

Rural Women Perceptions of Digital Media Influence on Awareness Creation about Maternal Health Information in Minna, Nigeria

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ABSTRACT : This study has investigated the perception of digital media influence in awareness creation on maternal health amongst rural women in Minna, Nigeria. Survey questionnaire was administered to a sample of 384 respondents randomly drawn from a population of 96,886. The response was 99.2%. Findings reveal that 109(28.61%) of the respondents rural women in Minna metropolis were very much exposed to maternal health information on digital media with (Mean=4.14), while WhatsApp group 111(29.13%) (Mean=4.09), whereas 107(28.08%) with (Mean= 3.88) were exposed to Internet discussion forum. However, discussion forum and social networks appear to be the major sources of maternal health information among rural women in Minna metropolis. Lack of local content on maternal health issues and inadequate relevant maternal health information were revealed as the challenges to maternal health. The study recommends that digital media should be effectively and efficiently used for maternal health improvement in Nigeria health centres.

Keywords: Maternal health, public health, digital media, innovation, healthcare, awareness creation, communication, perception, strategy, information.

1. INTRODUCTION

1.1 Background of the study

Maternal health can be viewed as a comprehensive trajectory for health of women starting from pre-pregnancy to postpartum and maternal phase of the mother. It covers services for pre-pregnancy, pregnancy, birth and postpartum. Maternal health care services are provided during these phases to ensure well-being of the mother and child (Babalola & Fatusi, 2009). Effective maternal healthcare services are crucial for the survival of the mother and the new-born child (Gabrysch & Campbell, 2009).

The development of digital media and advancement in communication technology hold significant prospects for addressing the challenges of maternal health and developmental issues facing especially the developing world (O'Higgins, Murphy & Turner, 2015). This optimism is based on the increasing levels of the Internet penetration as well as interactivity, genuine dialogue, speed, multimodality, user-generated content, mass customization, horizontal communication, and multi-directionality that characteristics the digital media. Information and communications technologies (ICTs) have been the corner stone in transforming health communication practices (Johnson, 2014).

In the era of an increasingly digitalized world, the issue of maternal health is now an embodied project which encompasses digital health, accessing the digital platforms as a source for maternal health information is now

changing the way pregnant women and nursing mother source for maternal health information (Johnson, 2014). Women are integral part of their community, and not an Island. Every decision a woman makes is influenced by those around her – her husband, relatives, friends, and the community. While women may receive accurate health information from facility- and community-based health providers, their health-seeking decisions are influenced also by stories and information that circulate in the media (Sinai, Anyanti, Khan, Daroda & Oguntunde, 2017).

Maternal health promotion initiatives can facilitate health behavioral change by promoting support for individuals and groups from salient agents within their environment (Putland, Baum, Ziersch, Arthurson, & Pomagalska, 2013), these agents could be family or relatives, peers and friends. With an evolving interactions and advancing digital technology, interactive online platforms such as digital media may prove to be an effective medium for maternal health promotion. This study therefore examines the perception of digital media influence in awareness creation on maternal health, particularly, among rural women in Minna metropolis, Niger State.

1.2 Statement of the Problem

Maternal health promotion has been a major focus of government, non-governmental organizations-local and international, with various policies developed to promote this, but demographics on maternal mortality keep on rising, despite different intervention and policies women are still vulnerable to maternal death due to childbearing, unintended pregnancies, unsafe abortions and infections (USAID, 2013).

Online digital media platforms like Twitter and Facebook represent a promising opportunity for maternal health promotion among women. However, there is limited literature on the effectiveness of digital media influence in awareness creation on maternal health, particularly, among women in the semi-rural area (Lupton, 2017). Against this background, this study delves to investigate on maternal health issues with a view that if there is adequate promotion of maternal health through the digital media, the attention of women could be drawn to improve their health conditions especially during pregnancy. Therefore, this study aims to examine the influence of digital media in awareness creation on maternal health among women in Minna metropolis, Niger State.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the influence of digital media in awareness creation on maternal health in Minna metropolis, Niger State. Specific objectives are:

1. To determine the level of exposure of rural women in Minna metropolis to maternal health information on digital media
2. To determine which digital media are popular sources for maternal health information among rural women in Minna metropolis.
3. To determine the type of digital services are sought after for maternal health information by rural women in Minna metropolis.
4. To determine the existing digital media channels of communication between healthcare givers and rural women of reproductive age in Minna metropolis.
5. To determine the challenges face by rural women in accessing adequate information on maternal health issues.

2. LITERATURE REVIEW

2.1 Maternal Health

World Health Organization (WHO, 2011) defined maternal health as the physical wellbeing of a mother during pregnancy, childbirth and postpartum. Maternal health encompasses prenatal care and postnatal care of the mother and of the child up to the age of five years (Fadeyi, 2007). The WHO has observed that there is an urgent need for programmes that address the health and safety of pregnant adolescents and the need to teach young women the skills to build a successful future. Achieving good status of maternal health is

multidimensional; therefore, there is need for concerted effort from all concerns to ensure the reduction of the alarming rate of maternal health complications in Africa. According to (WHO, 2010), 99% of the estimated figure for maternal deaths worldwide happened in developing countries, with an estimated 265,000 maternal deaths occurring in sub-Saharan Africa, and 840/100,000 live births in Nigeria. Where food safety, sleep and family planning are among the factors that were mentioned to undermine maternal health (World Bank, 2011).

2.2 Maternal Health in Nigeria

Nigeria population has been estimated to be about 190.89 million people with the majority living in the rural areas. The country depends on crude oil for its economy and had a Gross National Income of US\$753 and life expectancy at birth of 54.5 years (WHO, 2011). Nigeria has maternal mortality rate of 1,140 per 100,000 live births. The high maternal mortality rates is attributed to several factors, such as, long distances to health facilities in rural areas which results in delays, lack of adequate skilled staff, drugs and equipment and the effects of HIV/AIDS (Cooke & Tahir, 2013).

Federal Government of Nigeria through the State Ministries of Health is the main provider of health services in the country. The health services are delivered through clinics, health centres, district hospitals, federal medical centres and general hospitals across the states and local governments. Referral system is highly practiced when there are severe cases which cannot be treated at the lower level hospital. There are also private hospitals that are licensed by government to provide healthcare services in Nigeria. In some rare cases, traditional birth attendants (TBA) also provide maternal care services (Germaine, 2015).

WHO (2011) statistics revealed that Nigeria as a country has not done enough in terms of providing adequate maternal healthcare and quality healthcare for Nigerians. The body maintained that Nigeria's annual average rate of decline (AARD) percentage for maternal mortality ratio for the period 1990-2010 stands at 630, is a higher proportion than in Afghanistan or Haiti, and only slightly lower than that of Liberia or Sudan (Cooke & Tahir, 2013). Cooke and Tahir (2013) further observed that, even in Nigeria, the level of maternal health varies among the regions. They posited that, the Northern Nigeria has the highest cases of maternal health than the Southern part of the country.

2.3 Media and Maternal Health

In the opinions of Ifeoluwa and Olusegun (2015), media shapes the public's opinions about issues that are of importance, problems to be emphasized and it (media) dictate ways of thinking. Health communication is the use of communication approaches in order to inform, influence and motivates individuals, institutions and communities in making effective decisions to improve health (Keshvari, Yamani, Adibi & Shahnazi, 2018). News about population and health has the potential to affect millions of people because they influence policy makers, sensitize the public and thus help people live longer and healthier. Most people depend on the media for information rather than information provided by the government or other sources (Odhiambo, 2000).

WHO (2011) defined good health as the state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. In the past, media is consider to be very vital has proved critical in the dissemination of critical information on family planning, malaria, tuberculosis and HIV/Aids. Media in many occasions have been used to promote family planning and it has play a major role in disseminating essential decisions, which have been identified as important in development planning (Odesanya, Hassan, & Olaluwoye, 2015). Researches has shown that information convey via mass media channels affects individual behaviours directly or indirectly depending on the approach (Niederdeppe, Bigman, Gonzales & Gollust, 2013).

Since the media convey messages from sources to receivers, they have a responsibility to highlight what constitutes a threat to individuals' well-being in a society including issues on health. The health of a mother is important for country and family or society as only healthy mothers beget healthy children. The media, especially the new media have a responsibility to inform the populace on issues related to maternal health. Researchers agreed unanimously that mass media have the potential to sensitize the public on health-related

issues that endanger life or promote desired goals. Thus, health disparities in mass media could be due to the way the findings or the way editor package and cover the healthcare stories (Nierderdeppe et al., 2013).

2.4 Health Journalism

Mass media is one of the famous and fee-effective public fitness advertising equipment globally and is one of the foremost sources of facts on malaria, HIV/Aids, women's fitness, and family planning among others. Some countries have used mass media effectively at intervention centres for maternal health and HIV prevention (Keshvari, Yamani, Adibi & Shahnazi, 2018).

Health Journalism refers to the dissemination of fitness related information to the public through media shops. Through, the dissemination of health news, medical research output and health policies, mass media play a leading role in health awareness and promotion (McCauley, Blake, Meissner & Viswanath, 2013), affecting the knowledge and health beliefs of the public and eventually promoting public health (McCombs, 2013). The influence of media on public belief is so huge that sometimes people adopt a new treatment due to the latest health news they learn about through the media. Moreover, media highly affects decision of doctors, policymakers and health professionals (Abroms & Maibach, 2013).

As health journalists need to be able to handle the progressively increasing amount of health system data, quite a few studies have investigated the factors affecting scientific journalism, including communicating science, the gap between scientists and journalists and tacit understanding of health literacy (Safari, Baratloo & Yousefifard, 2015).

New media has extended the availability of news for lots of consumers and the Internet has made records widely and instantly reachable to reporters and to the general public. However, declining in traditional media viewership has brought about commercial enterprise selections that cut the resources for insurance of fitness information (Keshvari, Yamani, Adibi & Shahnazi, 2018).

2.5 Social media and health promotion

Social media platforms are gradually becoming an indispensable tool for health literacy and an overall improvement of health outcomes (Salmon & Arkins, 2003). The role of digital technology for social marketing connotes that improvement in information technology offers an opportunities for health promotion in engaging health professionals with their patients, and the mobilization of new clients (Lefebvre, 2007).

In line with 21st century impact of computer and Internet technologies (Neuhauser & Kreeps, 2010) affirms that using social media for health communication will eliminate some of the inherent limitations of the conventional health communication through improved customization, continuity, interactivity and mixed media utilization. Thus, it can be argue that digitally enabled social media interventions such as mobile phones, instant messaging, chat room forums and social networking sites are also particularly relevant for communication of sexual and reproductive health issues (Fayoyin, 2016).

Available literatures have identified social media as a source of social support (Banjanin, Dimitrijevic & Pantic, 2015). A research by Vitak and Ellison (2013) revealed that individuals that reported experiencing social connectedness through Facebook had lower anxiety and depression, and greater subjective wellbeing. Facebook was found to assist individuals to gain support, which was significantly associated with offline social support and similarly associated with wellbeing (Liu & Yu, 2013). Online social networks may be able to influence social norms, an important element of health promotion interventions (Cobb & Graham, 2012).

Similarly, health technologies undoubtedly have enhanced the efficacy of prevention, diagnosis, and treatment, but with some negative impacts, such as high costs of some health technologies and potential ethical concerns, therefore, necessitating an appropriate health technology assessment (HTA) to unravel the safety, efficacy, cost effectiveness, and ethical and social implications of various health technologies. The RAND Corporation has recently recommended estimating the social value of health technologies by

determining the difference between expected improvements in population health and the social costs attributable to the health technologies themselves (Garber, Gates, Blume-Kohout, Burgdorf & Wu, 2011).

3. THEORETICAL FRAMEWORK

This study is anchored on the Uses and Gratification Theory. The theory originated from earlier media researchers such as Lazarsfeld (1941) who studied the uses and gratifications theory in radio listening in USA, and Katz, Blumler and Gurevitch (1974), who enunciated the basic points of the framework. The theory focuses on media-audience research and on need approach to underscore how individuals use the media to meet their needs and fulfilled their value-interest. Papacharissi (2009) posits that, individuals select media and content to fulfill felt needs or wants, noting that the needs are expressed as motives for adopting a medium use. Gora (2017) observes that the uses of media are dependent on the perception, selectivity and previously held beliefs, values and interest of the people.

In addition, Katz, Blumler, & Gurevitch (1974) and subsequently advances in media audience research and as need-fulfillment approach to engage media content consumption noting that people have certain needs that they wish to gratify from media usage behaviour. According to (Katz et al., 1974), the media use has the following goals; 1. The audience is active and its media use is goal oriented. 2. People have various uses (needs) they seek to satisfy through media. 3. Audience members take initiative to link need gratification to a specific media. 4. The media compete with other sources for need satisfaction. 5. People have enough self-awareness of their own media use, interests and motives to be able to provide researchers with accurate picture of that use, and 6. Value judgment of media content can only be assumed by the audience.

Uses and gratifications theory is an approach to understanding why and how people actively seek out specific media to satisfy specific needs. The Uses and Gratifications research hypothesis concentrates on components impacting intentions in use and results for individuals' media-related conduct (Ozo-Mekuri and Kasarachi, 2006).

In simple term, Uses and gratification theory posits that media exposure leads to certain behaviors, sometimes without a user's conscious control. Uses and gratifications theory proposes that users or media consumers are actively choosing specific media content according to their needs Therefore, Uses and gratifications theory is applicable to this study, the way women in Minna metropolis perceive digital media maternal health information determines the degree of influence that such media information would have on them.

4. RESEARCH DESIGN

4.1 Population of the Study

This study is mainly targeted at women population of reproductive age that visits healthcare facilities at both primary and secondary healthcare centres across different wards in the two local government area that make the metropolitan area of Minna, for either ante natal, neonatal or post-natal. To ensure that the actual target population was captured, the respondents were targeted and approached while attending antenatal, neonatal or post-natal at the various health centres in the different wards in the metropolis.

Out of the total population of 202,151, in both Chanchaga and Bosso, females' population were estimated to be 169,989 as at year 2012 (Niger State Bureau of Statistics, 2012). Based on a simple random sampling technique, a sample size of 384 women of reproductive age were drawn from each ward in the two local government areas of Minna Metropolis. The instrument used for the study was survey questionnaire, which has two sections: Section A comprises the demographic characteristics of the respondents, while Section B comprises of 31 items based on 7-point Likert scale ranging from Very Strongly Disagree (VSD) to Very Strongly Agree (VSA). The instrument was administered to the respondents and the response rate was 99.2%.

The validity of the instrument was established by sharing the instrument with experts in the field to append their comments, views, opinions and suggestions which were incorporated into the instrument before being administered to the respondents. While split-half reliability method was used to determine the reliability of the research instrument and the correlation coefficient was 0.96, which indicates that the instrument was reliable.

The data were analyzed for frequency and percentile using the Statistical Package for Social Sciences (SPSS). Data were analysed, tabulated and reported accordingly.

5. FINDINGS

Demographics of the Respondents

Findings reveal that the majority 238(62.47%) of the respondents were married, 45(11.81%) were single, while 98(25.72%) were divorced. As for age range, the majority 156(40.94%) of the respondents were within the age range of 25-31 years, while 96(25.19%) were within 32-38 age range, whereas, 78(20.47%) and 51 (13.38%) are within 18-24 years old and 39 and above respectively. Based on the academic qualification of the respondents, the majority 142(37.27%) of the respondents had secondary education, while 87(22.83%) were university graduates, 49(12.86%) had only primary education, 21(5.51%) had never attend any formal education, while 82(21.52%) had various types of degrees. The distribution shows that majority of the respondents had at least one formal education or the other.

As for the occupation of the respondents, the findings show that the majority 171(44.88%) of the respondents were civil servants, 41(10.76%) were farmers, 89(23.35%) were not formally employed, 31(8.14%) were into business or trading, while 49(12.86%) of the respondents, indicated they were unemployed. Also, findings on the respondents' financial income show that, the majority 159(41.73%) of the respondents' incomes fall within the range of (N15,000 – N20,000) Naira per Month, 91(28.88%) were within the range of (N20,000 – N30,000) Naira per Month, 78(20.47%) of the respondents' income were within the range of (N30,000 – N40,000) Naira. While, 28(7.34%) and 25(6.56%) were within the range of (N40,000 – 50,000) Naira and 50,000 Naira and above respectively. Findings shows that the majority 230(60.37%) of the respondents owned a smart phone, whereas 151(39.63%) have no smart phones at all.

Table 1: Exposure of women in Minna metropolis to health information on digital media

Q1	Items	VSD	SD	D	N	A	SA	VSA	M	SD
1	I got to know about maternal health through internet discussion forum	31	21	19	10	109	107	84	4.14	0.184
2	I got to know about maternal health through internet sites	53	24	21	11	101	82	89	3.88	0.124
3	I got to know about maternal health through Whatsapp group	55	19	21	08	111	94	73	4.09	0.226
4	I heard information about maternal health on social media	57	42	37	13	81	104	47	3.45	0.338
5	I got to know about maternal health through internet ebook	101	91	19	9	44	66	51	3.11	0.115

Note: M = Mean, SD = Standard Deviation

Table 1 (above) displays the respondents' exposure to health information on digital media. According to the Table, the majority 109(28.61%) of the respondents agreed to have been exposed to maternal health through the Internet discussion forum with value (Mean = 4.14), while an insignificant number 31(8.14%) of them were very strongly disagreed to have been exposed to maternal health through the Internet discussion forum, whereas 10(2.62%) of them were neutral. Another majority 107(28.08%) of the respondents agreed to know about maternal health through the Internet sites (Mean = 3.88), this was followed by 111(29.13%) through Whatsapp group (Mean = 4.09), while 81(21.26%) through social media with (Mean = 3.45), whereas 101(26.51%) of the respondents were very strong disagreed that they know about maternal health through the Internet ebook (Mean = 3.11). This finding is in congruent with Rodger's report that pregnant women are seeking health information online (Rodger, 2013, p. 3).

Table 2 (below) shows that the respondents' responses to digital media sources for maternal health information. According to the Table, the majority 121(31.76%) of the respondents agreed that they have used the Internet as a source for maternal health information with (Mean = 3.97), while an insignificant number 21(19.84%) of the respondents disagreed, whereas 22(5.77%) of them maintained neutrality. In addition, 141(37.01%) agreed that they have used social networks for maternal health information with (Mean = 3.68), while 103(27.03%) have used discussion forum (Mean = 3.89). Whereas 110(28.87%) of them were very strongly disagreed that they have used Blogs for maternal health information (Mean = 3.11).

Table 2: Respondents responses to digital media sources for maternal health information

		VSD	SD	D	N	A	SA	VSA		
Q2	Digital media sources for maternal health information	1	2	3	4	5	6	7	M	SD
1	I used Internet for maternal health information	17	19	21	22	121	114	69	3.97	0.172
2	I used social networks for maternal health information	13	23	19	17	89	141	81	3.68	0.221
3	I used Blogs for maternal health information	110	97	81	19	27	28	21	3.11	0.235
4	I used video media for maternal health information	98	107	84	15	24	26	29	3.06	0.133
5	I used discussion forum for maternal health information	91	34	75	18	103	29	113	3.89	0.126

Note: M = Mean, SD = Standard Deviation

Table 2 (above) shows that the use of video media for maternal health information with (Mean = 3.06), 107(28.08%) of the respondents were strongly disagreed that they have used video media for maternal health information, while 113(29.66%) of the respondents were strongly agreed to have used discussion forum for maternal health information (Mean = 3.89). This finding is in congruent with O'Higgins, Mullaney and Turner's reports that discussion forum scored 70%, social networks 67% and video media 48%, as a type of sites use for pregnancy related information (O'Higgins, Mullaney and Turner, 2014, p.9).

Table 3: Distribution of respondents according to digital media wants by women in Minna metropolis

		VSD	SD	D	N	A	SA	VSA		
Q3	Digital media wants by women in Minna metropolis	1	2	3	4	5	6	7	M	SD
1	I want text message reminder of an appointment	21	25	22	19	93	118	85	4.09	0.186
2	I want pregnancy application	23	29	23	14	96	104	92	3.88	0.335
3	I want discussion forum	51	25	21	17	106	76	87	4.02	0.186
4	I want weight management application	77	117	83	23	19	22	40	3.01	0.225
5	I want pregnancy blog	45	38	24	11	113	88	64	4.12	0.195
6	I want website with access to ultrasound images	91	94	112	18	26	23	19	3.01	0.125
7	I want hospital with Twitter page	87	101	76	17	25	21	56	3.14	0.126
8	I want online videos with advice on physiotherapy	77	22	83	23	19	115	42	4.12	0.214
9	I want website for feedback and suggestion on hospital services	43	40	24	9	113	88	64	4.09	0.338

Note: M = Mean, SD = Standard Deviation

Table 3 (above) highlights the digital media preference by rural women in Minna metropolis. According to the Table, the majority 118(31.6%) of the respondents were strongly agreed that they preferred text message reminder of an appointment with (Mean = 4.09), while 104(18.9%) preferred pregnancy application, 117(31.4%) disagreed that they preferred weight management application with (Mean = 3.01). Whereas, 113(30.3%) preferred pregnancy blog with (Mean = 4.12), 112(30.1%) disagreed that they preferred website with access to ultrasound images with (Mean = 3.14), while another 101(17.1%) disagreed that they preferred a hospital with Twitter page with (Mean = 3.14). Finally, 115(30.9%) preferred online videos with advice on physiotherapy and 113(30.3%) of the respondents preferred website for feedback and suggestion on hospital services with (Mean = 4.12) respectively.

The above finding is in congruent with O'Higgins, Mullaney and Turner's report about women using the maternity services in Ireland that reported high usage of digital media to obtain pregnancy information. Women used digital media more than traditional media sources and that the use of digital media was widespread amongst socially disadvantaged women (O'Higgins, Mullaney and Turner, 2014, p.5).

Table 4: Responses on the existing digital media channels of communication between healthcare givers and women of reproductive

		VSD	SD	D	N	A	SA	VSA		
		1	2	3	4	5	6	7	M	SD
1	I communicate with my Doctor/Nurse through phone	21	25	22	19	93	118	83	4.02	0.176
2	I communicate with my Doctor/Nurse through whatsapp messages	19	29	32	21	89	108	83	4.12	0.214
3	I communicate with my Doctor/Nurse vie email	97	124	93	16	22	16	13	2.99	0.135
4	I communicate with my Doctor/Nurse through group discussion	110	97	89	11	25	28	21	3.00	0.228
5	I communicate with my Doctor/Nurse through Facebook	120	101	103	9	15	18	15	3.11	0.185
6	I communicate with my Doctor/Nurse through social media	111	97	93	13	30	27	10	3.16	0.116

Note: M = Mean, SD = Standard Deviation

Table 4 (above) displays the respondents' responses on existing digital media channels of communication between healthcare givers and rural women of reproductive. According to the Table, the majority 124(33.2%) of the respondents were strongly disagreed that they communicate with their Doctor/Nurse via the email with (Mean =2.99), while 118(31.6%) claimed that they communicate with their Doctor/Nurse through phone with (Mean=4.02), whereas 108(29%) of them agreed that they communicate with their Doctor/Nurse through WhatsApp messages with (Mean =4.12). However, 110(29.5%) of the respondents were very strongly disagreed that they communicate with their Doctor/Nurse through group discussion with (Mean=3.00), while 120(32.2%) were very strongly disagreed that they communicate with their Doctor/Nurse through Facebook with (Mean=3.11). Finally, 111(30.5%) of the respondents were very strongly disagreed that they communicate with their Doctor/Nurse through social media with (Mean=3.16).

Communication through phone and WhatsApp messages appears to be the predominant means of communication between rural women and health workers (Mean = 4.02). Furthermore, a negligible few of the respondents agreed to communicate with health experts through group discussion or social media (Mean = 3.00). Findings from the Table also show that email communication between the rural women and health workers is not a popular choice, as only 58(3.93%) of the respondents agreed that they communicate with health experts via email. Communication with Doctor/Nurse through group discussion recorded a Mean of 2.99. But those who communicate with their Doctor/Nurse through WhatsApp messages scored the highest

Mean value (Mean = 4.12). This finding confirms the report of Wei, Pong, Shi, Ming, Tang, Mao, Liu and Chen (2017) which suggest that contacts, collaboration and relationships are major factors leading to successful knowledge translation (KT) (p.55).

Table 5: Distribution of respondents according to challenges of using digital media

Q5		VSD	SD	D	N	A	SA	VSA	M	SD
	Challenge of using digital media	1	2	3	4	5	6	7		
1	I believe lack of local content on maternal health issue	18	33	17	12	115	91	95	4.09	0.338
2	I believe inadequate relevant maternal health information	34	53	14	18	108	74	80	4.12	0.214
3	I believe inadequate knowledge of internet surfing skills	95	101	52	20	38	17	58	3.08	0.211
4	I believe very slow network and unstable Internet connectivity	113	56	27	18	53	87	27	3.19	0.120
5	I believe high cost of data to access Internet	21	63	34	17	93	66	87	3.45	0.338
6	I believe epileptic power supply	107	68	36	13	55	81	21	3.01	0.115
7	I believe software and battery issues	32	43	24	21	95	94	72	4.01	0.244

Note: M = Mean, SD = Standard Deviation

In terms of the challenges of using digital media, Table 5 (above), reveals that the majority 115(30.9%) of the respondents agreed that lack of local content on maternal health issues in Nigeria is a challenge (Mean = 4.09), while 108(29%) also agreed that there was an inadequacy of relevant maternal health information, whereas 101(27.1%) disagreed that an inadequate knowledge of Internet surfing skills was a challenge (Mean = 3.08). However, 113(30.1%) of the respondents disagreed very slow network and unstable Internet connectivity were challenges of using digital media (Mean =3.19), while 87(23.2%) of them were very strongly agreed that high cost of data to access Internet was a challenge to using the digital media (Mean = 3.45), whereas 107(28.7%) of them disagreed that epileptic power supply was a challenge (Mean=3.01). Finally, 95(24.3%) of the respondents agreed that software and battery issues were some of the challenges of using the digital media (Mean=4.01).

Lack of local content on maternal health issue and inadequacy of relevant maternal health information are the main possible challenges. This finding is congruent with Christakis and Fowler (2011), where it was stated that the use of digital media seems to be more for ‘information blast’ or ‘message storm’ around specific health issues.

Answering the research questions

RQ1. What is the level of exposure of rural women in Minna metropolis to health information on digital media?

Table 1 is taking into cognizance in answering this research question. According to the Table, the majority of the respondents agreed to have been exposed to maternal health through internet discussion forum, while substantial number of the respondents strongly agreed to know about maternal health through the Internet sites, whereas considerable amount of them agreed to know through WhatsApp group. Going by the distribution from Table 1, one can deduce that most of the women in Minna metropolis are exposed to maternal health information through digital media. That is, there is high level of exposure of rural women in Minna metropolis to health information on digital media.

RQ2. What digital media sources are available for maternal health information among rural women in Minna metropolis?

Table 2 showed that the majority of the respondents were strongly agreed to have used social networks for maternal health information, while considerable number of the respondents agreed to have used the Internet for maternal health information, while. Consequently, the study can sum up that the Internet and WhatsApp are the digital media sources for maternal health information among women in Minna metropolis.

RQ3. What are the digital services wanted by rural women in Minna metropolis?

As for the research question 3, Table 3 revealed that the majority of the respondents want text message reminder of an appointment, while substantial amount of them want online pregnancy application, while yet considerable number of them preferred discussion forum. Whereas, relevant amount of the respondents agreed that they want pregnancy blog for maternal health information. The data distribution shows that the respondents have high preference for online videos with advice on physiotherapy and website for feedback and suggestion on hospital services are the digital services wanted by women in Minna metropolis.

RQ4. What are the existing digital media channels of communication between healthcare givers and rural women of reproductive age Minna metropolis?

Table 4 showed that the majority of the respondents indicated that they communication their Doctor or Nurse through phone, communication with Doctor or Nurse through WhatsApp messages were substantial. Email communication between rural women in Minna metropolis and health workers is not common, as only negligible number of the respondents to agree very strongly that they communicate with health experts through email. This shows that communication through phone and WhatsApp messages are the predominant means of communication between rural women and health workers.

RQ5. What is the Challenge of using digital media?

In regards of research question 5, findings revealed that it can be deduced that lack of local content on maternal health issue, inadequate relevant maternal health information, high cost of data to access Internet and software and battery issues are major challenges facing utilization of digital media as a source of maternal health information. The lack of local content on maternal health issue and inadequate relevant maternal health information as a challenges is in line with Christakis and Fowler(2011), where it was stated that the use of digital media seems to be more for 'information blast' or 'message storm' around specific health issues.

Furthermore, software and battery issues challenges could be explain from the point that many of the respondents accessed the digital media sources on their mobile phone, with online contents that is not optimized for mobile phone. Thus, there is need to designed maternal health issues on digital platform specifically tailored toward mobile phones.

6. DISCUSSION OF FINDINGS

Based on the data analyses, it could be deduced that the majority of rural women in Minna metropolis, are very much exposed to maternal health information on digital media. Their exposure is largely from internet discussion forum, internet sites, Whatsap group and social media. This therefore, implies that rural women in Minna metropolis are expose and seeking maternal health information through different digital media platforms. This finding is similar to (Rodger, 2013), where they found out that pregnant women are seeking health information online.

Finding also shows that Internet, social networks and discussion forum appears to be the major sources of maternal health information among rural women in Minna metropolis. This result is in tandem with (O'Higgins, Mullaney & Turner, 2014), where Internet sites and Internet discussion forums scores 36% and 25% respectively as the highest among the digital media cited as useful for pregnancy information. As for the digital services wanted by rural women in Minna metropolis, text message as reminder of an appointment, pregnancy application, and discussion forum, online videos with advice on physiotherapy and pregnancy blog appears to be the most preferred digital media services want by the majority of the respondents. This findings also find

support from the research by (O'Higgins, Mullaney & Turner, 2014), where discussion forum score 70%, social networks 67% and video media 48%, as a type of sites use for pregnancy related information.

Furthermore, we found out that phone communication and WhatsApp messages are the most common existing digital media channels of communication between healthcare givers and rural women of reproductive age in Minna metropolis. This medium is usually informal, where the health workers are either friends, relatives or friend of a friend. Discussion forum, WhatsApp group or Facebook page communication between the health workers and women is not yet common among the respondents as revealed from the study. As for the challenges, lack of local content on maternal health issue and inadequate relevant maternal health information is revealed to be one of the challenges. Software and battery issues challenges is also rated high as a challenges, this could be explain from the point that many of the respondents accessed the digital media sources on their mobile phone, with online contents that is not optimized for mobile phone, therefore put pressure on the phone battery.

7. CONCLUSION

In conclusion, findings of the study show that even in the 21st century, people still prefers the mass media for their health information need. There is high usage of digital media to obtain maternal health information, with the majority using the Internet discussion forum, Internet sites, WhatsApp group and social media. Many of the respondents owned a smartphone and there was high utilization of digital media platforms for maternal health information. Also, findings reveal that discussion forums and social media platforms are the most preferred source of maternal health information. This could be explain from the sense of community with other women with similar life experiences created by these platforms. Finally, the use of social media in the provision of maternal health information for rural women needed to be improved on in Minna metropolis. This inadequate provision could be attributed to the under-developing nature of the region.

Recommendations

Based on the findings and conclusion drawn from the study, the following recommendations are made:

- 1) The content for digital media can be made available in local languages for better comprehension.
- 2) Healthcare professionals in maternity services should accept the challenge of digital media so that the rural women will be well informed.
- 3) The effectiveness of all digital media should be measured at regular intervals to ensure that rural women are not consuming the wrong information.
- 4) There should be a concerted effort geared towards how to effectively use the digital media to educate rural women on their maternal health need.

8. References

1. Abroms, L.C. & Maibach, EW. (2013). The effectiveness of mass communication to change public behavior. *Public Health* 29, 219-34.
2. Babalola, S. & Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria – looking beyond individual and household factors. *BMC Pregnancy and Childbirth*. 9 (34), 1-18.
3. Banjanin, N., Dimitrijevic, I. & Pantic, I. (2015). Relationship between internet use and depression: focus on physiological mood oscillations, social networking and online addictive behavior. *Comput Hum Behav*. 43, 308–12.
4. Cobb, N.K. & Graham, A. L. (2012). Health behavior interventions in the age of Facebook. *Am J Prev Med*. 43(5), 571–2.
5. Cooke, J., & Tahir, F. (2013). Maternal health in Nigeria: with leadership, progress is possible. A report of the CSIS Global Health Policy Centre. Rhode Island, Washington DC: Centre for Strategic and International Studies. Retrieved March 20, 2019 from: https://csis.org/files/publication/130111_Cooke_MaternalHealthNigeria_Web.pdf.
6. Christakis, N. & Fowler, J. (2011). *Connected: The Amazing Power of Social Networks and How They Shape our Lives*. Harper Press, London.

7. Fayoyin, A. (2016). Engaging Social Media for Health Communication in Africa: Approaches, Results and Lessons, *Journal of Mass Communication & Journalism*, 6(6), 1 -7.
8. Fadeyi, A. O. (2007). Determinants of Maternal Health Care in Lagos, Nigeria. *Ife Social Sciences Review*. 22(1): 38-48
9. Gabrysch, S., & Campbell, O. (2009). Still too far to walk: Literature review of the determinants of delivery service use. *BMC Pregnancy and Childbirth* 9(34), 1-18.
10. Garber, S., Gates, S.M., Blume-Kohout, M.E., Burgdorf, J.R. & Wu, H. (2011) Challenges to Value-enhancing Innovation in Health Care Delivery: Commonalities and Contrasts with Innovation in Drugs and Devices, Occasional Paper No. OP-341-EMKF, RAND, Santa Monica, CA.
11. Germaine, T. (2015). Mothers' Perceptions and Experiences of Accessing Maternal Health Care: Exploring the Role of Community Health Workers and Continuing Professional Development in Rwanda: Electronic Thesis and Dissertation Repository. Paper 2832.
12. Gora, S. (2017). Uses and gratification theory of mass communication. Retrieved from <https://www.linkedin.com/pulse/uses-gratification-theory-mass-communication-sanjay-gora>
13. Ifeoluwa, A. O. & Olusegun, O.W. (2015). Influence of Television Health Programmes on Maternal Health. *International Journal of Humanities and Social Science*, Vol. 5, No. 8(1). Retrieved from http://www.ijhssnet.com/journals/Vol_5_No_8_1_August_2015/23.pdf
14. Jane, M. Hagger, M. Foster, J., Ho, S. & Pal, S. (2018). Social media for health promotion and weight management: a critical debate, *BMC Public Health*, 18:932.
15. Johnson, S.A. (2014). "Maternal Devices", *Social Media and the Self-Management of Pregnancy, Mothering and Child Health, Societies* 4(1), 330–350. Retrieved from doi:10.3390/soc4020330.
16. Katz, E., Blumler, J. G. & Gurevitch, M. (1974). "Uses and Gratifications Research," *The Public Opinion Quarterly*. JSTOR.Web (1973–1974), 4(37), 509-23.
17. Keshvari, M., Yamani, N., Adibi, P., & Shahnazi, H. (2018). Health journalism: Health reporting status and challenges. *Iranian J Nursing Midwifery Res.*, 23:14-7.
18. Lupton, D. (2017). Digital media and body weight, shape, and size: An introduction and review. *An Interdisciplinary Journal of Body Weight and Society*, 6(2), 119-134.
19. Lefebvre, R. C. (2007). The New Technology: The Consumer as Participants Rather than Target Audience. *SMQ* 13: 31-42.
20. Liu, C.Y. & Yu, C.P. (2013). Can Facebook use induce well-being? *Cyberpsychology, behavior and social networking*, 16(9), 674–8.
21. Lazarsfeld, P. (1941). Remarks on administrative and critical Communications research. *Studies in Philosophy and Social Science*, 9, 2-16.
22. McCauley, M.P., Blake, K.D., Meissner, H., & Viswanath, K. (2013). The social group influences of US health journalists and their impact on the news making process. *Health Education Resource*, 28:339-51.
23. Mensah, F.A (2008). The Spiritual Basis of Health and Illness in Africa. In T. Falola, and McCombs, M. (2013). *Setting the agenda: The mass media and public opinion*. John Wiley & Sons.
24. Neuhauser, L. & Kreeps, G.L. (2010). E-health Communication and Behaviour Change. *Promise and Performance*. *Social Semiotics*, 20: 7-24.
25. Niederdeppe, J., Bigman, C., Gonzales, A., & Gollust, S. (2013). Communication about health disparities in the mass media. *Journal of Communication*, 63, 8-30.
26. Odesanya, A., Hassan, S. & Olaluwoye, D. (2015). Mass Media and Maternal Healthcare: A Critical Discourse. *New Media and Mass Communication*, 34, 20- 26.
27. Odhiambo, F.O. (2000). The information behaviour of Kenyan medical scientists, PhD thesis submitted to South borough University. Retrieved from <https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/7274/4/Thesis-2000-Odhiambo.pdf>.
28. O'Higgins, A., Mullaney, L. & Turner, M.J. (2014). The Use of Digital Media by Women Using the Maternity Services in a Developed Country. *Irish medical journal*. Retrieved from https://pdfs.semanticscholar.org/623a/fad2059244ebc06df703ea2fba53f69f228.pdf?_ga=2.68965841.1592667494.1575811208-906105931.1570112720.
29. Ozo-Mekuri, N. & Kasarachi, I. (2006). *Fundamentals of Mass Communication*. Port Harcourt: M and J. Grand Orbit Communications Ltd.

30. Papacharissi, Z. (2009). "Uses and gratifications" in An Integrated Approach to Communication Theory and Research, ed. Don Stacks and Michael Salwen. New York: Routledge.
31. Putland, C., Baum, F, Ziersch, A, Arthurson, K, Pomagalska, D. (2013). Enabling pathways to health equity: developing a framework for implementing social capital in practice. BMC Public Health. 13(1):517.
32. Rodger, D. (2013). Promoting Maternal Health-Media Uses and Preferences. Applied Communication Collaborative Research Unit. Retrieved from http://www.adelaide.edu.au/accru/projects/healthebaby/Health-e_Baby_Report_2.pdf.
33. Safari, S., Baratloo, A.M. & Yousefifard, M., (2015). Medical journalism and emergency medicine. Emerg; 3:83.
34. Salmon, C.T. & Arkins, C. (2003). Using Media Campaigns for Health Promotion. In Saving Newborn Lives in Nigeria - SNLN (n.d): Newborn Health in the Context of the Integrated Maternal, Newborn and Child Health Strategy. Abuja: Federal Ministry of Health/Save the Children/. Accessed 29th March, 2019.
35. Sinai, I., Anyanti, J., Khan, M., Daroda, R. & Oguntunde, O. (2017). Demand for Women's Health Services in Northern Nigeria: A Review of the Literature, African Journal of Reproductive Health 2017; 21(2): 96-108.
36. USAID (2013). Maternal and Child Health Integrated Program (MCHIP). Retrieved from <http://nigeria.usaid.gov/programs/health-population-and-nutrition/projects/maternal-and-child-healthintergrated-program-mchi>
37. WHO (2010). Trends in maternal mortality: 1990 to 2008. Retrieved: http://whqlibdoc.who.int/publications/2010/9789241500265_eng.pdf
38. WHO (2011). Maternal Health Source. Retrieved f.rom www.who.int/topics/maternal_health/en/.
39. World Bank (2011) World Development Indicators. USA: Washington, D.C.
40. Wei, Y. & Pong, R.W. & Shi, L. & Ming, J. & Tang, M. & Mao, Y. & Liu, W. & Chen, Y. (2017). Perceptions of health technology assessment knowledge translation in China: a qualitative study on HTA researchers and policy-makers. Int. J. Healthcare Technology and Management,16(1/2),44-58.Retrieved from DOI: 10.1504/IJHTM.2017.087599

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