups were 13.4% and 11.9% respectively. Preventive health activity measured on a 48-point reference scale for respondents in this study recorded a mean score of 23.92 ± 6.79 and translates to a prevalence of 49.83% for the sample surveyed. (See Table 1).

The research hypotheses which proposed that, preventive health behaviour will significantly be dependent on information need and level of health literacy of the sample of participants in this study, was tested using the multiple regression analysis. As anticipated in the two situations, preventive-health behaviour was significantly dependent on health literacy ($\beta = 0.367$; $t=5.07$; $p<0.0001$), and significantly negatively associated with information need ($\beta = -0.211$; $t= -2.696$; $p<0.01$). However, information need also was negatively associated with health literacy but not significant ($\beta = -0.140$; $t=1.659$; $p<0.099$). Therefore, in these associations, it can be observed that as Health Literacy increases, there is also observed corresponding increase in preventive health behaviour.

Discussion

The study was carried out to determine the level of health literacy, information needs, and preventive-health behaviour among individuals of a rural community of the Ikenne Local Government area of south-western Nigeria. Furthermore, we set out to find out the nature of their information need and whether an association exist between health literacy and preventive health behaviour of this sample of participants in order to validate the importance of health literacy in predicting both perceived health information needs and preventive-health activities. The findings strongly suggest that health literacy is an important factor in preventive health behaviour from the result of the logistic regression analysis. (See Table 3) Consequently, where health literacy is low, therefore it is expected that preventive health behaviour would be low too, as the result in this study has demonstrated.

Confidence in these findings is strengthened and enhanced because of the rigour involved in designing the instrument used. In developing the questionnaire for the study, four conceptual domains of health literacy that is culturally sensitive, but not entirely exhaustive,

were considered which included educational attainment, ability to read health instructions in at least one language used within the local community, recognition of information-related to common health issues within the locality, and decision-making related to preventive-health actions relevant to locally prevailing health issues. The selection of measures was guided by conceptual issues under review; health literacy, information needs and preventive-health behaviour. Conceptually, health literacy is driven by health education and social/media (Information, Education and Counselling; IEC) experiences, and this is ecologically determined. Even though the study revealed that a significant proportion of the participants (56.7%) indicated having no difficulty in following instructions without getting confused, if the instructions are clearly written and verbally explained by healthcare providers, an appreciable (43.3%) proportion of the participants indicated needing help in explaining clearly what their illnesses are and required frequent reminding on how to take medications prescribed. These parameters provided the basis of an above average health literacy ratings for the participants in the study.

Table 1. Summaries of descriptive statistics for variables measured in the study

Variables	Reference Scale of Measure	Respondents in this Study N=604		Prevalence (%)
		\bar{X}	\pm SD	
Age	-	32.2	13.10	-
Information Need	51	25.81	5.31	50.60
Health Literacy	27	14.44	3.85	53.48
Preventive Health Behaviour	48	23.92	6.79	49.83

Table 2. Coefficients for multiple regression analysis of predictor variables against preventive health behaviour for participants in the study

Variables	Preventive Health Behaviour				
	B	SE	β	t-value	P-value
Information Need	-0.269	0.100	-0.211	-2.696	0.008
Health Literacy	0.697	0.137	0.367	5.07	0.000

Table 3. Logistic regression analysis of predictor variables against preventive health behaviour for participants in the study

Variables	Preventive Health Behaviour				
	B	Wald	OR	95%CI	P-value
Information Need	-0.090	5.91	0.914	0.83 – 0.98	0.015
Health Literacy	0.199	13.99	1.22	1.099 – 1.354	0.000
Constant	-0.834	0.597	0.434	-	0.440

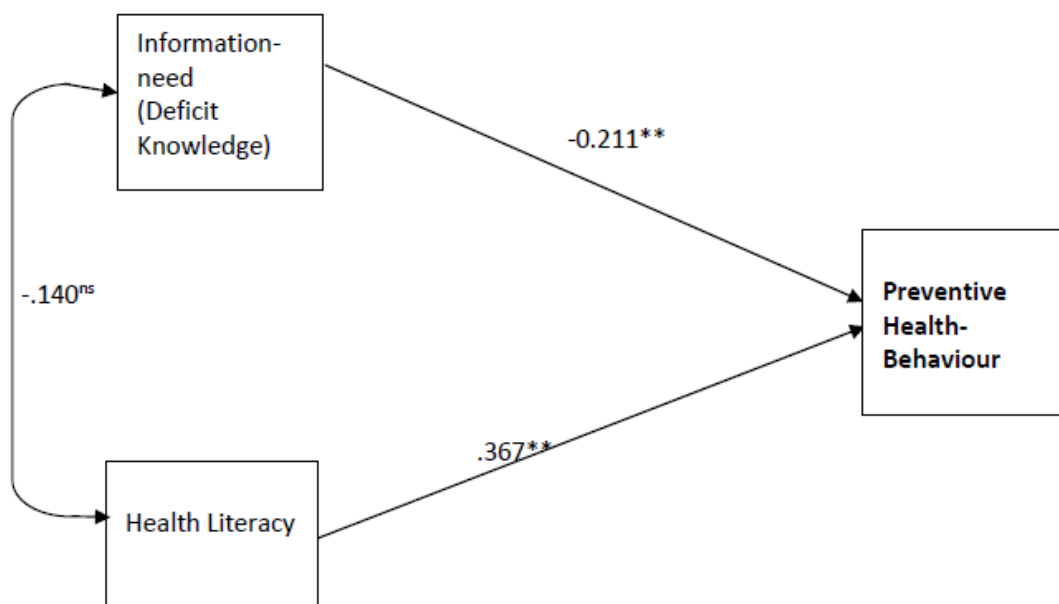


Figure 1. Path analysis of information -health literacy-preventive health behaviour continuum significant at $p < 0.001$

Health literacy has important implications in facilitating improved health and treatment adherence in chronic illnesses, where individuals are expected to be able to read and understand medical instructions needed to be followed to restore health [16]. Individuals with protracted illnesses need information in order to understand the nature of their illnesses, what works and what does not work. It has been said that poor adherence to treatment in chronic illnesses is significantly responsible for the poor outcomes of medical treatment [17, 18]. Low health literacy is an important factor contributing to poor adherence to medical requirement[19].The degree to which an individual in a rural setting may obtain and process health information for personal health action depend considerably on the level to which they acknowledge their health needs and the level of understanding and meaning such information conveys to the individual for health instruction; and this becomes the gateway for high intellectual processing of the information for decision-making. In order to achieve the desired goal of facilitating understanding, this process may involve changing the form in which the original information is transmitted in order to extract what is relevant to the individual and contextualize this to the appropriate population.

Information needs assessment was incorporated in the study as a diagnostic tool to identify the level of health information-deficit among the study sample. The study showed that a significant proportion of respondents reported information-blackout during consultations with their caregivers and 50.7% of the participants claimed that caregivers did not provide full information about their treatment plans at the time of consultation. However, levels of information need measured was not optimal and reflected an information-deficit of 50.4% rating. Consequently, there is great need for health information dissemination through health counseling among the population. There have been anecdotal claims that caregiver's refusal to provide patients with full information pertaining to names of medications and refusing to dispense medicines in their original manufactured packaging. This type of situation further place healthcare-seeking population at the mercy of the caregivers.

Preventive health behaviour was found to be below average score (Mean score =23.92 on a maximum scale of 48- points; SD=6.79) for the participants and recorded a rating of 49.8%. The regression analysis showed that preventive health behaviour of the respondents significantly depended on their health literacy and that the computed coefficient of determination (R^2),

which defined proportion of variations in the outcome variable explainable by the factor variable, was 0.135 or 13.5% ($p < 0.01$). Even though only 13.5% of variations observed in the preventive health actions variable reported in this study can be explained by health literacy variables this is considered statistically significant. Similarly, computed coefficient of determination (R^2) for information need of 0.045 or 4.5% ($p < 0.008$) is significant. It is possible that unexplained variations from other sources may account for contributions of variables not considered in this study, such as health beliefs and attitudes. These can be explored in future studies that would examine the role of these variables in shaping health literacy.

We conclude therefore, that there is a moderately low health literacy levels among the participants similar to findings elsewhere that needs to be improved. Similarly, there is an appreciable level of information-deficit related to health issues which also needs to be improved. Consequently, we report a low preventive health behaviour which may be partially as a result of the low health literacy observed in the study. This situation needs to be addressed appropriately if an improvement in health prospects of the population is to be achieved. No doubt, the purpose of research is to provide a solution to specifically identified problems or provide basic understanding of the nature and dynamics of the problem.

Health literacy is an important resource necessary for maintenance of health through informed decision-making driven by filling the information gap through adequate information dissemination. There is danger that threatens health and wellbeing in acting on wrong information, especially when it involves matters of life and death. Confidence is fostered to act on any decision made when an individual has full information about the health issue to be considered. The individuals in the community have the right to correct information that will enable them to make informed decisions pertaining to their health; this is empowerment. However, the challenge populations in rural communities have to face regarding health issues and opportunity of obtaining health information resources that would enhance quality of life differ significantly to those living in urban areas. Access to adequate health care

can be a problem for people living in remote rural areas. Such individuals may not be able to get to a hospital quickly in an emergency and may be discouraged to travel long distances to get routine check-ups and screenings, hence may put them at disadvantage in getting the needed information and services when it is critical. This isolation from available information with often fewer qualified health care workers may place these rural dwellers at the mercy of being exploited because of knowledge deficit, low health literacy, social and economic disadvantage. Information is central to decision-making process, especially when a choice is to be made between a number of available options. Cognitive ability, information and health literacy are important factors in empowerment. When individuals and communities are not empowered, disease burden is high with consequent poor quality of life.

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