

Social Media and Unfounded Health Beliefs: An Assessment of Participants' Response to Health Posts on Epidemics

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Abstract

The flexibility of social media platforms has made seamless global exchange of communication practicable. The instinctive first port of call for information seekers, in the face of any new phenomenon, is usually these social media platforms. This study investigated social media participants' response to health posts on epidemics. The study was designed as a survey. The study population comprised all university undergraduate students in South-East Nigeria (134,000). A sample of 400 respondents was selected from this population. Data collection was based on a 20-point questionnaire, administered to these study units. Findings indicate that there is widespread social media participation among university undergraduate students in South-East Nigeria and these students are exposed to social media health posts on epidemics. Also, these students, generally, place value on social media health posts, and centre their health beliefs on the gist of these health posts on epidemics. It was concluded that the influence of social media health posts on health beliefs warrants prioritizing the strength of these platforms, by health communicators and policy makers, in the quest to inform and influence the health choices of people, especially in regard to counteracting the negative influence of misinformation and disinformation that also comes from these platforms.

Keywords: Social media, Health posts on epidemics, unfounded health beliefs, Health choices

1. Introduction

"This message is urgent; mix salt in a cup of water and drink it. Also mix salt in a bucket of water and bath with it to protect you against contacting Ebola virus."

Nigerians woke up one morning to read the above message in their phone inbox and on social media networks. Interestingly, while the above advice seemingly was not attributed to any identifiable authority and was never communicated via radio, television, newspaper or magazine, yet many Nigerians believed it at a time when the Ebola epidemic was ravaging parts of West Africa and had been reported to have come into the country. Those who believed it not only took the recommended action but also forwarded the message to family members and friends, thus replicating the misinformation. At the end of it all, four persons were reported to have died as a result of too much salt finding its way into the body through the pores of the skin and jacking up the blood pressure (Obukoadata, & Abuah, 2014).

Now, the source of this misinformation is now known to be the Attah of Igala, His Royal Majesty Idakwo Michael Ameh Oboni II, (Obukoadata & Abuah, 2014). However, whether its deceptive nature was by error or design and whatever was the motive, the remarkable degree of influence it appeared to have exerted in the public sphere and the fact that social media was its major means of dissemination, is an indication of the power of these platforms and their potential to influence minds.

A strikingly similar social media-inspired misinformation occurred in the United States on the same subject and about the same time. Following the first diagnosis of an Ebola case in the US on 30th Sep 2013, mention of the virus on Twitter leapt from 100 per minute to more than 6,000. In Iowa, the Department of Public Health was forced to issue a statement dispelling social media rumours that Ebola had arrived in the United States. Meanwhile, a steady stream of posts claiming that Ebola can be spread through air, water and food appeared; all of which are inaccurate (Terzi, 2013).

The two mentioned cases in Nigeria and the US are quite instructive of how powerful an influence the social media can be in skewing people's beliefs and actions in times of social crisis like the outbreak of epidemics.

Social media have become an integral part of how people communicate, stay in touch, keep on top of new developments and connect with the world around them (Okoye, 2011; Nwosu, 2012). With their ubiquitous and interactive nature, social media have now become a major source of information and interaction among Nigerians (Nwosu, 2012). However, given its uncontrolled nature, social media can be potentially harmful in the event of misleading information from ignorant or merely malevolent users going viral through them (Akindehin & Akindehin, 2011; Adaja & Ayodele, 2013).

Consequently, social media participants are always confronted with the danger of falling prey to such misleading information (Okoye, 2011). This is even truer when what is involved is something as urgent and frightening as an epidemic, given that people tend to rely on the media for direction in such situations of uncertainty, as postulated by the media system dependency theory (Baran, 2010).

2. Purpose of the Study

The purpose of this study was to investigate how social media users react to health posts on epidemics. In other words, the research sought to determine the extent social media participants (university undergraduate students in South-East Nigeria, in this case) are influenced in their beliefs and actions by social media information regarding epidemics. Specifically, the study sought to address the following questions:

1. Who among university undergraduate students in South-East Nigeria participate in the social media?
2. How exposed are these university undergraduate students to health posts on epidemics?
3. Who among these students place value on social media posts?
4. To what extent are their reactions to suggestions of health actions against epidemics influenced by their belief in the gist of health posts on epidemics?

3. Social media: An Overview

The social media is a twenty first century innovation in communication, but they have gained a wide acceptance all over the world such that there is hardly a part of the world where they are not used and talked about (Okoye, 2011). Consequently, over the years a body of conceptual and empirical literature on social media and how it influences people's beliefs and action on a wide range of phenomena including health has grown.

Social media are technologies that facilitate social interaction, make possible collaboration, and enable deliberation by stakeholders across boundaries, time and space. These technologies include: blogs, wikis, media (audio, photo, video, text) sharing tools, networking platforms and virtual worlds (Bryer and Zavatarro, 2011).

Social media sites on the internet have gained popularity over the last decade. These sites have attracted millions of users worldwide (Boyd, & Ellison, 2007), and due to this fact many people are changing the outlets where they search for news, information, business and entertainment. These social media sites let those who use them create personal profiles, while connecting with other users of the sites. Users can upload photographs and post what they are doing at any given time (Pempek, Yermolayeva, & Calvert, 2008).

The social media by their nature have the capabilities of educating, informing, entertaining and inflaming the audience. Above all, they possess a contagious and outreaching influence which the conventional media lack. This potential is most likely what Osahenye (2012) refers to as "unstoppable power of the social media."

There are indications that social media is becoming a powerful source of health information in today's society. Although there is a great deal of interest in using social media as a tool for public health communications, the research evaluating its utility is still in its infancy. There is an abundance of both informal health conversations related to public health issues and organized health-related activities on leading social media platforms such as YouTube, Twitter, and Facebook. The quality of health information available to users on these platforms is highly variable raising some concerns that social media users are exposed to unopposed viewpoints that counter core public health recommendations and contemporary medical science, such as those opposing immunization and promoting smoking (Okoye, 2011; Nwosu, 2012; Obukoadata & Abuah, 2014).

The social media, unlike the traditional media, is an unregulated space wherein all and sundry can post information with little or no scrutiny. This renders it vulnerable to misleading information whether as a result of error or sheer mischief on the part of those posting the information (Okoye, 2011). This very fact calls for concern vis-à-vis the extent the audience relies on social media for information on epidemics and the extent this information influences their reaction. This forms the basis of this research.

4. Social Media in Nigeria

By the turn of the 21st century, Internet connectivity and access had begun to take root in Nigeria and so also social media access. Today, the Internet has fully arrived in Nigeria as access to the web is daily becoming common among Nigerians of various demographics. Uche (2010) opines:

Internet has become largely integrated into Nigeria's communications space. Access is growing, awareness and literacy are equally rising. Today, an average jobseeker is compelled to go online in making his/her application and the same thing obtains with university admission seekers. All these factors are proving to be a catalyst to Internet growth in the country. And one thus could see the clear sign that Nigeria is on the path of reaching the level of Internet-permeated climes like the United States and other developed countries.

Thus, as the Internet permeates the population so also access to social media rises in the country. Social media access in Nigeria comes via two major platforms: personal computers and mobile phones. However, it was the arrival of mobile phones (precisely smart phones) that, like never before, popularized the Internet and consequently social media access in Nigeria. This trend, nevertheless, appears to be a global one as observed by Kim (2002):

Since the start of the millennium, the power of the mobile phone (cell phone) in adolescent life has become increasingly evident. Although the mobile phone was invented only as recently as 1973, in the past decade it has become an inseparable

part of everyday life all over the world and its sphere of penetration continues to grow. The speed with which this new device has conquered contemporary society, urges socio-psychological exploration... A key effect of the increased accessibility of mobile phones is that it has revolutionized Internet access. It has not only brought internet into the hands of many, but has made this conveniently moveable.

Unlike in advanced societies like the United States of America and the United Kingdom, the Internet is considered inchoative in Nigeria. Okoye (2000, p.196) corroborates this when he observes that "Owning a computer in Nigeria is still considered an achievement, but in the US students do their homework at home and send it to their lecturers by e-mail."

Notwithstanding, Internet penetration has gone a long way in Nigeria and continues to deepen. According to the International Telecommunications Union (ITU), between 2000 and 2011, Internet users in Nigeria grew from 200, 000 to 45,039,711 amounting to 0.1% and 26.5% of the population respectively. Still on the continuous rising Internet access in Nigeria, Amaefule (2012), with reference to official statistics, observes:

With 45.04 million people that use the Internet, Nigeria has been named among the 20 top countries that use the Internet. According to the usage statistics on the top nations on the Internet, Internet World Stat, Nigeria occupies the 11th position, just immediately after France, which has Internet population of 50.29 million. Nigeria also comes ahead of Mexico with Internet population of 42 million. This rating means that two per cent of global Internet population of 2.29 billion people are Nigerians. On a population estimate of 170.12 million people, Nigeria's Internet penetration ratio was put at 26.5 per cent. This means that 26.5 persons out of every 100 Nigerians use the Internet.

In spite of obvious infrastructure and other socio-economic challenges, Internet penetration maintains a good prospect in Nigeria as observed by Internet World Stats (2011):

Nigeria's Internet sector has been hindered by the country's underdeveloped and unreliable fixed-line infrastructure, but this is changing as competition intensifies and new technologies are able to deliver wireless broadband access. More than 400 ISPs have been licensed as well as a number of data carriers, Internet exchange and gateway operators. Voice over Internet Protocol (VoIP) is already carrying the bulk of Nigeria's international voice traffic. The current deployment of the country's first Next Generation Networks (NGN) will drive further convergence of voice, data and video/TV, enabling the provision of triple-play services that will ultimately also involve the country's already competitive broadcasting sector.

Against this backdrop, there may be little or no reason for one to doubt the projection by the *Associated Press* that Internet access in the country is set to triple in 2013 (Jidenma, 2011). All these would equally imply that social media access is on the rise in the country

5. Youth Participation in the Social Media

A youth has been defined as constituting persons in their early 20s, and shortly before that, up to those in their late 40s; literature has shown that the youth constitute a bulk of social media users (Wiley and Sisson, 2006). This apparently is a direct result of the fact that the Internet is dominated by young people (Salako and Tihamiyu, 2007). Statistics globally have continually indicated that the youths have been the most active population in the use of the Internet. Citing studies by Lumen (2004), Arnold (2006), Adekeye (2009) and Nelson (2010), Salako and Tihamiyu argue as follows:

The world over, the Internet has proved to be particularly attractive to the younger generation... This fact may be attributable to its (Internet) dynamic multimedia character which lends itself to all manner of uses. And given that the youth are naturally adventurous, willing to experiment on all manner of innovations, the Internet thus becomes their delight. The validity of this fact has been empirically demonstrated in relation to various climes including Nigeria... Even a mere casual observation is likely to convince one that Nigerian youths constitute the core of the Internet-using population in the country.

A significant segment of the youth users of the Internet in Nigeria are students, both of secondary and tertiary levels of learning (Salako & Tihamiyu, 2007). Elaborating on this point, Salako & Tihamiyu (2007), hold that:

Students constitute a large portion of Internet users in Nigeria for some obvious reasons. First, the students are largely young people with strong urge for trying out new things and are therefore naturally attracted to "exciting" innovations such as the Web. Second, their educational exposure helps them to easily acquire the media literacy required for Internet use. And lastly, certain exigencies of their academic

work (such as researching for assignments and online school registration) tend to compel them towards Internet exposure.

Okoye (2012), however, adds that there is “far more access” among students of tertiary institutions than their secondary school counterparts given that the former are basically more financially and culturally independent which affords them the leverage (in terms of wherewithal and freedom) to access the Internet. Furthermore, the university undergraduate students are likely to have more academic and even social needs to attend to on the Internet.

Rhanem (2014) noted major international symposia on the issue of youth participation in social media. The South Mediterranean youth policy co-operation of the partnership between the European Union (EU) and the Council of Europe in the field of youth with various actors in the region started in 2003. According to the scholar, the process of change brought about by the “Arab Spring” in various countries provides the context and drives the need for continuing and even intensifying this co-operation and for responding to the expectations of the stakeholders, particularly young people. Subsequently other symposia have been held; the scholar accounts below:

In 2012 two events, in Malta and Tunisia, were organised by the EU and the Council of Europe in the framework of their partnership in the youth field, in co-operation with other actors and partners working in and with the region. Both events, in Malta and Tunisia, led to the identification of ways to increase youth democratic participation through the use of social media, concrete project proposals to foster co-operation, to empower youth NGOs and to promote the development of knowledge-based youth work and youth policy.

Rhanem (2014) further notes that a seminar was organised in July 2013 on the theme of social media and youth participation in Hammamet, Tunisia by the Council of Europe and the European Commission. The seminar debated issues of privacy, provided youth activists, and experts with a space for sharing reflections and experiences, focusing on the potential of social media to contribute to democratic and inclusive societies, and increasing the participation of youth and non-profit organisations in public life. While the seminar highlighted effective social media tools for increasing participation, it also discussed the ethical responsibility of young activists and bloggers to provide accurate, more objective and reliable information via social networking without attacking others’ personal liberties. Among the recommendations of the seminar was the development of a user-friendly guide on social media strategies for NGOs while sharing experiences and best practices related to social media and youth participation.

6. Health Communication and the Media

According to Witte (2000, p.111), the mass media “are intensively employed in health communication. Vast sums are spent annually for materials and salaries that have gone into the production and distribution of booklets, pamphlets, exhibits, newspaper articles, and radio and television programmes”. These media are employed at all levels of public health in the hope that three effects might occur: the learning of correct health information and knowledge, the changing of health attitudes and values and the establishment of new health behaviour .

Mass media campaigns have long been a tool for promoting public health (Noar, 2006); being widely used to expose high proportions of large populations to messages through routine use of existing media, such as television, radio, and newspapers. Communication campaigns involving diverse topics and target audiences have been conducted for decades (Wakefield, 2010).

Such campaigns are frequently competing with factors, such as pervasive product marketing, powerful social norms, and behaviours driven by addiction or habit.

Mass media campaigns have generally aimed primarily to change knowledge, awareness and attitudes, contributing to the goal of changing behaviour. However, there has not normally been a high expectation that such campaigns on their own would change people’s behaviour (Wakefield, 2010).

Witte (2000) argues that, as with other preventive health efforts, mass media campaigns are most likely to reduce unhealthy attitudes if their messages are reinforced by other efforts. Reinforcing factors may include law enforcement efforts, grassroots activities, and other media messages."

There is a vast literature relating to public health information campaigns. Much theoretical literature is devoted to the topic of effectiveness of health communication strategies (Halpern & Bates, 2004). Mass media campaigns, Halpern & Bates (2004) argue, have usually been one element of broader health promotion programmes with mutually reinforcing components:

- Mobilizing and supporting local agencies and professionals who have direct access to individuals within the target population.
- Bringing together partnerships of public, voluntary and private sector bodies and professional organizations.
- Informing and educating the public, but also setting the agenda for public debate about the health topic, thereby modifying the climate of opinion surrounding it.

- Encouraging local and national policy changes so as to create a supportive environment within which people are more able to change their behaviour.

Most health communication campaigns involve risk, i.e. risks to people and societal risks (Kitzinger, 1999). The concept of risk has been at the focus of contemporary thinking in recent years because of the salience and threat of environmental issues, which have received extensive public and media attention (Kitzinger, 1999).

Giddens (1999) observes that most traditional cultures did not have a concept of risk and argues that it is a concept associated with modern industrialized civilization, embodying ideas about controlling or conquering the future. People are forced to negotiate their lives around risks, and to rely increasingly on their own judgments about risks. Experts can assess the likelihood and magnitude of a given risk; however the public understanding of a given risk takes on meaning through our cultural practices.

Elliott (1987) argues that one important cultural site for the production of meanings about risk is media content, including communication campaigns. "The meaning of a particular health risk to various groups in the society, for example, develops through the continuing and often changing representations of that risk in media content, and in scientific and medical discourses, as well as through other social and cultural practices". For instance, the people may come to understand the risk surrounding the Ebola virus disease based on how the media represent it. It is against this background of changing technical, media and public discourses that communication campaigns are planned

Wynne (1996) argues that, just as expert opinion is central to ideas about risk, so too is lay criticism and comment. He observes that, while risks may be debated within scientific or 'public accountability' discourses, they are dealt with by most people as individuals in very specific situations, at the level of the local, the private, the mundane, the everyday, and intimate experiences. Wynne argues that it is essential to examine how perceptions of risks are constructed by local, or as he terms it 'situated', knowledge, as well as by expert knowledge. For example, there are profound differences across class, gender, race, ethnicity, age and other variables in the ways people understand, interpret and respond to health risks. Individualism might suggest a degree of choice in negotiating risk, but it is recognized that, within the power structures of our society, some people have more authority over the ways risks are identified, defined and managed, than do other people. Anecdotally, it has been noted that a teenage boy will ask for the cigarette packet with the warning label 'Smoking is dangerous to pregnant women' because 'it doesn't apply to him' (Wynne, 1996).

This risk perspective offers invaluable insights for communication campaign planners. This section of communication literature has one point of origin in the environmental sciences, and is particularly important to review because of its parallels to more general communication campaigns (Elliott, 1987).

7. Social Media and Health Communication

The use of social sites as a platform for health discourse is not without serious safety concerns. The potential harm associated with the use of poor quality health information on the Internet has been a concern since the rise of the Internet (Bessell *et al.*, 2002; Eysenbach & Köhler, 2002; Eysenbach & Kummervold, 2005). Lau *et al.* (2012) discuss instances of safety concerns on the popular video sharing platform YouTube. The concerns are in the area of harmful health material targeted at consumers; the psychological impact from accessing inappropriate social media content, tainted public health messages, and public display of unhealthy behaviours. However, Griffiths *et al.* (2014) maintain that there is evidence that misinformation related to specific health problems is often rapidly corrected by others on social networks.

Inceoğlu *et al.* (2014) using Discourse Theory and Critical Discourse Analysis, examined social media health discourse of health professionals (or, health opinion leaders) in Turkey. They identified the concepts of medicalization, individualization and commodification of health to be dominating health discourse. Agreeing with Foucault (1991), they posit that the health discourse disseminated by the health professionals in the social media must be considered within the context of what was termed 'govern-mentality' and 'neoliberal govern-mentality'.

Several critical commentators have had discussions on various aspects of medicalization and commoditization of health. With references to his personal experiences, Elliott (2010) points to how the interests of big medical corporations, and pharmaceutical industry represented the "dark side" of medicine, and how the forces of market, with their endless lust for profit, endangered the health of millions, and transformed doctors into profit seeking, and immoral technicians.

Others have shown how "worldwide neoliberal transformations are creating inequalities in the access to basic health services", which has devastating human costs (Coburn and Coburn 2007; McIntyre and Mooney 2007; Mooney 2012). Angell (2008) has noted that over the past two decades pharmaceutical companies have gained unprecedented control over the evaluation and assessment of their own products; and Terzi (2013) explained how academics and "scientific" journals can manipulate findings of researches sponsored by pharmaceutical industry.

The role of what can be termed opinion leadership in health discourse and management has been captured. Inceoğlu *et al.* (2014), identify "the symbolic-elites of health" (which include academics, doctors, dieticians and herbalist), who through use of traditional newspapers, TV shows, radio programs, magazines, and new media

channels, not excluding web 1.0 and web 2.0 technologies, and with their professional authority, draw the line of distinction between healthy and unhealthy bodies; legitimate and illegitimate lifestyles; desirable and undesirable looks; harmful and useful diets, etc. These figures, according to the scholars, “became important carriers of health discourse in contemporary societies; which was a role undertaken almost exclusively by the state in previous decades.” This position might however be challenged by the argument that social media has democratized information dissemination in all facets of social life, obviating the need for any symbolic-elites.

Rebecca *et al.* (2014) note a number of uses of social media in the dissemination of health information. According to them, social media is currently utilized by public health organizations as a broadcasting platform to amplify messages from traditional media sources (e.g., radio, television, and print media); it is as well used as an entirely new way of collaborating and co-creating content with target audiences. Their argument is that organizations have had to adapt their communications strategies to incorporate user-generated content and feedback. Hence the process of engaging users to co-create content, to rate, rank and comment on communications is increasingly perceived to give a heightened authenticity to messages, improving trust in, and building users’ relationships with organizations.

Furthermore, social media platforms are being studied by health researchers and mobilized for other purposes. These include recruitment for clinical trials; professional development and training for clinicians; inter-professional communication and coordination; training simulations; health social networks and health and illness support groups; health advocacy and fundraising for health organizations; development of interactive, self-management tools and plug-ins to popular social media platforms; public health messaging and infectious disease monitoring (Rebecca, *et al.*, 2008). Arguably these variety of uses to which social media is disposed, makes it a veritable platform for the dissemination of health posts.

8. Social Media Health Discourses from an Empirical Standpoint

Kate, Douglas, Timothy, Joshi and Islam (2014) evaluated the quality of malaria health and treatment information available on the Internet in the Nigerian context. Two key terms (malaria & treatment) were entered into three search engines: Google, Yahoo! and Bing. In order to retrieve articles as if the searches were conducted in Nigeria, the Local Area Network (LAN) settings were changed to a Nigerian proxy server, with a local Internet Protocol address. Three raters evaluated the quality of information using the DISCERN [9] instrument criteria. Kendall’s concordance coefficient (W) was calculated to determine the level of agreement among the three raters. Results showed that among the 38 websites evaluated, the highest inter-rater average score was attributed to the Patient.co.uk website, followed by Wikipedia web site and Malaria Site. The “Home Remedies for You” website received the lowest score. Most evaluated websites were .com domains. The highest average score was given to .co.uk domains while .int had the lowest score. The researchers concluded that improving the quality of malaria-related health information could lead to empowering communities, engaging and assisting them to strengthen their health and social information sharing and support

Ajuwon (2006) assessed physicians’ use of the Internet for health information and patient care. One hundred and seventy-two physicians at the University College Hospital (UCH) Ibadan, completed a 31-item, anonymous, standardized questionnaire. The Epi-Info software was used for data analysis. Findings showed that virtually all (98%) of the respondents had used the Internet; 76% accessed it from cyber cafes. E-mail was the most commonly used Internet service (64%). Ninety percent of the respondents reported they had obtained information from the Internet for patient care; of this number, 76.2% had searched a database. The database most recently searched was MEDLINE/PubMed in 99% of cases. Only 7% of the respondents had ever searched the Cochrane Library. More than half (58.1%) perceived they had no confidence to download full-text articles from online sources such as the Health Internetwork Access to Research Initiative (HINARI). Multiple barriers to increased use of the Internet were identified, including poor availability of broadband (fast connection speed) Internet access, lack of information searching skills, cost of access and information overload. The study concluded that physicians’ use of the Internet for health information and patient care was widespread but use of evidenced-based medicine resources such as Cochrane Library, Up-to-date and Clinical Evidence was minimal.

Omolase, Balarabe & Omolase (2010) examined the use of the Internet for health information among Nigerian Ophthalmologists. About 100 Nigerian Ophthalmologists out of the one hundred and forty selected by simple random sampling returned their filled self-administered questionnaire. The information obtained included the bio-data of the respondents, access to Internet and their desire for further training in Internet use. Results showed that majority of the respondents (98%) had access to the internet while the remaining (2%) did not. Most of the respondents (72%) expressed desire for further training in accessing health information on the Internet while the remaining (28%) did not.

Shabi, Shabi, Akewukereke & Udofia (2011) explored the ways in which Nigerian Teaching hospitals utilize the new and social media. Specifically, it investigated how these platforms were used as public relations tools (for enhancing their visibility, promoting their services and corporate image), educational tools (to provide health information, enlightenment and education for the purpose of preventing disease and promoting health) and

social tools (to deepen interactions and exchanges between healthcare providers and healthcare recipients. Findings showed that the major uses to which Nigerian teaching hospitals put the new and social media were to get feedback from clients (100%), present their vision and mission statements (65%), post administrative and personnel structure information (65%), and give details of contracts (60%). These media were little used for health promotion (25%), financial transactions (10%) and interactive engagement with clients (0%). The content of Nigerian Teaching Hospitals' web pages can be categorized into three as follows: employee/public relations content (100%); in-patient and out-patient-specific content (30%), and public health promotion and education content (25%). These researchers concluded that Nigerian teaching hospitals' resort to the new and social media is for the purposes of publicity and propagation of self image (public relations).

Similarly, Shabi, Shabi, Akewukereke & Udofia (2011) assessed the extent, purpose, determinants and the impact of the utilization of Internet medical databases among physicians. The method involved a descriptive cross sectional survey of 540 randomly selected physicians at the two tertiary health institutions in Osun State, South west, Nigeria. Findings showed that all the respondents have used the Internet medical databases within the last 4 weeks of the study. Majority, (53.8%) used the Internet resources at least once in 2 weeks, while 12.2% used the resources every day. The online resources were mainly sought for routine patient care and for research purposes. The frequently used online databases/digital archives are pubmed (70.3%), hinari (69.0%), and Free medical journals (60.1%). It was also discovered that Internet resources had positive impact on the clinical practice (40.0%) and research output (65.5%) of the physicians.

Oyadoke, Salami & Brieger (2005) studied the use of the Internet as a health education tool and as a resource in health education planning. They reported that computers, e-mail, Internet, and CD-Rom used by health education programme officers in five states in south-western Nigeria were assessed to document their present access and use. Eight of the 30 organizations visited were government health ministry departments, while the remainder were non-governmental organizations (NGOs). Six NGOs and four State Ministry of Health (MOH) departments had no computers, but nearly two-thirds of both types of agency had e-mail, less than one-third had Web browsing facilities, and six had CD-Rom, all of whom were NGOs. Only 25 of the 48 individual respondents had computer literacy. Narrative responses from individual employees showed a qualitative difference between computer and Internet access and use and type of agency. NGO staff in organizations with computers indicated having relatively free access to a computer and the Internet and used these for both programme planning and administrative purposes.

Buhari, Ahmad & Ashara (2014) examined the use of social media among 922 students of Katsina polytechnics. Findings from the descriptive survey revealed that the students used the social media to share information, chat and interact with friends. Similarly, they spent more than five hours using social media. There was the indication that social media has positively influenced their lifestyles and greatly helped them to achieve academic excellence.

Eke, Omekwu & Odoh (2014) investigated the use of social networking sites among 150 undergraduate students of the University of Nigeria Nsukka. The result of the study revealed that most of the students were using social networking sites in interacting with friends, connecting to their classmates for online study and for discussing serious national issues and watching movies etc.

Adaja & Ayodele (2013) examined the extent of Facebook use by Nigerian youths in their academic pursuit. It found that about two-thirds of the youths that use Facebook platform use it for other reasons than exchange of academic materials.

Williams (2011) conducted a survey among university undergraduates in Lagos State to find out their patterns of Facebook use in the 2011 elections. The research made use of 380 respondents drawn from a federal university, a state university and a private university. The study found that though 71.3% said they owned Facebook accounts, just 39.7% admitted to have discussed the elections on their pages. Yet, of the number that said they did discuss the elections, only 21% said they did so regularly.

A similar survey was conducted by Ekpunobi (2012) using students of University of Benin as the population. The aim was to discover their extent of social media access and patterns of use as a platform for election monitoring. Data analysis showed that the students significantly had access to social media platforms ($p < .05$). Among the social media platforms accessible to them, SMS ranked first followed by Facebook, 2go, YouTube, Twitter and ping, in that order. The rate of use for election monitoring was much below average (24%); and male students were found to have utilized the platforms for this purpose much more than the female students ($p < .05$). Users said they had employed it for a range of purposes including finding out and sharing election results, commenting on chances of candidates and sharing news on other critical developments of the election.

Nwosu (2012) studied how Nigerians utilize SMS as a platform for social discourse during the national minimum wage debate of 2012. The study sample comprised 250 respondents randomly selected in Owerri, Orlu and Okigwe, all in Imo State. Findings showed that 49.1% of the respondents claimed to have sent out at least one SMS on the development while it was on. On the other hand, 54.7% said they had received at least one SMS on the development during the period. Majority of those who sent out SMS said they shared news with friends on the

matter, while a few others said they were expressing their opinions. Interestingly, the study found that most of the respondents who claimed to have sent out SMS were civil servants – “probably because matters of minimum wage affect them more closely than others.”

Gukas (2010) investigated how the audience in Jos, Plateau State participated in Nigerian news blog sites. Data generated from 300 respondents across Jos North and Jos South Local Government Areas, revealed that 51.9% of these respondents visited news blog sites while 38% claimed to be contributing to the discussions on these sites. By far students accounted for the majority of the bloggers. This study also revealed that security in Jos as well as Plateau State politics ranked highest among the topics commonly discussed by bloggers.

Against the background of the fact that most newspapers in Nigeria now provide opportunity for online readers to make their contributions after reading any material, Okoye (2011) sought to find out the response of Nigerian readers to this invitation. Readers were selected among regular online readers of *The Punch*, *the Sun*, *the Guardian* and *Daily Trust*. On the whole 190 readers were selected. Analysis of data extracted indicated that almost (95.4%) of the respondents had noticed the call for contributions; in other words, the majority knew the newspapers expected contributions from them. However, only 54.8% claimed to have had at least one occasion to make contributions. Most of these contributors said they had done so because the news subjects had either affected them directly or was otherwise of interest to them.

Following the civil protest and strike action that followed the removal of the fuel subsidy by the federal government, early 2012, Musa and Kadiri (2012) examined how Nigerians had employed the Facebook in relation to the mass action. The researchers found that “at every moment of the protests, Nigerians were active with Facebook postings on the development.” Most of the messages were in support of the mass action, while “quite a few” expressed contrary opinions. Postings came in the form of personal comments, personally captured pictures and texts and pictures either originating from other bloggers or news sites. The study also discovered that even after the protests, postings continued mainly in the form of reminiscences or post-mortems, but gradually reduced in quantity as time elapsed.

Studies conducted outside Nigerian have equally found a vibrant social media use culture among young people. Wiley and Sisson (2006), for instance, discovered that more than 90% of college students use social networks. Similarly, Ellison, Steinfield, and Lampe (2007) observed that students use social networking websites approximately thirty minutes throughout the day as a part of their daily routine.

Also, Khan (2012) in a study of the Impact of Social Networking Websites on Students concluded that students whose age range from 15 to 25 mostly use social networking websites for entertainment. A majority of male students commonly depended on social networking websites for knowledge, while graduate students generally prefer social networking websites for entertainment. Furthermore, the study found that people can use social networking websites due to social influence.

The positivity or negativity of the public’s dependence on social media has been studied. Lenhart and Madden (2007) revealed through a survey that students strongly recommend social networking websites to stay in touch with friends, and to keep informed. Tinto (1997) similarly argued from the findings of a study, that extracurricular activities and academic activities were not enough to satisfy some students, especially “those who have suffered social networking isolation.” Hence, social media is beneficial for students as it contributes to their learning experiences as well as in their academic life. However, Trusov, Bucklin, and Pauwels (2009) seem to differ based on the findings of their study; they hold that social networks are extremely unsafe for teenagers.

Probably as a result of perceived negative influence of youth dependency on social media information, Benzie (2007) as cited by Khan (2012) noted that the Canadian government prohibited employees from Facebook.com. The scholar also notes that in the same way Boyd & Ellison (2007) pointed out that the U.S. Congress has proposed legislation to ban youth from accessing social networking websites in schools and libraries

In addition to evidence of the accelerating popularity of online platforms like Facebook, Twitter, and YouTube, new data suggest that organizations can increase feelings of trust and loyalty through social media use (Leger Marketing Inc 2010). From the perspective of the public or community action, Griffiths et al, (2012) argue that digital social networking has the potential to enable mass protest where health is put at risk or health care provision is perceived to be wanting. In this instance, the scholars claim, interaction through social networks may also lead to the identification of issues that health care professionals have not yet thought about and to the contesting of prevailing ideas about health and health care. Generally, they suggest that the impact of activity on social networks on health care provision may be greater in countries where accountability of health providers and associated governance is weak and the health system is inefficient and inadequate.

9. Theoretical Framework

To place this study in a proper theoretical framework, the uses and gratifications theory was adopted. Uses and gratifications was one of the theories that came up in the light of the emergence of the “active audience” perspective. According to Ojobor (2002), all the discussions before now had emphasized what the media do to people; to

embrace the interactive relationship between the media and the audience, the discussion at this point changes to what people do with the media.

In other words, the theory is an alternative paradigm, a challenge to the old thinking that saw the media as irresistibly forcing itself on the audience. This old idea had inspired earlier theories like the hypothermic needle, mass society and social control – which all conceived the audience as a helpless absorber of media messages. Kazt (1974), a key figure in the development of this theory, called attention to the need for a functional uses and gratifications approach to understanding media effects. He notes: "Uses and Gratifications theory is concerned with the social and psychological origins of needs, which generate expectations of the mass media or other source, which leads to differential patterns of media exposure (or engagement in other activities), resulting in need gratification and other consequences, mostly unintended ones."

The theory holds that the audience's use of the media is principally inspired and shaped by the benefits which it looks forward to by consuming specific media messages. Ojobor (2002) elaborates on this point:

...people don't just buy papers or listen to radio or view television programmes just for the sake of doing so. There must be expectations of some gains from the programme or publication. The theory therefore is concerned with how people use the mass media to satisfy their needs. The theory is based on the assumption that the audience is proactive and seeks media that satisfies their needs; that people choose what they want to see or read and that different media compete to satisfy each individual's needs. For example, if we watch the 9 o'clock network news on channel 10 everyday and like the newscasters or their rendition, that means we seek gratification of news by watching channel 10. As we gain experience with segment of the media and create a cyclical process that reverts us back to watching the news everyday on the same channel.

According to Melvin (1999), there are three objectives in developing the Uses and Gratifications theory:

- To explain how individuals use mass communication to gratify their needs. "What do people do with the media?"
- To discover underlying motives for individuals' media use.
- To identify the positive and the negative consequences of individual media use.

The essentials of the Uses and Gratifications theory have equally been expressed in some other theories like the Play Theory and the Selective Processes. The play theory "suggests that we use the media as a means of escaping into a world of "play" not accessible at other times. Put differently, the media is used for the purpose of satisfying the gratifications of entertainment or "escape". On the other hand, the selective processes postulate that the individual, in relating with the media, is selective in terms of what to consume (selective attention), in terms of what to retain (selective retention) and in terms of how to interpret (selective perception).

All this merely attempts to establish one fact; that the audience of the mass media is, rather than being passive, is active; that it does not follow the media sheepishly, but consciously seeks to utilize it in furthering certain personal needs. The bottom line, therefore, is that what the media gatekeepers give the audience may not necessarily be what it may want to consume and that the effect they may intend may not be the effect it would ultimately have on the audience. In other words, it emphasizes what the audience does with the media and not what the media do to the audience.

In spite of its perceived merits, the Uses and Gratifications theory has been criticized for overlooking the fact that media consumption could also be non-deliberate or inspired by habit. Non-deliberate in that one may be exposed to a message "accidentally"; for instance, one who is watching a sports programme may become "accidentally" exposed to an advertisement coming as insert; and inspired by habit in that someone may have got "uncontrollably" attached to a particular message (say pornography) despite one's "unwillingness". Under such circumstances, critics argue, one may not for sure assert that the audience has fully exercised its discretion (Ojobor, 2002). According to Baran (2010, p.256), holding otherwise would be to remove the responsibility totally from the media gatekeepers vis-a-vis what they give out to the audience. "By entirely attributing media effect to the audience's choices (uses and gratifications), the gatekeepers are in effect being absolved of all wrongdoing even when their message is such that could wreck some real havoc in the society" (Baran, 2010, p.257).

In relation to the subject of this study, the Uses and Gratifications theory helps to view the university undergraduate students in South-East Nigeria as active users of the social media who seek to satisfy certain personal gratifications. If these gratifications include information related to epidemics, then these users are likely to be influenced in their knowledge of and reaction to epidemics by these health posts. Stated differently, the extent to which social media health posts would influence the beliefs and reactions of the university undergraduates in South-East Nigeria to health posts on epidemics would be dependent on the extent these students rely on social media for gratifying their need for health information. Thus, if they rely on social media for this gratification, what they know and do about epidemics is likely to be determined by the sort of information they are exposed to on social media.

Against the backdrop of the trends in the foregoing literature, and the gist of the theoretical basis for our study, we formulated two hypotheses which envisaged the outcome of our study.

Hypothesis one states thus:

If university undergraduate students in South-East Nigeria participate in the social media then they are likely to be exposed to health posts on epidemics.

Hypothesis two affirms thus:

If university undergraduate students in South-East Nigeria place value on social media posts, then they are likely to believe the gist of health posts on epidemics.

These hypotheses were subjected to statistical tests using Chi-square tests and the Pearson Product Moment Zero Order Correlation.

10. Method

Our study was designed as a survey. The area of study was South-East Nigeria. We intended this study as a regional study and this informed our choice of the South East region. This region is made up of five states: Abia, Anambra, Ebonyi, Enugu and Imo. It is populated by Igbo speaking people and dominated by Christian religion. The population is a diversified one comprising people of different callings – government workers, self-employed professionals, traders, artisans, students, among others. The region is home to five federal universities, five state universities and five private universities.

The population of our study comprises 134,088 university undergraduate students in South-East Nigeria. The distribution of this population is shown in Table 1.

Table 1: Sampling frame

S/N	Institution	Ownership	Student population
1.	Abia State University, Uturu	State	14, 456
2.	Anambra State University, Uli	State	16, 700
3.	Caritas University, Enugu	Private	5, 670
4.	Ebonyi State University, Abakaliki	State	12, 570
5.	Enugu State University of Science and Technology, Enugu	State	16, 239
6.	Federal University, Ndufu-Alike Ikwo, Ebonyi State	Federal	9, 343
7.	Federal University of Technology, Owerri	Federal	15, 290
8.	Gregory University, Okigwe	Private	4, 200
9.	Michael Okpara University of Agriculture, Umudike	Federal	22, 149
10.	Madonna University, Okija	Private	6, 100
11.	Nnamdi Azikiwe University, Awka	Federal	24, 650
12.	Paul University, Awka	State	6, 320
13.	Tansian University, Umuoya	Private	4, 370
13.	University of Nigeria, Nsukka	Federal	26, 347
	TOTAL		134, 008

Source: Registries of the institutions reflected

The sample size of 400 for the study was decided upon using Taro Yamane's formula for determining sample size : $n = N / (1 + N [e]^2)$.

Multi-stage sampling procedure was used to get at the study units. At the first stage, we used the table of random numbers to select three states out of the five states in the South-East region. The selected states were Anambra, Abia and Ebonyi States. At the second stage, also using a table of random numbers, we selected one federal university (Michael Okpara University of Agriculture, Umudike, MOUA, Abia State), one state university (Ebonyi State University, EBSU, Abakaliki) and one private university (Madonna University, Okija, Anambra State). At the third stage, two colleges were randomly picked from MOUA and two faculties each from EBSU and Madonna. From MOUA, College of Agricultural Economics, Rural Sociology and Extension and College of Management Sciences were selected. From EBSU, Faculty of Education and Faculty of Arts were chosen; while from Madonna Faculty of Management Sciences and Faculty of Law were picked. At the fourth stage, two departments were randomly selected from each college or faculty as follows: MOUA College of Agricultural Economics, Rural Sociology and Extension (Agribusiness & Management and Agricultural Economics departments); MOUA College of Management Sciences (Accountancy and Marketing departments); EBSU Faculty of Education (Educational Foundation and Guidance & Counseling departments); EBSU Faculty of Arts (English Language and Music departments); Madonna Faculty of Management Sciences (Business Administration and Marketing departments); and Madonna Faculty of Law (Property Law and International Law). At the fourth stage, 217 students were randomly selected from MOUA, 123 selected from EBSU, while 60 students were randomly selected from Madonna University to get the desired sample size of 400. The number selected from each university was arrived at by calculating the percentage share of the population of each school in the collective

population of the three schools studied (79, 777).

The instrument for data collection was the questionnaire. This was in five sections. Section I comprised questions seeking the respondents' personal data, Section II comprised questions on the respondents' social media participation, Section III had questions on the respondents' exposure to social media posts on epidemics, Section IV had questions relating to whether the respondents place value on social media posts, while Section V bore questions related to the extent the respondents believe and comply with social media posts on epidemics.

11. Results

Data collected from 400 respondents show that 55% of the respondents are females while 45% are males. Respondents between 16-19 years age range made up 12.5% of the sample; 67.3% were between 20 and 24 years; 14% were between 25 and 29, while 6.1% were 30 and above. These data imply that majority of the respondents were between 15 and 19 years; collectively, only 32.7% of the respondents fell out of this age bracket. So we can say that our respondents represent a very young population.

Our first research question sought to know who among our respondents participate in the social media.

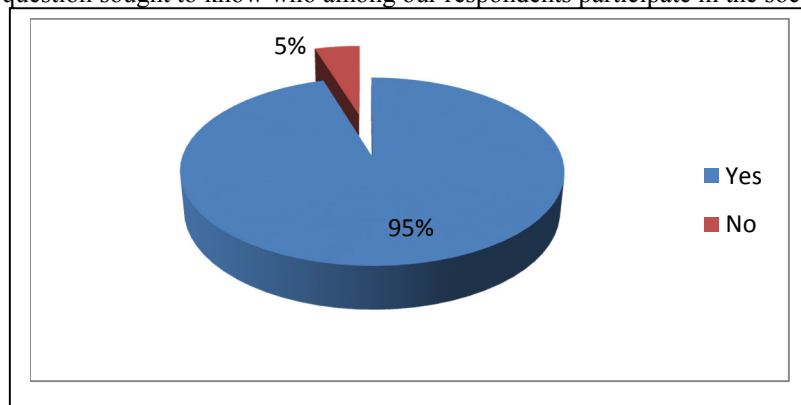


Figure 1: Access to the Internet

Figure 1 shows that 95% of the respondents have access to the Internet while 5% do not. This shows that Internet is accessible to most of the respondents, which in turn implies that most are potential participants in the social media. The ubiquity of Internet access amongst Nigerians, especially the youth, has been affirmed by statistics. The International Telecommunications Union (ITU), has it that between 2000 and 2011, Internet users in Nigeria grew from 200, 000 to 45,039,711 amounting to 0.1% and 26.5% of the population respectively. With this, the country has been named among the top 20 countries on the Internet. Nigeria is ranked 11th (by Internet World Stat) immediately after France which stands at 10th position with 50.29 million users (Amaefule, 2012). More recent data indicate that an upward movement in Internet penetration (Internet World Stat, 2014; Adetutu, 2014).

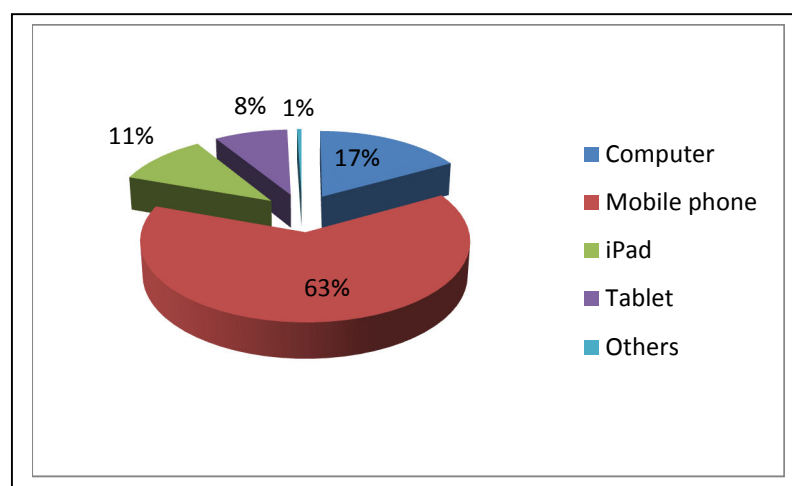


Figure 2: Main medium of internet access

Data in Figure 2 show that 17% of the respondents mainly use computer to access the Internet; 63% mainly use mobile phone, 11% mainly use iPad; 8% use tablet, while 1% use other platforms. These data indicate that mobile phone significantly constitutes the major medium of Internet access amongst the respondents. This is a reaffirmation of the belief that popularization of mobile telephony is the most important factor in the widespread Internet access in Nigeria (Adetutu, 2014). Furthermore, the fact that majority access the Internet mainly via mobile

phone suggests that this majority is in a good position to participate actively in social media given the mobile nature of their Internet access.

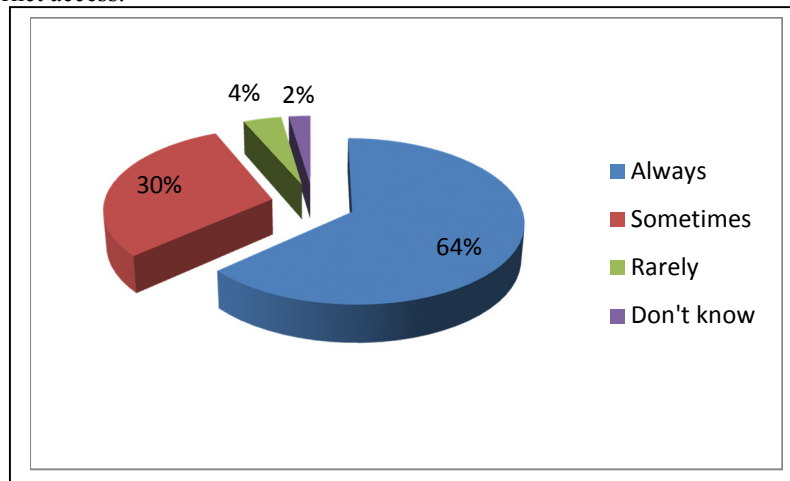


Figure 3: Social media participation

Figure 3 shows that 64% of the respondents always participate in social media, 30% sometimes participate, 4% rarely participate, while 2% don't know. These data indicate that majority of the respondents are constantly accessing social media platforms. Cumulatively, 94% of the respondents participate in social media either always or sometimes, while barely 4% participate rarely. The foregoing clearly portrays widespread access to and participation in social media amongst the respondents.

Table 2: Social Media platforms accessed

	Facebook	YouTube	Twitter	WhatsApp	Others
Yes	96.1% N = 368	48.8% N = 187	29.2% N = 112	85.1% N = 326	29.5% N = 113
No	3.9% N = 15	51.2% N = 196	70.8% N = 271	14.9% N = 57	70.5% N = 270
Total	100% N = 383	100% N = 383	100% N = 383	100% N = 383	100% N = 383

Table 2 shows that 96.1% of the respondents participate in Facebook; 48.8% participate in YouTube; 29.2% participate in Twitter; 85.1% participate in WhatsApp, while 29.5% participate in other social media platforms. It is observable here that Facebook constitutes the mostly accessed social media platform, which concurs with the existing statistics that shows that Facebook is the most popular social media site in the world (Internet World Stats, 2014); and that this popularity is equally evident among social media participants in Nigeria (Amaefule, 2012; Adetutu, 2014).

The second research question sought to establish the respondents' exposure patterns to Social Media health posts.

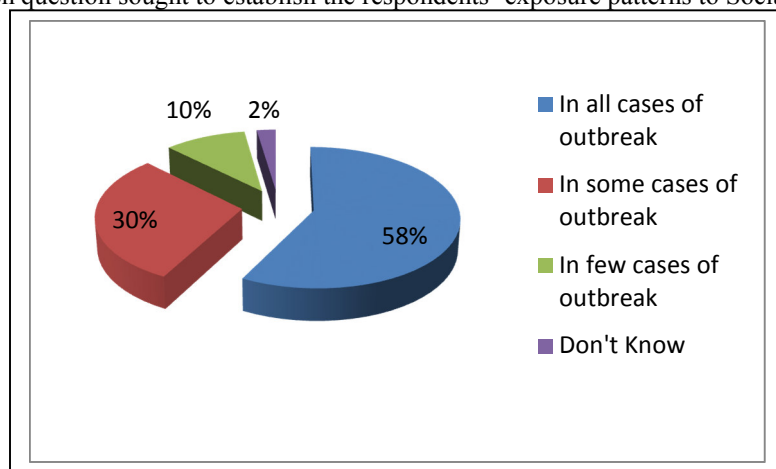


Figure 4: Exposure to posts on epidemics

Data in Fig 4 show that 58% of the respondents are exposed to social media posts on epidemics in all cases of outbreak; 30% are exposed to them in some of the cases of outbreak, 10% are exposed in few cases of epidemic outbreak, while 2% said they don't know. This suggests that a significant number is exposed to posts on epidemics at least in all cases and some cases of outbreaks. Health posts are a prominent and recurring content on social

media (Okoye, 2011); consequently, any active user of social media is potentially exposed to such posts.

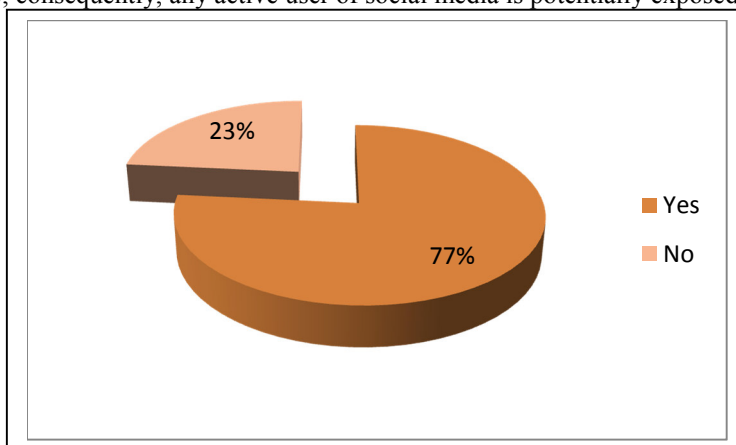


Figure 5: Attention to Posts on Epidemics

Data in Figure 5 indicate that 77% of the respondents pay attention to social media posts on epidemics while 23% do not. Thus, there is 54% difference between those that pay attention and those that do not; which shows that majority of the people exposed to these posts pay attention to them. The implication is that these users are not just passively exposed to posts on epidemics but are motivated to read them.

Table 3: Major Subjects of Interest on Posts on Epidemics

	Frequency	Percent
Symptoms	195	50.9
Mode of Infection	82	21.4
Safety measures	33	8.6
Cure	48	12.5
Others	13	3.3
No answer	12	3.1
Total	383	100.0

Data in Table 3 indicate that 50.9% of the respondents are mainly interested in symptoms when they read posts on epidemics; 21.4% are interested in mode of infection mainly; 8.6% are primarily interested in safety measures; 12.5% are mainly interested in cure; while 3.3% have their interest mainly on other aspects of the epidemics. However, 3.1% provided no answer here. Thus, symptoms featured most as the respondents' major subject of interest on epidemics – perhaps this is not unexpected given that people are usually apprehensive about contracting a disease whenever there is any epidemic and so are naturally interested in knowing the symptoms that indicate that one has become infected. This same apprehension could also explain the fact that mode of infection also featured prominently among the respondents' subjects of interest regarding epidemics.

Our third research question sought to establish whether our respondents placed value on Social Media Posts

Table 4: Value placed on social media posts

	Do posts on social networks contain relevant information?	Do posts on social networks contain accurate information?	Do posts on social networks contain clear and unambiguous information?	Do posts on social networks contain comprehensive information?
Always	62.1% N = 238	21.1% N = 81	26.1% N = 100	14.4% N = 55
Sometimes	27.2% N = 104	38.9% N = 149	50.7% N = 194	12.8% N = 49
Rarely	7.8% N = 30	36.3% N = 139	23% N = 72	70.5% N = 270
No Answer	3.1% N = 12	3.7% N = 14	4.4% N = 17	2.3% N = 9
Total	100% N = 383	100% N = 383	100% N = 383	100% N = 383

Table 4 shows that 62.1% of our respondents believe that social networks posts contain relevant information always; 27.2% think they contain this sometimes; 7.8% think it happens rarely; while 3.1% gave no answer. Similarly, 21.1% think that posts on social media networks do contain accurate information always; 38.9% think

they contain this sometimes; 36.3% believe that they have accurate information rarely; while 3.7% gave no answer. In the same vein, 26.1% think social network posts contain clear and unambiguous information always; 40.7% believe they contain this sometimes; 23% think they contain it rarely; while 4.4% gave no answer. Lastly, 14.4% think that posts on social networks always contain comprehensive information; 12.8% think they sometimes contain such; 70.5% believe they rarely do; while 2.3% did not give any answer. These data indicate that the respondents are more likely to trust social media posts when it comes to relevance and clarity of information than when it is on accuracy of information. Perhaps, the respondents have at the back of their minds the reality that social media posts are not subjected to gate keeping.

However, to have a more precise picture of how much value the respondents place on social media posts, the answers they gave to the four questions above were graded as follows: “Always” (3 points), “Sometimes” (2 points) and “Rarely” (1 point). Thus, respondents that scored a cumulative of 7 – 9 points were categorized as “Always Valuing Social Media Posts”, 4 – 6 points were categorized as “Sometimes Valuing Social Media Posts”, while 1 – 3 points were categorized as “Rarely Valuing Social Media Posts”. This is presented in the chart below.

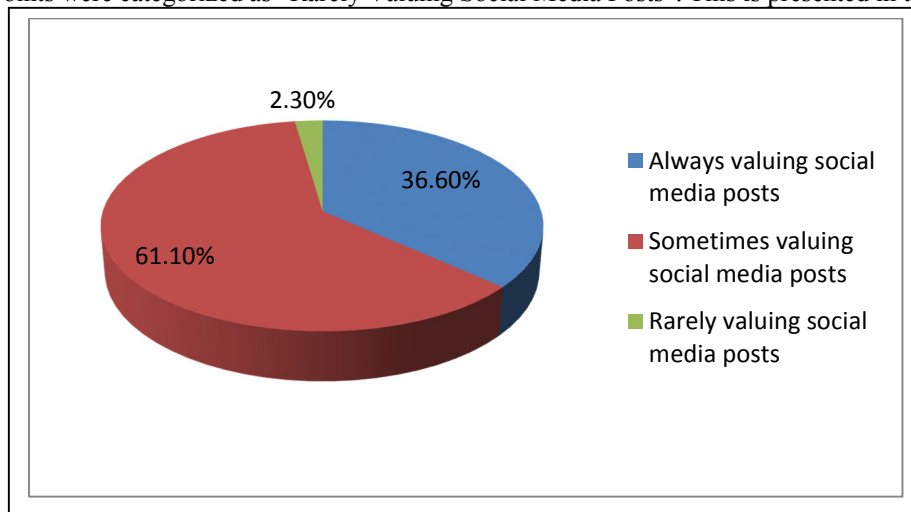


Figure 6: Value Placed on Social Media Posts (Cumulative)

Figure 6 shows that 36.6% of the respondents always value social media posts; 61.12% sometimes value them, while 2.3% rarely value them. These figures would suggest that generally, the respondents place some value on posts they see on social media. This perhaps is not unexpected given that majority of the respondents do participate in social media (figure 3) – and the fact that they have embraced social media, would suggest that they have some regard for its content. At least, going by the logic of the uses and gratifications theory, people would not embrace social media if there was nothing of value they were deriving from it.

Our fourth research question sought to know our respondents’ reactions to social media posts on epidemics.

Table 5: Believability and compliance with social media posts on epidemics

	Would you rely on social media posts for information on breakout of epidemics?	Are you likely to trust such social media information?	Would you feel safe taking measures recommended in such posts?
Yes	74.5% N = 247	64.6% N = 171	62.2% N = 104
No	25.5% N = 136	35.4% N = 212	37.8% N = 279
Total	100% N = 383	100% N = 383	100% N = 383

The data in Table 5 shows that 74.5% of the respondents would rely on social media posts for information on outbreak of epidemics, while 25.5% would not. Also, 64.6% are likely to trust such social media information, while 35.4% are not likely to trust such. Then, while 62.2% would feel safe taking measures recommended in such posts, 37.8% would not. As can be seen in Table 5, the respondents are more likely to rely on social media for information on epidemics than they are likely to trust such information, and they are more likely to trust such information than they would feel safe complying with what it recommends. In other words, the likelihood of reliance is higher than that of trust, while the likelihood of trust is higher than that of compliance. However, all three – reliance, trust and compliance are found, to varying degrees, to be likely among a majority of the respondents.

Our data were further analyzed using cross tabulation and zero order correlation.

Table 6: Cross-tabulation of social media participation and exposure to posts on epidemics

		Exposure to posts on epidemics			Total
		In all cases of outbreak	In some cases of outbreak	In few cases of outbreak	
Social Media Participation	Always	138 62.4%	82 71.9%	23 59.0%	243 65.0%
	Sometimes	67 30.3%	32 28.1%	16 41.0%	115 30.7%
	Rarely	16 7.2%	0 0.0%	0 0.0%	16 4.3%
Total		221 100.0%	114 100.0%	39 100.0%	374 100.0%

$X^2 = 13.979$; $df = 4$; $p < .007$

Table 6 is a cross-tabulation of two variables – respondents’ social media participation and their exposure to posts on epidemics. Data in the table indicate that 62.4% of the respondents who are exposed to posts on epidemics in all cases of outbreak participate in social media always; 30.3% participate sometimes, while 7.2% participate rarely. Also, 71.9% of those that are exposed in some cases of outbreak participate in social media always; 28.1% participate sometimes, while 0% participate rarely. Then, 59% of the respondents who are exposed to posts on epidemics in few cases of outbreak participate in social media always; 41% participate sometimes, while 0% participate rarely. Generally, these data suggest that the more the respondents participate in social media, the more they are exposed to posts on epidemics. This relationship is statistically significant at .007 level.

Table 7: Cross-Tabulation of Placing Value on Social Media Posts and Believability of Social Media Posts on Epidemics

		Believability of Social Media Posts on Epidemics		Total
		Yes	No	
Placing Value on Social Media Posts	Always	124 44.4%	16 15.4%	140 36.6%
	Sometimes	154 55.2%	80 76.9%	234 61.1%
	Rarely	1 0.4%	8 7.7%	9 2.3%
Total		279 100.0%	104 100.0%	383 100.0%

$X^2 = 40.696$; $df = 2$; $p < .000$

Table 7 is a cross-tabulation of two variables – extent of value placed on social media participation and believability of posts on epidemics. Data in the table indicate that 44.4% of the respondents who believe social media posts on epidemics always place value on social media posts; 55.2% of them sometimes place value on social media posts; while 0.4% rarely values such posts. Also, 15.4% of the respondents who believe social media posts on epidemics always place value on social media posts; 76.9% sometimes do this, while 7.7% rarely value such posts. Generally, these data suggest that the more the respondents place value on social media posts, the more they are likely to believe posts on epidemics. This relationship is statistically significant at .000 level.

Table 8: Zero order correlation matrix of social media participation, epidemics posts, valuation, believability and compliance variables

	1	2	3	4	5	6	7	8
1. Sex	1	-.291**	-.395**	.086	-.098	-.403**	-.046	-.025
2. Age		1	.354**	.166**	-.016	.342**	.084	-.354**
3. Level of study			1	-.074	-.145**	.570**	.366**	.078
4. Social media participation				1	-.080	-.106*	.454**	.003
5. Exposure to posts on epidemics					1	-.181**	.133**	.110*
6. Placing value on social media posts						1	.310**	.186**
7. Believability of posts on epidemics							1	.491**
8. Compliance with posts on epidemics								1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 8 shows that sex correlates negatively with age ($r = -.291$), level of study ($r = -.395$) and placing value on social media posts ($r = -.403$). Also, age correlates positively with level of study ($r = .354$), social media participation ($r = .166$) and placing value on social media posts ($r = .342$), and then negatively with exposure to social media posts ($r = -.016$). Level of study correlates negatively with exposure to social media posts ($r = -.145$) and positively with placing value on social media posts ($r = .570$) and believability of posts on epidemics ($r = .366$). Social media participation correlates negatively with placing value on social media posts ($r = -.106$) and positively with believability of posts on epidemics ($r = .454$). Exposure to social media correlates negatively with placing value on social media posts ($r = -.181$) and positively with believability of posts on epidemics ($r = .133$) and compliance with posts on epidemics ($r = .110$). Placing value on social media posts correlates positively with believability of posts on epidemics ($r = .310$) and compliance with posts on epidemics ($r = .186$). Lastly, believability of posts on epidemics correlates positively with compliance with posts on epidemics ($r = .491$).

11.1 Analysis of Research Questions

The first research question sought to determine the proportion of the university undergraduate students in South-East Nigeria who participate in the social media. To answer the research question, reference was made to Figures 1, 2 and 3. Figure 2 shows that almost all the respondents (95.3%) have access to the Internet which is a fundamental prerequisite for social media participation. In the same vein, data in Table 2 indicate that majority (63.4%) access the Internet mainly via mobile phone, meaning that their Internet access is mobile, and such offers some convenience for social media participation. However, it was Figure 3 that shows precisely that altogether 97.7% of the respondents access social media – with 63.4% accessing it always and 30% doing it sometimes. Then Table 2 indicates that Facebook by far is the most accessed social media platform, followed by WhatsApp, with YouTube and Twitter coming distant third and fourth. Our data, therefore, suggest a widespread Internet participation on the social media among university undergraduate students in South-East Nigeria.

The second research question sought to discover the extent to which the university undergraduate students in South-East Nigeria are exposed to health posts on epidemics. Here, reference was made to Figures 4, 5 and Table 3. Figure 4 shows that altogether 98% of the respondents are exposed to social media posts on epidemics – with 58% having this exposure in all cases of outbreak, 30% in some cases of outbreak, and 10% in few cases of epidemics outbreak. Figure 5 shows that majority (77%) pay attention to these posts while Table 3 shows that symptoms (50.9%) and mode of infection (21.4%) are aspects of epidemic posts that attract the respondents' attention mostly. Based on the foregoing, we can infer that undergraduate students in South-East Nigeria are exposed to social media posts on epidemics.

The third research question sought to determine the proportion of university undergraduate students in South-East Nigeria who place value on social media posts. To that effect, Table 4 and Figure 6 were referred to. Data in the table indicate that a good number of the respondents are likely to trust social media posts either always or sometimes – particularly in terms of the relevance, clarity and accuracy of information. However, when it comes to the comprehensiveness of information, majority of the respondents would rarely trust social media posts. However, Figure 6 presents a cumulative picture which indicates that 36.6% of the respondents always value social media posts; 61.2% sometimes value them, while 2.3% rarely value them. In other words, almost all the respondents would trust social media posts either always or sometimes. Consequently, our study suggests that university undergraduate students in South-East Nigeria generally place value on social media posts.

The fourth research question sought to ascertain the extent the reactions of university undergraduate students in South-East Nigeria, to suggestions of health actions against epidemics, was influenced by their belief in the gist of health posts on epidemics. Towards answering this question, reference was made to Table 5, which indicates that the respondents are likely to rely on social media for information on epidemics (74.5%); trust such information (64.6%); and feel safe complying with what it recommends (62.2%). Therefore, it may be admitted, in answer to the fourth research question, that the reactions of university undergraduate students in South-East Nigeria to suggestions of health actions against epidemics is, to a significant extent, influenced by their belief in the gist of health posts on epidemics.

11.2. Hypotheses Testing

The hypotheses formulated for this study were subjected to statistical tests. The first hypothesis holds that:

If university undergraduate students in South-East Nigeria participate in the social media then they are likely to be exposed to health posts on epidemics.

To test this hypothesis, we referred to Tables 6 and 8. Data in Table 6 (contingency table) suggest that the more the respondents participate in social media, the more they are exposed to posts on epidemics; in other words, there is relationship between the extent of participation in social media and the likelihood of exposure to posts on epidemics. This relationship was found to be statistically significant at .007 level. However, Table 8 (Pearson's Product Moment Coefficient) shows that there is no correlation between social media participation and exposure to posts on epidemics. In the face of these contradictory results, our study therefore failed to reject the null

hypothesis which holds that:

If university undergraduate students in South-East Nigeria do not participate in social media, they are unlikely to be exposed to health posts.

The implication here is that participation does not necessarily lead to exposure. Factors like opinion leadership and two-step flow of information might be channels of exposure to the contents of social media health post rather than participation in alone.

The second hypothesis suggests that:

If university undergraduate students in South-East Nigeria place value on social media posts, then they are likely to believe the gist of health posts on epidemics.

The null hypothesis to the contrary suggests that:

If university undergraduate students in South-East Nigeria do not place value on social media posts, they are unlikely to believe the gist of health posts on epidemics.

To test this hypothesis, we referred to Tables 7 and 8. Data in Table 7 (contingency table) suggests that, the more the respondents place value on social media posts, the more they are likely to believe posts on epidemics; in other words, there is significant relationship between the extent of value placed on social media posts and the likelihood of believing health posts on epidemics. This relationship is statistically significant at .000 level. Furthermore, Table 8 (Pearson's Product Moment Coefficient) shows that there is correlation between placing value on social media posts and believability of posts on epidemics ($r = .310$). Consequently, the null was rejected and our study supported the suggestion that university undergraduate students in South-East Nigeria who place value on social media posts are likely to believe the gist of health posts on epidemics.

By and large, our study established as follows:

- That there is a widespread Internet participation among university undergraduate students in South-East Nigeria;
- That these undergraduate students are exposed to social media posts on epidemics;
- That they generally place value on social media posts;
- That their reactions to suggestions of health actions against epidemics are, to a significant extent, influenced by their belief in the gist of health posts on epidemics;

12. Conclusion

The findings of this study, provides evidence to support the fact that social media has become an influential communicative force in today's Nigeria, its influence on health-related matters appears to have become a reality, particularly among the youth who constitute the majority of social media users. This influence, going by the position of the media system dependency perspective, would be even stronger in urgent, threatening and uncertain situations such as epidemic outbreak, as people are likely to be under pressure to relieve their uncertainty, hence their ready recourse to the media for information and guidance (Baran, 2010). This would possibly explain the remarkable influence which the salt therapy rumour, spread mainly through the social media, proved to have had on the Nigerian populace during the 2014 Ebola epidemic (Obukoadata, & Abuah, 2014). Consequently, there is an urgent need for health communicators and policymakers to begin to appreciate the place of social media in informing and influencing the health choices of people.

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