Information credibility on social networking sites: a study of a salt-and-warm-water anti-Ebola prank in Nigeria

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Abstract

This paper examined the credibility of information on social networking sites as a result of a prank on the networks to prevent the spread of the Ebola virus in Nigeria. It also explored how active users of the networks shared information about a salt-and-warm-water solution as a prevention for Ebola, which led to the loss of lives and many other people hospitalized as a result of excessive consumption of salt due to the joke. The use of salt and warm water to prevent Ebola was a deadly hoax that spread through social networks in Nigeria. By using a structured questionnaire as a method of data collection, this study surveyed some 114 active users of the social networks on the credibility of the salt-and-warm-water information on the networks. The findings indicated that although the majority of the respondents learnt about the deadly hoax on the social networks, it was not the result of the credibility of information on the networks that led some of them to use the salt solution. The majority of the respondents who used the salt solution identified interpersonal relationships as major motivators of their risky actions. The conclusion of the study is that because social networking sites hold the potential of disseminating information to a large number of people very quickly, it is risky to use the platform for jokes, especially on health related issues.
Keywords: information credibility, social networks, salt and warm water, Ebola prevention, exploratory, Nigeria.

1 Introduction

Health care messages in 'popular mass media' are said to be an important influence and resource in contemporary life [1]. On 7th August, 2014, a female

undergraduate student of the Federal University of Technology Akure, the capital of Ondo State in Nigeria, simply called Adesewa, sent a message to her friends via Blackberry Messenger (BBM) that the Ministry of Health had asked everyone to bathe with salt and warm water and drink some of it as a prevention for Ebola. Adesewa, after the message which quickly spread on the social networks and turned disastrous in the country, regretted sending the joke and apologised adding that she never knew the joke would go viral on the networks. She said all efforts to tell people that she was the one who started the prank failed and only her friend Funke who knew about the incident could believe her. Adesewa urged the general public to disregard the earlier message (joke) and forgive her [2].

Some people lost their lives and many others were hospitalized as a result of the excessive consumption of salt due to the joke. In Jos, the Plateau State capital in particular for example, two people were reported dead and 20 others hospitalized as a consequence of excessive salt intake [3].

This paper explored how social networking sites were used to disseminate information about the outbreak of Ebola virus in Nigeria, and how credible these messages were perceived to be especially information on prevention of the virus. Even though studies were done on how media were involved in influencing health issues especially in the developed countries and particularly in the area of media treatment of AIDS, there is gap in the area of 'new media' and health. Empirical studies of people's use of the Internet in the area of health are few and far between and a review must wait until more are available [1].

The popularity of social networks and the social media generally has rapidly increased. And with the increase in popularity of the social networks, a lot has changed. Every day, countless users converse through online communities, discussion boards, blogs and social networking sites. Consequently, connection and consumption of social networking messages have been growing remarkably. Globally, one out of every seven people has a Facebook account and close to four in five active Internet users visit blogs and social networking sites [4].

In social networks there are no standards for publishing, unlike in the conventional media, where no individual acts entirely alone, because of factors such as objectivity and gate-keeping that affect what ends up on the printed page or over the air [5]. Given that online credibility has become an international issue since individual users could access news and information from around the world, it has become necessary to examine the degree to which online information is perceived as credible by people around the world [6].

1.1 The Ebola incidence in Nigeria

The Ebola virus was imported into Nigeria by Liberian-born American Patrick Sawyer on 20th July, 2014. Sawyer arrived in Lagos from Lome but died five days after he was admitted into a hospital in Obalende when he showed Ebola virus symptoms. The Liberian-born American came into contact with 59 people in both the Murtala Mohammed International Airport and the hospital. Reports said that eight of the hospital contacts were quarantined at the Infectious

Diseases Hospital in Yaba. Later, some of the people Sawyer had contact with, including a female medical doctor, tested positive to the virus [7].

The scale, duration, and lethality of the Ebola outbreak coupled with the high fatality rate and the absence of a vaccine or cure, had generated a high level of public fear and anxiety and spread of rumours about the cure of the virus, especially in the West African countries. Another source of public misunderstanding, especially in affected areas, was from rumours on social media claiming that certain products or practices could prevent or cure the Ebola virus disease [8].

The end of an Ebola virus disease outbreak in a country, according to the World Health Organization (WHO) recommendations, can be declared once 42 days have passed and no new cases have been detected. The 42 days represent twice the maximum incubation period for Ebola (21 days). This 42-day period starts from the last day that any person in the country had contact with a confirmed or probable Ebola case. On October the 20th, Nigeria reached that 42-day and WHO declared the country free of Ebola transmission [9]. Before the free transmission declaration by the WHO, the virus had killed eight (8) persons in Nigeria.

2   Credibility of online information

The result of a 2009 study which examined politically interested online users in South Korea, how they perceived the traditional news media, their online counterparts and independent web-based newspapers, as well as exploring which factors influenced credibility of online sources during the 2004 general election in the country, indicated that independent web-based newspapers were considered more credible for political information than either traditional media or their online counterparts. The findings showed that majority of the respondents reported that they were more involved in politics since becoming Internet users. Independent web-based newspapers were the main information tool and a reliable resource for online political news users in Korea [6]. It is interesting to note that despite the online sources' lack of the journalistic norm of objectivity and gate-keeping, the finding showed a shift in media credibility from traditional media sources to Internet sources as online users gave a higher credibility rating to independent web-based news sites than traditional media.

In 2010, survey studies of those who used blogs for information about the war in Iraq were compared to investigate the degree to which judgments of credibility, reliance, demographics, and political characteristics of war blog users have changed between 2003 and 2007. The purpose of the study was to compare changes from 2003 to 2007 in blog credibility and blog use for information about the war in Iraq. The first study was conducted from 23rd April to 22nd May 2003, and the second exactly four years later. The study found that in both 2003 and 2007, blog users judged blogs as more credible sources for war news than traditional media and their online counterparts. The study also found that different types of blogs were rated differently in terms of credibility in 2007 with military and war blogs rated the most credible and media blogs being judged the

lowest in credibility [10]. Given that these studies explored credibility of online sources among politically online users in South Korea and the other compared blog credibility and blog use for information about the war in Iraq, provide a gap to study credibility of online sources during national health emergency crisis.

Another study was carried out in 2003 to describe adolescent sources of reproductive health information and perceived credibility of the sources in Tanzania. The Tanzanian study found that mass media ranked first as sources of reproductive health information, followed by teachers and health workers. Health workers ranked first in credibility followed by parents, while credibility rating for media was low. The study also indicated that religious leaders and respondents' friends played a rather minor role as sources of reproductive health information, and their credibility ratings were also low. The study concluded that mass media were the most frequent sources of reproductive health information for primary school adolescents, but parents and health workers were regarded as more credible sources [11]. The Tanzanian study centred on perceived credibility of health information in traditional mass media thereby also providing the opportunity to study credibility of information on social networking sites during national health emergency crisis as in the Ebola case in Nigeria.

2.1 Theoretical background

This paper adopted diffusion of innovation theory as theoretical background. Diffusion of innovation theory has to do with the study of the social process of how innovations (new ideas, practices, objects, etc.) become known and are spread throughout a social system. The pace at which 'new ideas are being invented, developed and spread' makes it necessary to look at how the new ideas affect the existing social order [12]. Some communication scholars argued that media influence on receivers isn't always direct, there are opinion leaders who use their exposure to influence people as two-step or multi-step flow theory argued, (see, for example, Kperogi [2]). The two-step flow theory was about how an individual receives information and passes it along others while the diffusion process concentrates on the final stage of the adoption or rejection of an innovation. One of the central generalizations about the diffusion theory was that most people get most of their news directly from a medium (television, radio, newspaper, social networks, etc.) rather than from other people and that a combination of mass media and interpersonal communication is the most effective way of reaching people with new ideas and persuading them to utilize these innovations [13]. The novelty to be transferred does not have to be technological. Everett Rogers, a leading advocate of the theory had successfully applied diffusion theory in his field experiments in Tanzanian population communication campaigns, where birth control ideas were the innovations to be transferred [14].

3   Methodology

The research methodology adopted in this study is in the realm of exploratory research the area popularly known amongst scholars as the region of little known phenomena. The study used a survey questionnaire to find out how active users of social networking sites reported salt-and-warm-water information as Ebola prevention and the extent to which people accepted the information on social networks as credible information. A questionnaire survey was used in study of sources of reproductive health information and perceived credibility of these sources in Tanzania by Masatu *et al.* [11]. The networks explored in the study were Facebook, Twitter, Whatsapp, BBM and LinkedIn. Others include Google+, 2go, Wechat and Viber.

Participants were active users of social networking sites who were connected to the sites during the period of the Ebola incidence in the country and are within the age bracket of 17–40 years. The survey instrument used in this study was close ended questionnaire. The instrument was administered by the researcher and three research assistants and the data was collected within the period of four months (September–December 2014).

3.1 Data preparation and analysis

SPSS version twenty was used to conduct analyses in this study. Response frequencies and percentages were conducted followed by z-test to explored variations in respondents' preferences for some selected variables with 0.05 alpha levels as criteria for significance.

3.1.1 Research questions

The study explored the following research questions:
1. How did people share information about salt-and-warm-water as Ebola prevention mechanism on social networks in Nigeria?
2. To what extent did people accept salt-and-warm-water as Ebola prevention on social networks as credible information?
3. How do people verify credibility of information on social networking sites?

4   Findings

Out of 114 respondents who participated in the study, 73.5% said they learnt about existence of the Ebola virus in the country through social networking sites, 15.9% through radio, 4.4% through relatives and friends (interpersonal communication) and 3.5% and 2.7% identified newspapers and television as their source of information respectively. However, 63.2% of the respondents who learnt about the Ebola virus outbreak through social networking sites identified Facebook as their source of information. Whatsapp has 25.0% of the respondents, BBM 6.6% and Twitter, Google+, 2go and other networks (such as Yahoo Messenger, etc.) not mentioned in the study, have 1.3% each.

One hundred and twelve respondents representing 98.2% said they knew about the salt-and-warm-water information as a prevention of Ebola. The majority of the respondents, 75.9%, identified social networks as the source of their information, 14.3% said they received the information through friends and relatives, radio has 8.0%, newspapers and other means (such as seminars and workshops) not included in the study have 0.9% each. More so, 56.2% of the respondent who learnt about the salt-and-warm-water joke as a cure for the virus said they shared the information with others. The respondents identified social networking sites and interpersonal channels as the two channels they used in sharing the information with 81.7% & 18.3% respectively. Using the nine social networking sites examined in this study, 59.2% of the respondents who shared the information via social networks said they shared the joke through Whatsapp, 30.6% identified Facebook, BBM has 6.1% and Google+ and other networks 2.0% each.

Table 1 provided information on respondents who shared the salt-and-warm-water joke by sex. To compare column proportions a z-test was carried out, each subscript letter denotes a subset of sex of the respondents' categories whose column proportions do not differ significantly from each other at the 0.05 level.

More than one quarter of the respondents who participated in the study, representing 28.9%, said they either drunk or took a bath with a salt-and-warm-water solution as a prevention of Ebola and they identified what motivated them to do that. Instruction from a parent motivated 15 respondents representing 45.5%; persuasion by a friend, 10 respondents representing 30.3% and information from social networks motivated only 8 respondents representing 24.2%.

Table 1:   Respondents who shared the salt-and-warm-water Ebola prevention joke by sex.

			Sex of the respondents		Total
			Male	Female	
Yes		Count	34_a	26_b	60
			56.7%	43.3%	100.0%
No		Count	41_a	13_b	54
			75.9%	24.1%	100.0%
Total		Count	75	39	114
			65.8%	34.2%	100.0%

Figure 1 identified the credibility of the salt-and-warm-water information as measured amongst the respondents where less than 6% said they received the information as very credible information and more than one-third said the information was not credible to them while almost 20% said they considered the message as not very credible information.
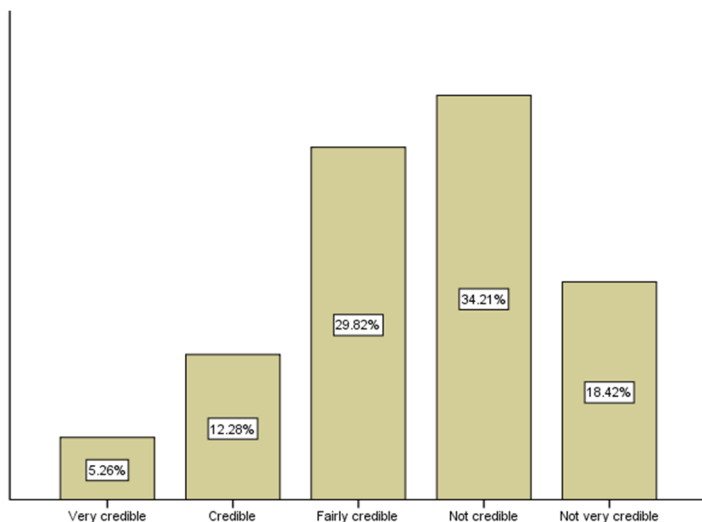
Figure 1:   Perceived credibility of salt-and-warm-water information amongst respondents.

The 114 respondents were also asked whether they verify the credibility of information from social networking sites, 86 respondents representing 75.4% answered in the affirmative. Methods of verifying information from the networks were also identified by the respondents who claimed verifying information from the social networks. Forty-point-seven per cent said they verify credibility of information on the networks through conventional media that is through getting the same information from conventional media such as radio, television and newspapers. Some other respondents 25.6% said they accept information from the social networks as credible if other credible online media (such as credible online newspapers) reported the same information. However, 24.4% said they consider any information on the social networks as credible if many people shared the same information on the networks. Credible sources attributed to information on social networks served also as yardstick for accepting information as credible on the networks to 8.1% of the respondents. Only one respondent representing 1.2% identified some other means (such as through parent and opinion leaders) of verifying information from the networks.

Table 2 shows the respondents' method of verifying information by level of education. Respondents with first school leaving certificate verify information from the networks through number of people that shared information on the networks and through reporting the same information by other credible online media. The finding has shown that respondents in this category might be young and therefore more active on the social networks or not educated enough to verify information from conventional media or from other means identified in the study.

Table 2: Respondents' methods of verifying information from social networks by education.

Method	Education of the respondents				
	First School Leaving certificate %	Junior/ Secondary Certificate %	OND/NCE %	Bachelor/ Higher National Diploma %	Postgraduate Certificate %
Through getting the same information from conventional media	0.0	28.6	25.7	25.7	20.0
Through sources attributed to the information	0.0	28.6	28.6	28.6	14.3
Through number of people that shared the information	4.8	14.3	23.8	47.6	9.5
	13.6	18.2	4.5	40.9	22.7
Through reporting the same information by other credible online media	0.0	0.0	0.0	100.0	0.0
Others (parent, friends, etc.)					

5 Discussion and conclusion

Some of the major issues that complicated efforts to fight the spread of Ebola in Nigeria before the WHO declaration of the country as free from Ebola transmission on October the 20th, were fear and misinformation especially on social networking sites. Findings in this study indicated Facebook with 63.2% Whatsapp 25.0% and other social networking sites that played a critical role in the quick dissemination of information about the outbreak of the virus and because the platforms lack standard for publishing [5], rumours and misinformation on taking preventive measures also spread quickly through the networks which turned disastrous and further complicated the fight against the spread of the Ebola virus.

For example, rumours and false information can quickly affect thousands on social networks. During the confusion following the bombing of the 2013 Boston Marathon in the United States where would-be online sleuths misidentified a missing college student as a primary suspect in the case. The person's name ended up trending nationally on Twitter, though he had nothing to do with the attack. Research scientists who study how people communicate on social networks named people who spread false information on the networks the 'infected'. But research also showed that if a piece of information is highly surprising or comes from a trusted source, people are more likely to spread it. A 2011 University of Michigan study on five rumours on Twitter as cited in found that 43% of the users studied seemed to believe the false information they were posting [15].

The findings of this study have also indicated that although the majority of respondents learnt about the salt-and-warm-water Ebola prevention rumour on

the social networks, it was interpersonal relationships, that is, instruction from parents and persuasion by friends that motivated the majority of those who used the salt solution as a prevention for Ebola to accept the risky information. Only (8) respondents representing 24.2% identified credibility of information from the networks as their major motivator. Experts said people are more likely to trust information that comes from people they know. Ceren Budak, a researcher who studies online communications at Microsoft Research said: 'When your friends say something to you, it's not just the information itself. It's the fact that 'Oh, he's my friend and I trust him. Therefore I trust the piece of information', [15]. However, this is also consistent with multi stage flow of information used in the diffusion theory (see for example Severin and Tankard [13]).

This study also showed that more than two-third of the respondents verify credibility of information they get from the networks. This has indicated that majority of the respondents are not passive receivers of any information from the networks but actively participate and verify credibility of information before believing or putting it to practice. According to Geoffrey Njoku, a communication specialist with UNICEF Nigeria, the outbreak of Ebola coupled with spread of salt solution deadly hoax through social media, led Nigerians to urgently seek information on how to prevent the disease on U-Report, a text-based communication platform developed by the UNICEF. Many people asked for and contributed on Ebola- causes, symptoms, treatment, how to prevent it and subscription on the U-Report platform increased from 19,000 to 63,000 in the month after the outbreak [16].

In conclusion, this study has indicated that 'infected' social networking sites users (those who spread rumours) who may have conjure up bogus info on the sites could affect millions of people, as the case was in the salt solution hoax as prevention of Ebola on the networks in Nigeria. There are millions and millions of people on these social networks (4), most of them in some cases without reliable information, but they're still going to keep talking [15]. Therefore the conclusion of the study is that because social networking sites hold the potential of disseminating information to large number of people very quickly, it is risky to use the platform for jokes, especially on health related issues.

5.1 Implication for practice

Hence, findings in this study have shown that social networking sites could spread rumours and misinformation during health emergency crises, dissemination of quick, and accurate information as widely as possible can be the only way to manage the spread of falsities. The Centers for Disease Control and Prevention (CDC), in the US seemed to have achieved that after the outbreak of the Ebola virus in the country. The Centre sent constant updates on Ebola on its website and social media accounts [15]. In Nigeria, although WHO has highly praised strong public awareness campaigns as one of the key roles played in successful containment of the Ebola outbreak in the country, early engagement of relevant agencies to combat spread of rumours and false information on social networking sites could have saved the countries from the disastrous outcome of the salt-and-warm-water hoax. As such, relevant heath agencies in the country

should have capacity to develop, implement, and disseminate successful intervention and prevention strategies on the social networks during heath emergency crises in the future.

5.1.1 Limitations of the study

One of the limitations of this study is the fact that the findings cannot be used for generalization because of its exploratory orientation. Another limitation has to do with the number of female respondents that participated in the study, 39 females representing 34.2% out of the 114 respondents were interviewed.

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