Health Personnel's Perception On The Use Of Social Media In Healthcare Delivery System In Rural and Urban Communities of Oyo State, Nigeria

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Abstract

The study examined health personnel's perception on the use of social media in healthcare delivery system in rural and urban communities of Oyo state, Nigeria. Randomly, 2 Local Government Area (LGA) each were selected from rural and urban LGA that represents 12% of LGA in the state, these are Ibarapa East, Iseyin, Ibadan North and Ogbomosho North. Purposively, medical centres were sampled based on the concentration of health practitioners in selected health centres. A total of three medical centres each from Ibarapa East and Iseyin, while three medical centres were selected from Ibadan North and Ogbomoso North. In all, 112 health personnel were used from the 124 personnel sampled. A good number of the respondents were below 50 years, data obtained indicated that there were more female medical personnel (66.1%) than male (33.9%). All the respondents had more than one year of working experience with 33.9% of them having less than five years work experience. Majority (58.9%) are aware of social media and had the mean score of 16.70 ± 3.19. Respondents have a high knowledge of social media (13.3 ± 2.67), favourably disposed to the use of social media in healthcare delivery (84.34 ± 13.20). There exist a significant relationship between respondents' knowledge ($r = 0.267$; $p < 0.05$) and the perception of health personnel on the use of social media for health care delivery, while there is no significant difference (($F = 0.956$; $p > 0.05$) in respondents' perception of health personnel on the use of social media for health care delivery across the medical personnel interviewed. Social media encourages youth participation and consequently can promote energies of rural youths for innovative effort to use social media to bring healthcare to rural communities.

Keywords: Social Media, Health personnel, Perception, Rural and Urban Communities

1. **Introduction**

Information and communication technology (ICT) is arguably the most rapidly growing segment of the world ecosystem (Akadiri, Olusanya and Omotola, 2009). ICT includes any communication device or application, ranging from: radio, television, cellular phones, computer and network hardware and software, satellite systems to the various services and applications associated with them. Over the years, ICT has impacted greatly on various professions making practitioners becoming more productive and proficient. ICT has provided a platform for effectiveness and efficiency in any given profession. The effect of ICT, internet and lately, social media internet sites on daily living and sources of livelihood has increased all over the world. It scopes the use of video links, e-mail, telephone, and telecommunications system to convey medical information across a long distance. Telemedicine has been used in many developed countries in consultations between a doctor and patient or in supervision of medical staff.

Leading internet-based medical practitioners in the US have proposed that social media sites like Facebook should be used to attend to patients. While considering the role of online healthcare sites; Mark Britton (2012), founder and CEO of *Avvo.com* which is a free social media platform on the internet, observes that social media is a platform where doctors can treat patients better with less money. Britton further adds that: The role of online health sites is very different from that of a doctor-patient relationship. It is meant to educate, inform and orient consumers, so that they are better prepared to see their doctor. Numerous studies have been done on the average length of a doctor visit (about 13 minutes) and how patients use that time (an average of about two questions and in many cases, none). There is a tremendous upside to consumers getting more information from licensed medical professionals online, before they visit their doctor (2012:1).

There has been a tremendous growth in social networking site use since 2008. According to a 2011 Pew Internet survey, nearly 50% of adults or 59% of internet users, use at least one social networking site. This is up from 26% of adults or 34% of internet users in 2008. There has been a pronounced increase in social networking site use among those over 35. Due to this increase, the average age of adult social networking site users has shifted from 33 in 2008 to 38 in 2010. Close to 92% of social network participants use Facebook (Hampton, Goulet, Rainie, & Purcell, 2011). The survey reveals that four out of five internet users search for health information

online, making health issues the most searched information. However, 50% of this set of internet users do not understand or cannot use the information without the help of a practitioner. Hence, there is the need for active interaction or networking between healthcare givers and the patients.

Despite the many advantages contained in the use of social media for health care delivery, the Nigeria situation does not seem to tally with that of many countries in the west. There are many Nigerian users of the internet, but sadly this study proposes that a lot of these people do not assess health issues on the internet, especially the rural populace. There are only a few internet sites devoted to healthcare delivery, (an example is WebMD) and since the majority of social media sites are used by young people, there hardly exists any visible Facebook or Twitter page account entirely committed to healthcare delivery.

In a recent publication of the Vanguard Newspaper, the South-South Coordinator of the National Health Insurance Scheme (NHIS) admits that Nigeria was ranked among the worst countries with weak national health system; the worst in health delivery system, coming 197 out of 200 countries considered. This was due to inequality in the distribution of healthcare resources between the urban and rural areas and also lack of functional referral system (NHIS statistics, 2010). In 2010, the World Bank carried out another survey that revealed that Nigeria has a total population of about 158 million people, and a population growth rate of 2.5%; an infant mortality rate of 88.4 per thousand live birth; a life expectancy of 51.4 years from birth for an average Nigerian, with about 20% of children dying before the age of 5; and HIV prevalence was 3.6% of the total population. Also, the maternal mortality rate per 100,000 births was 840, (World Bank Data and Statistics, 2010).

In view of the available statistics, Nigeria is a developing country with a poor health status which could be directly linked to its ineffective healthcare delivery system. The cost of healthcare delivery is very expensive and the health system/ sector is still primitive with low quality service, high mortality rate; all which calls for referral to overseas for treatment. Subsequently in Nigeria, social media has been the heat of everything but health. There is no doubt that there is enough health information online but the effectiveness of this information has to go beyond mere reading them. Social media has been used generally by all for different purposes such as networking and information dissemination. However, little research has been done in the area of using social media for health issues, especially in Nigeria.

2. Objectives of the Study

The General objective is health personnel's perception on the use of social media in healthcare delivery system rural and urban in communities of Oyo State Nigeria. The specific objectives are to;
1. determine the personal characteristics of the respondents.
2. examine the level of awareness on the use of social media for health delivery.
3. investigate the constraints involved in the use of social media.
4. describe the perceptions of health personnel to the use of social media for health delivery system.
5. examine the knowledge of respondents on social media to the use of social media for health delivery system.

3. Hypotheses

The hypotheses of this study are stated in the null form are;

Ho1: There is no significant relationship between respondents' selected personal characteristics and perception on the use of social media for health care delivery

Ho2: There is no significant relationship between the constraints involved in the use of social media and the perception of health personnel on the use of social media for health care delivery.

Ho3: There is no significant relationship between the knowledge of respondents on social media and the perception of health personnel on the use of social media for health care delivery.

Ho4: There is no significant different in the perception of medical personnel across the selected Health centres.

4. METHODOLOGY

4.1 Area of study

The area of study was Oyo state, Nigeria. Oyo state has a population of 5,591,589 people (NPC, 2006) and presently has 33 local government areas. It is located in the South-western part of Nigeria. Oyo State was created on the 3rd of February, 1976 out of the former Western State by Federal Military Government. It lies between latitude 7^0 and 9^03 of the equator and between longitude 2.5^0 and 5^0E of the prime meridian. It covers a total area of about 27,249 km^2; it is bounded in the north, south, east and west by Kwara State, Osun State, Ogun State and partly by the Republic of Benin respectively.

4.2 Population of Study: The target population constitutes all health personnel in government and private health centres in Oyo State. This includes doctors, nurses and laboratory scientists.

4.3 Method of data collection: Data were collected from primary and secondary sources. Primary data were obtained from medical personnel (Nurses, Doctors and Laboratory staff), who responded to a structured questionnaire administered to elicit information used for the study.

4.4 Sampling Procedure and Sampling Size: A multi-stage sampling technique was used;

i. A simple random sampling was used to select 12% of the Local Governments in Oyo state. This represents the 4 Local Government Areas; 2 Local Government Areas represents the rural and urban areas each. The selected four (4) Local Government areas were; Ibarapa East, Iseyin, Ibadan North and Ogbomosho North.

ii. A purposive random selection of medical centres to be sampled was done based on the concentration of health practitioners in selected health centres.

- In the Rural Local Government Areas, 10% of the medical centres were sampled; this made a total of three (3) medical centres each from Ibarapa East and Iseyin Local Government Areas.
- For the urban Local Government Areas, three medical centres were chosen.
- The respondents were chosen as follows;

LGA: Ibarapa east							
Medical Centre	**No of doctors on record**	**Selected % of doctors**	**Selected number of doctors**	**Number of nurses on record**	**Selected % of nurses**	**Selected number of nurses**	
General hospital, Eruwa	1	100%	1	13	50%	7	
General hospital, Lanlate	1	100%	1	7	50%	4	
Awojobi clinic	1	100%	1	3	30%	1	
LGA: iseyin							
Medical centre	**No of doctors on record**	**Selected % of doctors**	**Selected number of doctors**	**Number of nurses on record**	**Selected % of nurses**	**Selected number of nurses**	
General hospital, Ado-awaye	1	100%	1	8	50%	4	
General hospital, Iseyin	1	100%	1	27	26%	7	
LGA: Ibadan north							
Medical Centre	**No of doctors on record**	**Selected % of doctors**	**Selected number of doctors**	**Number of nurses on record**	**Selected % of nurses**	**Selected number of nurses**	
University teaching hospital	423	5%	22	1131	3%	30	
Adeoyo teaching materniy hospital	18	28%	5	217	5%	10	
LGA: Ogbomosho north							
Medical Centre	**No of doctors on record**	**Selected % of doctors**	**Selected number of doctors**	**Number of nurses on record**	**Selected % of nurses**	**Selected number of nurses**	
Bowen University Teaching Hospital (BUTH)	41	10%	4	87	12%	10	

- The above statistics make a total of 109 respondents. In all the health centres chosen, a random sampling was done to choose 15 laboratory scientists. This made a total of **124 respondents.** However, only 112 respondents were gotten due to the fact that most of the record of personnel gotten for the rural health

centres didn't exist. That is, the rural health centres had less personnel in reality compared to the number on record.

- However, 25% of the sampled respondents represent the rural area while the remaining 75% represent the urban area.

Primary data were obtained through the use of structured questionnaire which contain open and closed ended questions as well as an interview scheduled for the senior medical officers. Descriptive and inferential statistics were used to analyse the data. This includes bar charts, frequency distribution, percentages, Chi-square and ANOVA.

Dependent variable measured was the perception of health personnel on the use of social media for healthcare delivery; while the Independent variables include the personnel's socio-economic characteristics, different method of healthcare delivery, the personnel's knowledge and awareness of social media; and the constraints limiting the use of social media for healthcare delivery.

5. RESULTS AND DISCUSSION

5.1 Socio-economic Characteristics of Respondents

Table 1 shows the distribution of the respondents' personal characteristics. A good number of the respondents were below 50years with 30.4% being less than 30years; 45.5% were between 31 and 40 years. This implies that most medical personnel in Oyo State are still in their active years. Hence, attitudes to work are likely to be commendable to a large extent. This is in line with Akinbile (2007) that population between 21 and 40 years of age constitute the active workforce. This distribution also shows that more young people are favourably disposed to innovation and are prone to quick change. Hence, younger medical personnel tend to embrace the social media concept faster. Also, this finding agrees with a research on the social media use for USA by the National Cancer Institute. It was discovered that recent growth of social media is not uniformly distributed across age groups and also that those aged 25-44 were three to five times more likely to use online support groups ((Wen-ying *et al,* 2009).

Data obtained from the study indicated that there were more female medical personnel (66.1%) than male (33.9%); this fact is evident from Table 1. This effect could be traceable to the fact that a lot of nurses make up the number of respondents that responded to the questionnaire, since the nursing profession is female dominated in Nigeria. There were 85.7% Christians examined in the study and 14.3% were Muslims. This implies that there were more Christians than Muslims in the study areas. The population of the Muslims, though little, were found mainly in the rural areas which made up 25% of the study. According to Abiodun and Umoh (2011) religion is a major force both for personal and societal change and stability.

The educational status of the respondents was discovered to be very high with 99.1% of them having tertiary education as their highest qualification. Only 0.9% has secondary education as their highest educational level. This implies that most medical personnel are well educated and well informed. As it is known that social media use is available and more effective in the hands of educated persons, the high rate of literacy among medical personnel gives a possibility for positive perception towards the use of social media.

All the respondents had more than one year of working experience with 33.9% of them having less than five years work experience; 31.3% have within six and ten years working experience; 8% have eleven to fifteen years work experience; 11.6% have sixteen to twenty years work experience; 10.7% have twenty one to twenty five years working experience; 3.6% have twenty six to thirty years work experience, while only 0.9% have more than thirty years working experience. This infers that about sixty per cent of the respondents in this study have ten years work experience. Although, the number of years put into medical practice has not reflected the use of social media but can positively affect their perception towards the use for health care delivery system.

5.2 Respondents' Awareness of social media

From Table 2, it is seen that a larger percentage of the respondents are aware of social media. The mean score is 16.70 ± 3.19. This implies that many of the respondents do have a good idea of what social media is; what it is used for and other points accrued to using it. For example, 70.5% agreed to the fact that social media maintains a cordial doctor-patient relationship, attending to patients via social media saves time and energy while 87.5% , 67.9% agreed social media reduces the amount of paper work and social media helps to reduce bureaucracy in public hospitals respectively. This high awareness level could a function of the gradual shift of the world generally to a social media reality. In a recent edition of the *Time* magazine, Kate (2012) notes that there is a growing popularity of electronic medical record which has forced many doctors to be glued to their computers throughout the day.

5.3: Knowledge about social media

From table 3, respondents have a high knowledge of social media. The mean score is 13.3± 2.67. This could be as a result of a continual exposure to different social media sites both for personal and professional purpose as well as an exposure to adequate information about social media. This negates what Andrea Santiago of About.com Guide (2012) said that "there is not a great deal of information specific to the healthcare industry". This high knowledge was observed from their responses to most of the knowledge statements, 90.2% of the respondents know about social media, while only 67.9% of them use it, 91.1% of the respondents thinks they can talk to their patients via social media; 63% of them thinks diagnoses via social media is more effective than phone calls; 95.5% of them thinks they can share new discoveries via social media; 75.9% of them thinks the use of social media for health-cost payment will encourage government's proposed cashless policy; while 80.4% of them know that Facebook is not the only available social media. This implies that medical personnel know a lot about social media. The possibility of using social media for healthcare delivery is feasible since their knowledge of social media is high. All that is required is more training, exposure and information campaign among health providers.

5.4: Respondents' Perception of social media

From table 4, it is observed that more respondents have a favourable perception to the use of social media in healthcare delivery. The mean score is 84.34±13.20. Hence, 45.5% respondents had less than the mean score, making up the population with an unfavourable perception of the use of social media in healthcare; while 54.5% of the respondents had above the mean score, making up the population with favourable perception of the use of social media in healthcare. However, it is observed that the difference between the population with favourable perception and that with unfavourable perception is not very striking. It can be deduced that although most of the personnel have a high knowledge of social media, they do not think it could be used in healthcare delivery and probably especially in the Nigeria setting. Hence, a high knowledge and awareness level has led to a favourable perception.

5.5: Constraints to the Use of social Media

It is observed that a number of issues are factors that limit the use of social media in healthcare delivery. These factors range from literacy, technical know-how, fund/ capital, to adequate patient check-up, etc. The mean score of each statement was determined and ranked. The highest mean score is 2.18 and the statement with this mean score is said to be the most severe constraint to the use of social media. The statement is "the effectiveness of social media is compromised by lack of power supply". It is known generally that the most challenging problem of every growing industry in Nigeria is power. This is not an exception when it comes to social media, especially in healthcare delivery where a constant and deliberate effort is to be made, both by the health providers and patients, to keep in touch.

The second highest mean score is 2.12 with the statement "laboratory test and examination are impossible via social media". This reveals the fact that social media, although with a lot of capacities, can be limited when it comes to laboratory tests/activities. It will be impossible to take blood samples, for instance, via social media. However, a preliminary examination and diagnoses can be done via social media, such that, the patient knows the exact test to go for; rather wasting resources on several irrelevant tests. The third highest mean score is 1.96 with the statement "patients' feedback is limited via social media". Medical personnel are of the opinion that social media does not give a good avenue for patients to communicate effectively as well as giving adequate information about their observed symptoms.

Test of hypothesis

Hypothesis 1:   Table 5 shows that there is no significant relationship between respondents' sex (χ^2= 0.780, p > 0.05), religion (χ^2=0.209, p> 0.05), educational status (χ^2=0.269, p> 0.05), actual age (r = 0.093, p> 0.01) as well as years spent in service (r = 0.102, p> 0.01) and perception on the use of social media for healthcare delivery. Hence, the hypothesis is accepted. This implies that respondents' sex, religion, educational level, actual age and numbers of years spent in practice is not associated with their perception on the use of social media for healthcare delivery. This means that medical personnel's personal characteristics do not affect what they feel about the use of social media in healthcare delivery. Personnel's age, for instance, do not affect their perception about the use of social media; this is contrary to the general myth that social media is suitable only for young people (MythBuster, 2012). This finding also negates a research that was done on the social media use for USA by the National Cancer Institute. It was discovered that age was significantly different from their usage of social media (Wen-ying Sylvia *et al,* 2009).

Hypothesis 2:   there is no significant relationship between the constraints involved in the use of social media and the perception of health personnel on the use of social media for health care delivery. By this, we can say that

the limitations involved in the use of social media do not affect what the personnel's feel about using social media for healthcare. This is obvious in Table 6 where the respondents agree that many of the raised statements are severe constraints to the use of social media; yet this does not result in a low perception from them. This, probably, suggests that their perception is affected more by their personal views about social media in healthcare and not the identified constraints. Hence, it will be a wise decision to evaluate the factors that has influenced their perception.

Hypothesis 3: there is no significant relationship between the knowledge of respondents on social media and the perception of health personnel on the use of social media for health care delivery. Table 7 indicated that the null hypothesis is rejected. This means that the respondents' knowledge about social media influences their perception about the use of social media in healthcare delivery. As seen above in table 3, they have a high knowledge of social media (69.9%) and this has influenced what their perception, about the use of social media in healthcare, is. It can be inferred that adequate knowledge of what social media is; its benefits and general uses can help to influence the respondents' perception about the use of social media in healthcare.

Hypothesis 4: there is no significant difference between the perceptions of health personnel across the health centres. The results shown on Table 9 revealed that the null hypothesis is accepted. It indicated therefore that there is no strikingly observable difference between the perceptions of the health personnel in all the health centres. Hence, they all have the same disposition towards the use of social media for healthcare delivery.

Conclusion

Health personnel have a favourable perception to the use of social media in healthcare delivery. Although, a lot of medical personnel in Oyo state have a robust knowledge of social media and think it can be very useful for healthcare delivery, they still do not use it or even see the feasibility of its implementation in Nigeria. This is largely due to the fact that they do not think the idea will be accepted by their patients, a larger percentage whom are illiterates and ignorant of social media.

Recommendations

This study recommends the following;

➢ As a matter of policy, the Federal Government should provide an enabling environment for the effective and purposeful use of social media communication in the Nigerian healthcare sector. The implications of these for rural development are diverse. Farmers and rural dwellers, for instance, may require acquisition of knowledge in ICT and other aspects of computer literacy, especially if these could help in farmers' access to technology-driven healthcare service. In areas with insufficient health workers, a mobile telemedicine facility could be provided. This will help the rural dwellers by-pass the constraint of access to the use healthcare services. Hence, a more productive farming and rural community is achieved.

➢ Social media encourages youth participation, it is crucial to reflect on how the energies of rural youths can be harnessed through an engagement of their time for this innovative effort to use social media to bring healthcare to rural communities.

➢ This research will like to propose the use of BB-pings as a quick and common social media in this age. With this, it will be easy for the patient to reach his medical consultant faster; especially on issues that need quick diagnoses. However, the personnel might not be able to see the patient except the patient send pictures that describe his ailment. It is important to note that the world is gradually moving from e-health to m-health (i.e. mobile-health) and Nigeria needs to arise to meet the rising improvement in the medical world.

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Table 1: Distribution of Respondents According to Their Personal Characteristics

Variables	Frequency (N= 112)	Percentage
AGE		
≤ 30	34	30.4
31-40	51	45.5
41-50	20	17.9
≥50	7	6.3
SEX		
Male	38	33.9
Female	74	66.1
Religion		
Christianity	96	85.7
Islam	16	14.3
Educational level		
Secondary	1	0.9
Tertiary	111	99.1
Year of practice		
≤5	38	33.9
6-10	35	31.3
11-15	9	8.0
16-20	13	11.6
21-25	12	10.7
26-30	4	3.6
>30	1	0.9

Source: (Field Survey, 2012)

Table 2: Awareness of social media

		Frequency	Per cent
Valid	low	46 (3- 16)	41.1
	High	66 (17- 22)	58.9
	Total	112	100.0

Source: (Field Survey, 2012) Mean score= 16.7; Std. dev= 3.19

Table 3: Knowledge of social media

		Frequency	Per cent
Valid	low	34 (1-12)	30.4
	High	78 (13- 17)	69.9
	Total	112	100.0

Source: (Field Survey, 2012) Mean score= 13.3; Std. dev= 2.67

Table 4: Personnel's perception about the use of social media

		Frequency	Percentage
Valid	Unfavourable	51 (25-83)	45.5
	Favourable	61 (84- 121)	54.5
	Total	112	100.0

Mean score= 84.3; Std. dev= 13.2   **Source: (Field Survey, 2012)**

Table 5: Personal characteristics and perception

Variable	Degree of Freedom	χ^2- value	p-value	Decision
Sex	1	0.780	0.842	Not significant
Religion	1	0.209	0.282	Not significant
Educational level	1	0.269	1.000	Not significant
PPMC Analysis of respondents' age and years spent in service				
Variables	Degree of freedom	r- value	p- value	
Age	1	0.013	0.328	Not Significant
Years spent in service	1	0.102	0.286	Not significant

Source: (Field Survey, 2012)

Table 6: Correlation between constraints to the use of social media and their perception

Variables		r- value	p- value	Decision
Constraints	and	0.009	0.927	Not significant
perception				

Source: (Field Survey, 2012)

Table 7: Correlation between respondents' knowledge and perceived relevance

Variables		r- value	p- value	Decision
Knowledge	and	0.276	0.003	Significant
perception				

Source: (Field Survey, 2012)

Table 8: Perception score across the health centres

Health centres	N	Subset for alpha= 0.05
		1
Adeoyo	18	79.7
General hospital, Eruwa	6	81.2
Gen hosp, Iseyin	9	82.4
Gen hospital lanlate	2	83.0
UCH	55	84.4
Ado-Awaye	3	87.7
BUTH	17	89.6
Awojobi clinics	2	94.0
Sig		0.169

Source: (Field Survey, 2012)

Table 9: ANOVA (perception score)

	Sum of squares	df	Mean square	F	Sig
Between groups	1168.456	7	166.922	0.956	0.467
Within group	18160.651	104	174.622		
Total	19329.107	111			

Source: (Field Survey, 2012)

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