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HEALTH INFORMATION LITERACY IN EVERYDAY LIFE: A STUDY OF PREGNANT WOMEN'S IN EKITI STATE, NIGERIA.

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ABSTRACT

Pregnancy is a sensitive period in a woman's life that exposes her and her unborn child to a lot of risks which may affect her health. Pregnant women need health information literacy to search for health information to manage their health to compliment the ones provided during antenatal. This study assessed the level of health information literacy among pregnant women.

The study adopted the survey research design. Two hospitals were chosen using purposive sampling from each of the three senatorial districts in the state. Non probability sampling (convenient sampling) was used to select pregnant women during their visits to antenatal clinics. A validated structured questionnaire was used to collect data. Data collected were analysed using descriptive.

Findings revealed that the level of health information literacy of pregnant women in Ekiti State was low.
The study concluded that there is low level of health literacy among pregnant women.

Keywords: Health information literacy, pregnant women, quality of life, Ekiti State, Nigeria

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1. INTRODUCTION

Pregnancy is a sensitive period in a woman's life and it exposes her and her unborn child to lots of risks. These risks are as a result of altered physiological function of the body that affects the biochemistry and anatomy of the woman's body, which eventually affects their Quality of Life (QoL) (Lopes, Prochnow, & Piccinini, 2010). For pregnant women to enjoy good QoL and to have a safe delivery of their baby, they need to get information about health to promote healthy living. According to Khanum, de Souza, Sayyed and Naz (2017) gap in knowledge suffered by women in developing world can affect their quality of life and the wellbeing of their children but making health information available for pregnant women can improve their maternal health outcome.

Pregnant women need sufficient information and understanding of their health to enable them play an active role in taking decisions about their health. Information needs of pregnant women are not often met during antenatal clinic. Studies have shown inadequate communication by health care professionals during antenatal consultation (Galle, Van Parys, Roelens, & Keygnaert, 2015). Adequate and essential information is not usually passed to pregnant women. Pregnant women need necessary information to be able to take some decisions about their health. Studies by Tang, Newcomb, Gorden and Kreider, (1997) and Theroux (2011) showed that many patients after visiting the hospital still desire to seek for more information from other sources such as relatives, friends, health professionals and internet for better understanding of their health problems. The study further showed that most of the patients wanted their health care providers to suggest credible sources of health information for them and this provides alternative access to health information and boost the confidence of the patients in the information. Patient's tendency of seeking for additional health information besides the one provided by the care providers shows the existing need and gap between the health information needs of the population and the information provided by care providers (Tang et al, 1997).

Health education and health information are given to patients during antenatal clinic or other hospital visits. However, the information provided are often insufficient due to limited time of encounters. Early research shows that pregnant women go online to seek information about all aspects of pregnancy (Bjelke, Martinsson, Lendahls, & Oscarsson, 2016; Lagan, Sinclair, & 2011) and postnatal issues including medication usage (Bakhireva, Young, Dalen, Phelan, & Rayburn, 2010; Sinclair, Close, McCullough, Hughes, & Liddle, 2014). Pregnant women need evidence to take informed decisions about their health (Hansen et al., 2016). Many of the patients need detailed information about their health rather than short explanations and instructions (Daltroy, 1993) and health providers have often failed to be familiar with their patients' needs and concerns (Nelson, Kinjo, Meier, Ahmad, & Morrison, 2005) and this attitude towards their patients can cause discomfort for patients and restrict patients from asking any further question. Pregnant women's tendency to seek for health information asides the one provided by health providers constitutes a serious challenge to ensure access to health information and to ensure improvement in pregnant women's health information literacy. Pregnant women in Nigeria do not receive necessary health information during antenatal. Making health information available for pregnant women is important for having a healthier population because it helps them to participate in the management of their health and it also helps them to take informed decisions about their own health.

Pregnant women need to develop their health information literacy skill to be able to achieve the task of getting and using health information for health decision making. Health information literacy (HIL) is needed by pregnant women to identify health information needs. They must be able to access, retrieve, evaluate, understand health information and also apply them in taking health decisions.

The idea of health information literacy started in early 2000's 'to explain the health literacy concept and to understand the role health information literacy plays in empowering people to read and understand information (Medical Library Association 2003). This led to the first definition of health information literacy which was provided by the Medical Library Association (MLA) in 2003 and was further developed by the Health Information Literacy Task Force (Shipman, Kurtz-Rossi, & Funk, 2009). Health information literacy was defined

> "as the abilities to recognize a health information need; identify likely information sources and use them to retrieve relevant information; assess the quality of the information and its applicability to a specific situation; and analyze, understand, and use the information to make good health decisions". (Medical Library Association 2003, Para. 5).

Niemela, Ek, Eriksson-Backa, & Huotari (2012) and Eriksson-Backa, Ek, Niemela & Huotari (2012), in their study described health information literacy as the combination of health literacy and information literacy. Therefore the definition was coined from two related concepts: health literacy and information literacy and we need to discuss the two concepts.

Health is a unique context where the importance and necessity of information literacy needs to be emphasised. According to Cullen (2005, p. 6) the importance of maintaining information literacy is "not just a library issue, but a broadly based education and learning issue, and a health issue". Also, Grant (2002) discussed the importance of information literacy and health saying, Information literacy and consumer health are related, both playing part in health and quality of life for everybody. Therefore, it is important to discuss the concept of health information literacy and how it relates to quality of life.

However, the behavioural perspective views health information literacy as the skills or competencies a person required (Yates 2013) as defined by Medical Library Association's (2003). Literacy cannot be considered only as an individual achievement but also from socio-cultural perspective (Budd & Lloyd, 2014). Information literacy is seen as a complex set of skills that cannot be catered for by this 'tick the box' type of standards. However, most of these standards were developed for the educational context and may not be applicable to everyday health information contexts (Yates 2013).

It is crucial for pregnant women to have ability to find and understand information about their health and their baby. Before seeing doctors or their midwives which may take several weeks or months after conception, pregnant women may have to seek for health information from other sources. Having readymade information on the internet does not guaranty quality information (Frazer, Hussey, Bosch & Squire, 2015), and does not give assurance that pregnant women will understand and be able to apply it to take health decisions. Marshall and Williams (2006) in their

study examined whether and how people assess the quality of health information found in the printed formats or through the internet and they collected their data from thirty two participants in a patient support groups through focus group methodology. The participants were required to discuss their likes and dislikes about provided health information documents and to determine if they could identify quality criteria and show features they considered as causes of concern when exploring issues regarding reliability of health information. Participants were also asked to discuss health information generally about indicators needed to determine if information is good or bad. The participants in the study showed that health information quality and reliability can be evaluated in fifteen different ways and the study also recommended that there is need for proper education on health information evaluation for quality and reliability. The education should focus on training people on strategies for selecting adequately required health information that will meet personal needs.

Marshall, Henwood and Guy (2012) conducted a study on health information literacy using surveys and focus groups. They examined information literacy and information use among people using information and communication technology to manage their weight. Data was taken to examine their information landscapes, information skills, and the application of information and communication technology for weight management. According to the study, information literacy is the ability to identify where to look for information, to state a search question, to assess good and bad information and who to ask about information. The study found out that people evaluate information according to their own experience and existing knowledge. The study also went further to describe information literacy as an activity that is social and collaborative in nature. The study concluded that there is need for broader and social intervention to information literacy to ensure better collaboration between the provision and use of information.

Niemela, Eriksson-Backa and Huotari (2012) reported an empirical testing of a screening tool developed to identify people with challenges in health information literacy. They designed a 10-item screening tool using the MLA's (2003) definition of health information literacy to know individuals with challenges related to their area of 'interest and motivation, finding, understanding, appraising and using health information but being literate at the average level'. The questionnaire was administered to 217 students in secondary school in Finland. According to

the study, the tool could be used to group people's skills in health information into four, namely - low, medium, medium high and high. The study also stated that everyday life health information literacy needs to be operationalised for screening purposes.

Niemela *et al*. (2012) put forward a concept to explain health information literacy in everyday life contexts for studying patients, laypersons' in general and nonprofessional skills related to health information. The study investigated the everyday life health information literacy of 281 Finnish between sixty five and seventy nine years. The study used a self-administered questionnaire and the data was collected to assess people's health information literacy. Also, factor analysis was used to determine three different factors, namely: confidence motivation and evaluation as the basis of everyday health information literacy. Furthermore, recognising individual ability to understand health terminologies were also seen as a crucial factor of health information literacy. Therefore, the screening tool designed by Niemela *et al*. (2012) can be used to identify individuals having challenges with everyday health information literacy.

A study by Eriksson-Backa (2010) examined health information literacy among sweedish-speaking language minority in Finland that is above 65 years of age. The study used a self-administered questionnaire which was distributed to forty six people and the study approached health information from a behavioural perspective. Health information was conceptualised as "a set of abilities needed to recognize health information needs, to identify and use health information, to evaluate, understand and use health information to make good health decisions." Therefore, the questionnaire designed by Eriksson-Backa aimed to assess people's health literacy by asking questions about their needs, use, understanding of health information, preferred sources of health information and how they assess quality of health information. The study showed that people identify information needs and sources easily but have difficulty in understanding and assessing quality of health information. The study concluded that health information literacy is sufficient in some areas and still lacking in some and there is still need to expand people's scope of health information and increase awareness so that people can use health information in respect of their health.

Past studies have focused on health information literacy of health care professionals and library and librarians' role in promoting health literacy (Shipman, Kurtz-Rossi, & Funk, 2009; Yates et al, 2012). However, recent studies have begun to evaluate health information literacy from the

lay man's perspective like the study conducted among secondary school students (Niemela et al, 2012), information and communication of weight management (Marshall, Henwood & Guy, 2012), people with risky metabolic syndrome (Enwald *et al*. 2015) and adults (Eriksson-Backa *et al*. 2012, Gazibara, Kurtagic, Kisic-Tepavcevic, Nurkovic, Kovacevic, Gazibara & Pekmezovic, 2015, Hallows 2013; Yates 2013,).

Education has been seen as a determinant of health information literacy. The study conducted by Eriksson-Backa *et al*. (2012) examined the relationship between education, interest in health information, health information literacy and current health status and the study found out that there was significant correlation between interest in health information, education level, health status and health needs, use and sources. They found out that elderly people with low level of education, having poor health and having low interest in health information seeking are more vulnerable when assessing health information. They showed that education is related to the differences found in health information literacy. The study further showed that people with high level of education had higher score in their health information literacy assessment. Educated people showed knowledge of reliable nutrition information sources endorsed by nutrition specialists (Niedzwiedzka, Mazzocchi, Aschemann-Witzel, Gennaro, Verbeke & Traill, 2014). Low level education has also been found to be related to information overload and health information literacy is a predictor of information overload (Kim, Lustria, M., Burke & Kwon, 2007).

Charoghchian, Peyman and Esmaily (2018) in their study investigated maternal health literacy among pregnant women in Iran and they found out that maternal health literacy is low especially among low income earners and people with low level of education. A study conducted by Akbarinejad, Soleymani and Shahrzadi (2017) examining the association between media literacy and health literacy among pregnant women found out that more than half of the respondents have inadequate or marginal health literacy. Ghanbari, Majlessi and Majdabadi (2012) in their study investigated pregnant women's health literacy and found out that 30% of the respondents had low level of health literacy, 24.6% has moderate level of health literacy and 45.4% had high level of health literacy. Endres, Sharp, Haney and Dooley (2004) examined the relationship between functional health literacy and pregnancy preparedness among women with diabetes and the study found out that 22% of the respondents have low health literacy.

Dadipoor, Ramezankhani, Alavi, Agbmolaei and Safari-Moradabadi (2017) in their study investigated the health literacy of pregnant women in Iran and it was revealed that more than half of the pregnant women in the study have inadequate or maginal health literacy. Another study by Kohan, Ghasemi and Dodangeh (2006) examined the relationship between maternal health literacy and pregnancy outcome and found out that percentage of respondents with low, moderate and high maternal literacy are 34%, 48% and 18% respectively. Pregnant women with high health literacy had more frequent antenatal, had better folic acid consumption, neonatal weight and method of delivery.

A study by van der Heide, Wang, Droomers, Spreeuwenberg, Rademakers, and Uiters (2013) examining the relationship between health literacy, education and health found out that low education is associated with low literacy and a predictor of self reported low health status. Schillinger, Barton, Karter, Wang, and Adler (2006) examined whether literacy mediates the association between education and glycemic control among diabetes patients and found out that literacy can mediate the effects of education on glycemic control. It also revealed that 66% of people with high school education had inadequate health literacy and 44% of the respondents had high school or lower education.

The aim of this study was to examine the level of health information literacy of pregnant women in Ekiti State.

2. MATERIALS AND METHODS

The cross sectional study was conducted using a self reported questionnaires across all the three senatorial district in the Ekiti State, Nigeria. Ekiti State is one of the 36 states located in the southwest geo-political zone. It had a population of 2,398,957 based on the 2006 population census and was estimated to be 3,270,800 in 2016. Out of this, 1,183,470 (50.7%) were women (City population, 2016). Ekiti State has one tertiary health facility and twenty secondary health facilities, all of which formed the population for this study.

Eight hundred and ninety seven (897) Pregnant women were recruited using convenient sampling from six state government owned hospital in Ekiti State. Two hospitals were chosen using purposive sampling from each of the three senatorial districts in the state. Non probability sampling (convenient sampling) was used to select 897 pregnant women during their visits to

antenatal clinics. Copies of structured questionnaire were distributed to the selected pregnant women attending antenatal clinic, who can read and understand English language. The questionnaire was distributed for a period of one month during antenatal clinic. The participants were informed that their participation in the study was voluntary and their privacy would be protected. The participants responded to the questionnaires after providing informed consent to participate in the study. The pregnant women returned the questionnaires in sealed envelopes to ensure confidentiality of their information. The identity of participants was kept anonymous. 768 pregnant women returned filled copy of questionnaire and was analysed using SPSS. The study was approved by the Babcock University research and ethics committee and Babcock University Research Committee (BUHREC) and Ekiti State Ministry of Health ethical committee.

The self-administered questionnaire included questions on socio-demographic characteristics, The screening tool developed by Niemela et al (2012) was modified to suit this study and was adapted for the study. The tool was designed by applying the Medical Library Association's (2003) definition of health information literacy, and meant to investigate individuals with challenges related to their interest and motivation, finding, understanding, evaluating and use of health information. It consists of 13 questions which the respondents answered on a scale from 4 = very high level, 3 = high level, 2 = low level and 1 = very low level.
The challenges of health information literacy were also addressed.

2.1. **Data analysis**

Descriptive statistics like frequency distribution, mean and percentages was used in analyzing health information literacy. This was coded and entered into the international business management (IBM) statistical package for social sciences (SPSS) version 20.

3. RESULTS

3.1. Respondents' Socio-demographic Characteristics.

The respondents for this study were pregnant women. The basic socio-demographic characteristics investigated include age, number of pregnancy, occupation, highest educational qualification and marital status.

Table 1, it could be observed that 83.6% of pregnant women were between 20 and 40 years. Most of the participants (54.6%) fell between the age group 21-30 years. The result showed that 16.4% of the women were below 20 years. Women getting pregnant for the first term were 24.3%, 30.9% of the women are carrying their second pregnancy, and another 30.3% had had three while about 15% had more than three pregnancies. About One quarter of the respondents were civil servants, 33.2% worked with private organizations and 31.4% were self employed. About half (48.2%) of the participants were graduates. About 75% of the pregnant women were married as expected. However, 18.0% were single.

3.2 Level of health information literacy

Table 2 showed a low level of health information literacy among pregnant women in Ekiti State ($\bar{x}$ = 2.36). They had low level ability to identify specific health information needs ($\bar{x}$ = 2.42).They had low level ability to retrieve relevant information ($\bar{x}$ = 2.41). They had low level ability to access health information from various sources, they had low level ability to evaluate the quality of the information, they had low level ability to understand health information ($\bar{x}$ = 2.30) and they had low level ability to apply the health information for decision making ($\bar{x}$ = 2.29).

It is observed that pregnant women had low level ability in all constructs measured. Therefore, they need training in all constructs to improve their skills. Pregnant women need help to guide them on how to identify information needs, to access and retrieve relevant information, evaluate them, to understand health information and apply them for decision making.

3.2. Challenges of health information literacy.

Table 3 shows that 300(39.1%) respondents agreed that they are not sure of sources to trust, 468(60.9%) indicated disagreed, 267(34.8%) respondents agreed that there is limited information source and 501(65.2%) disagreed. 326(42.4%) respondents agreed that there is lack of understanding about one medical condition, 442(60.5%) disagreed. On whether they lack ability to access reliable health information 303(39.5%) agreed, 465(60.5%) disagreed. On lack ability to evaluate the quality of health information, 331(43.1%) agreed, while 437(56.9%) disagreed.

The item was considered a serious challenge when at least 40% of the respondent considered it a challenge. This implies that lack of understanding of one's medical condition and lack of ability to evaluate the quality of health information are the challenges of health information literacy among pregnant women in Ekiti State.

DISCUSSION OF FINDINGS.

The finding of this study also revealed a low level of health information literacy among pregnant women in Ekiti State with average mean score of (M = 2.36). This may be so because just a little above 50% (56%) of the respondents had at least a Bsc/ HND and above, with the rest having primary school and secondary school certificates. It may be that women with high education prefer to access maternal health care from private health institutions than from public health institutions. Charoghchian, et al. (2018) corroborates this finding and found out that maternal health literacy is low especially among low income earners and people with low level of education. Schillinger et al (2006) in their study justified the finding of this study. They found out that 66% of people with high school education had inadequate health literacy and 44% of the respondents had high school or lower education. van der Heide et al (2013) also revealed that low education is associated with low health literacy.

The result from this study which indicated a low level of health information literacy among pregnant women is consistent with findings from earlier studies. Akbarinejad, et al. (2017) found out that more than half of the respondents in their study had inadequate or marginal health literacy. Dadipoor, et al. (2017) also revealed that more than half of the pregnant women in their study had inadequate or maginal health literacy. Another study by Kohan, et al. (2006) showed that percentage of respondents with low, moderate and high maternal literacy are 34%, 48% and 18% repectively. On the contrary, Ghanbari, et al. (2012) revealed that 30% of the respondents had low, 24.6% has moderate and 45.4% had high level of health literacy showing almost half of the respondent having high health literacy. Also, Endres, et al. (2004) found out that just 22% of the respondents have low health literacy.

This study revealed that lack of understanding of one's medical condition and lack of ability to evaluate the quality of health information were the challenges of health information literacy among pregnant women in Ekiti State. According to Niemela, et al (2012), it is often

challenging to know where to seek quality information, who to trust regarding health concerns, and how to use this information to one's own benefit.

Conclusion

The study concluded that the pregnant women in Ekiti State had a low level health information literacy. Pregnant women in Ekiti State were faced with many challenges. Some of these challenges were lack of understanding of one's medical condition and lack of ability to evaluate the quality of health information are the challenges of mobile phone use and health information literacy among pregnant women in Ekiti State.

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APPENDICES

Table 1: Respondents' Socio-demographic Characteristics

Parameters	Classification	Frequency	Percentage %
Age	Less than 20 years	126	16.4
	21 years to 30 years	419	54.6
	31 years to 40 years	191	24.9
	>40 years	32	4.2
	Total	**768**	**100.0**
Number of pregnancy	One	187	24.3
	Two	237	30.9
	Three	233	30.3
	More than three	111	14.5
	Total	**768**	**100.0**
Occupation	Civil Servant	186	24.2
	Private organization employed	255	33.2
	Self employed	241	31.4
	Unemployed	86	11.2

	Total	**768**	**100.0**
Highest educational qualification	Primary school	80	10.4
	SSCE	258	33.6
	Bsc/ HND	370	48.2
	Msc	30	3.9
	Ph.D	30	3.9
	Total	**768**	**100.0**
Marital status	Single	138	18.0
	Married	585	76.2
	Widowed	26	3.4
	Divorced/Separated	19	2.5
	Total	**768**	**100.0**

Table 2: Level of health Information literacy of pregnant women in Ekiti State.

S/N	**Items**	**VHL**	**HL**	**LL**	**VLL**	**MEAN($\bar{x}$)**
	Ability to **identify** specific health information needs.					
1	I am able to identify needed information about my health	92 (12.0%)	235 (30.6%)	380 (49.5%)	61 (7.9%)	2.47
2	I know when there is need for me to seek information about my health	88 (11.5%)	178 (23.2%)	433 (56.4%)	69 (9.0%)	2.37

Average mean score = 2.42

	Ability to **retrieve** relevant information					
5	It is easy for me to find health information from printed sources (magazines and books)	91 (11.8%)	215 (28.0%)	384 (50.0%)	78 (10.2%)	2.42
6	It is easy for me to find health information from the internet	97 (12.6%)	199 (25.9%)	387 (50.4%)	85 (11.1%)	2.40

Average mean score = 2.41

	Ability to **access** health information from various sources.					
3	I like to get health information from variety of sources	93 (12.1%)	197 (25.7%)	414 (53.9)	64 (8.3%)	2.42
4	I know where to seek health information	95 (12.4%)	159 (20.7%)	437 (56.9%)	77 (10.0%)	2.35

Average mean score = 2.39

	Ability to **evaluate** the quality of the information					
7	It is easy for me to access reliability of health information from printed sources (magazines and books)	84 (10.9%)	235 (30.6%)	382 (49.7%)	67 (8.7%)	2.44
8	It is easy for me to access reliability of health information on the internet	82 (10.7%)	185 (24.1%)	416 (54.2%)	85 (11.1%)	2.34
9	It is easy for me to know who to believe on health issues	67 (8.7%)	206 (26.8%)	396 (51.6%)	99 (12.9%)	2.31

Average mean score = 2.36

	Ability to **understand** health information easily.					
10	I can easily understand health related terminologies	75 (9.8%)	211 (27.5%)	369 (48.0%)	113 (14.7%)	2.32
11	Statement and sentence of health information are easy for me to understand	64 (8.3%)	172 (22.4%)	440 (57.3%)	92 (12.0%)	2.27

Average mean score = 2.30

	Ability to **apply** health information in decision making.					
12	I can apply the understood health information for taking decisions about my health.	101 (13.2%)	172 (22.4%)	386 (50.3%)	109 (14.2%)	2.35
13	I can apply health related information to my own life	79 (10.3%)	162 (21.1%)	376 (49.0%)	151 (19.7%)	2.22

Average mean score = 2.29

Researcher's Field Survey, 2018 **Overall Average Mean Score = 2.36**
Key: VHL = Very high level, HL = High level, LL = Low level, VLL = Very Low level.

Decision Rule: Very high level = 3.50 – 4.0, High level = 2.50 – 3.49, Low level = 1.50 – 2.49, Very Low level = 1.00 - 1.49.

Researcher's Field Survey, 2018 **Overall Average Mean Score = 2.36**

Key: VHL = Very high level, HL = High level, LL = Low level, VLL = Very Low level.

Decision Rule: Very high level = 3.50 – 4.0, High level = 2.50 – 3.49, Low level = 1.50 – 2.49, Very Low level = 1.00 - 1.49.

Table 3: Challenges of mobile phone use and health information literacy among pregnant women in Ekiti State.

S/N	ITEM Challenges of mobile phones use and health information literacy.	Yes	No
1	Not sure of sources to trust	300 (39.1%)	468 (60.9%)
2	Limited information source	267 (34.8%)	501 (65.2%)
3	Lack of understanding about one medical condition	326 (42.4%)	442 (57.6%)
4	Lack ability to access reliability of health information	303 (39.5%)	465 (60.5%)
5	Lack- ability to evaluate the quality of health information	331 (43.1%)	437 (56.9%)