

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/354541535>

Effect of a social media-based counselling intervention in countering fake news on COVID-19 vaccine in Nigeria

Article in *Health Promotion International* · September 2021

DOI: 10.1093/heapro/daab140

CITATIONS

2

READS

762

7 authors, including:



Felix Talabi

Redeemer's University

23 PUBLICATIONS 75 CITATIONS

[SEE PROFILE](#)



Joel Chinedum

University of Nigeria

13 PUBLICATIONS 50 CITATIONS

[SEE PROFILE](#)



Amaka B Ikechukwu-Ilomuanya

University of Nigeria

15 PUBLICATIONS 159 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



An appraisal of social media use in managing clergy-laity relationship in anglican dioceses of enugu province [View project](#)



Article [View project](#)

Effect of a social media-based counselling intervention in countering fake news on COVID-19 vaccine in Nigeria

Felix Olajide Talabi ¹, Ikechukwu Peter Ugbor²,
Moyinoluwa Joseph Talabi³, Joel C. Ugwuoke², David Oloyede⁴,
Ayodeji Boluwatife Aiyesimoju⁵, and Amaka B. Ikechukwu-Ilomuanya^{6,*}

¹Department of Mass Communication, Redeemer's University, Ede, Osun, Nigeria, ²Department of Mass Communication, University of Nigeria, Nsukka, Enugu State, Nigeria, ³Department of Religions and Peace Studies, Lagos State University, Ojo Lagos, Nigeria, ⁴Department of Mass Communication, Adeleke University, Ede, Osun, Nigeria, ⁵Department of Mass Communication, Joseph Ayo Babalola University, Ikeji-Arakeji, Osun, Nigeria and ⁶Department of Education Foundations, University of Nigeria, Nsukka, Enugu, Nigeria

*Corresponding author. E-mail: amaka.ikechukwu-ilomuanya@unn.edu.ng

Summary

The aim of this study was to understand the impact of counselling in countering fake news-related COVID-19 vaccine. We conducted two separate experiments. In the first experiment, we exposed the treatment group to fake news on COVID-19 vaccine through a WhatsApp group chat while the control group was not. We then tested the effectiveness of such fake news on their perception. In our second experiment, we exposed the treatment group to a social media-based counselling intervention wherein we attempted to counter the earlier fake news on COVID-19 vaccine which they were exposed to. We found that respondents who were exposed to fake news reported greater negative perception about COVID-19 vaccine than their counterparts in the control group. We also found that as a result of the counselling intervention, the respondents in the treatment group reported more positive perception regarding COVID-19 vaccine while their counterparts in the control group who were earlier exposed to fake news on COVID-19 did not significantly change their perception. This study has highlighted the importance of counselling in countering fake news within the context of health promotion. This approach is yet to receive significant attention in literature, especially from developing countries.

Key words: COVID-19; counselling; fake news; social media; vaccine

INTRODUCTION

In recent times, fake news has become one of the social problems that distort effective information flow. Nearly every aspect of human life that depends on accurate and

timely information has been significantly impacted by fake news. For examples, spheres of human life such as politics, advertising, security, health promotion, among others have experienced the sharing of fake news with a

possibility to impact negatively on the quality of information that people have. Wogu avers that fake news has (Wogu, 2021) continued to fester and that the situation is made worse by social media platforms. The prevalence of fake news can largely be attributed to the increasing access and use of Internet-based media. For example, social media platforms are difficult to regulate, thus allowing people to post information that is fake, unverified and untrue about an issue.

Fake news has serious negative consequences on society. For example, when fake information is shared regarding security issues, it could lead to an outbreak of law and order. Additionally, when news is shared about a health issue, it could make people develop the wrong opinion about the health issue. This will also make them engage in harmful behaviour as a result of fake news. Pate *et al.* in a study reported that (Pate *et al.*, 2019) fake news has risen to become a notorious social evil that requires urgent intervention from the government in terms of legislation. Pate *et al.* add that the impact of fake news on society is too huge to be ignored. Pulido *et al.* regard fake news as a public (Pulido *et al.*, 2020) health issue that is harmful to the lives of those who are exposed to it. From this perspective, fake news is regarded as posing a serious public health hazard to those who have access to it. The World Health Organization has identified fake (World Health Organization, 2020) news as one of the primary problems that makes information sharing on COVID-19 difficult. The global health body warned that ‘infodemic’ (too much information on the virus, some of which are not true) constitutes a serious problem in health promotion within the context of COVID-19.

The outbreak of COVID-19 resulted to the spread of fake information about the virus. False information about the virus range from the realness of the virus, conspiracy theory from the developed countries against the less developed ones, the vulnerability of less developed countries to the virus, the virus does not affect the poor, among several other information that is completely untrue about the virus. Apuke and Omar in a study reported that fake (Apuke and Omar, 2021) news sharing about COVID-19 is fuelled by factors such as information seeking need, altruism, socialization need as well as pass time. Zhou *et al.* in a study reported that the quality (Zhou *et al.*, 2020) of information on COVID-19 was significantly related to the number of infections. The implication here is fake news about COVID-19 could negatively impact the fight against the pandemic.

STUDY OBJECTIVE

The objective of this study was to test the effectiveness of a social media-based counselling intervention in countering the impact of fake news on COVID-19 vaccine among social media users in Nigeria. The impact of counselling was determined by perception as well as behavioural intention towards COVID-19 vaccine among respondents who took part in the study.

OVERVIEW OF FAKE NEWS

Although there is no generally accepted definition of fake news, it can be regarded as information that is false or inaccurate usually presented as true. Typically, such information is presented as though it is an accurate account of the issue at hand. Lazer *et al.* define fake news as information (Lazer *et al.*, 2018) that is fabricated in manners that mimic news media content in form but and which overlaps with information disorders like misinformation or misleading information. According to Muigai, fake news describes (Muigai, 2019) any false information which is purposely designed to be completely misleading, normally spread through online social media, but sometimes its path to mainstream traditional. Muigai adds that other names for fake news include alternative truth, disinformation and misinformation. Jaster and Lanius hold the view that fake (Jaster and Lanius, 2018) news has two basic features. The first being that fake news lacks truth while the second being that fake news lacks truthfulness. Jaster and Lanius add further that fake news lacks truth. After all, it reveals the absence of truth because it is either false or misleading. Additionally, they hold that fake news reveals a lack of truthfulness because it is propagated with the desire to deceive the target receivers. In the views of Allcott and Gentzkow, fake news can be defined (Allcott and Gentzkow, 2017) as information which intentionally and verifiably untrue and with a propensity of misleading readers. Fallis sees fake news (Fallis, 2015) as a special category of disinformation. The point to make here, therefore, is that any information that is unverified, untruthful and false can be regarded as fake news. In all the definitions above, the authors agree that inaccurate information is simply fake news. For example, when a person posts information that COVID-19 is meant to inject microchips into the bodies of Africans, it can be classified as fake because there is no truth in it.

Fake news is very harmful to society because when people are exposed to false information, they will very likely make decisions based on such information with a corresponding possibility of negative consequences. Pate

et al. say that fake news hurts politics (Pate *et al.*, 2019). The problem with the assertion of Pate *et al.* is that it was not supported by empirical evidence. Even though fake news sharing has grown to become a social problem, research on its impact is limited. Higgins in commenting on the [(Higgins 2016), p. 9] growing phenomenon of fake news notes that the term 'post-truth' explains not only the growth in the frequency of false information circulation but equally a world where truth is no longer an expectation. Generally, literature (Apuke and Omar, 2021; Nagi, 2018; Talwar *et al.*, 2019) on fake news focused more on fake news sharing than its effect. This is a gap that the current study has addressed.

COVID-19 VACCINE

Towards the end of 2019, COVID-19 broke out in Wuhan, a city in China. The virus quickly spread to other parts of China and eventually, the world. The World Health Organization after examining the severity of the virus declared it a global pandemic. The number of confirmed cases continued to grow in different countries while some persons lost their lives in the process. Being a new virus, no vaccine could provide body immunity for it (Olijo, 2020). The race for the development of a virus quickly continued and eventually, some vaccines have been developed and approved for emergency use.

The World Health Organization says that the first mass vaccination (World Health Organization, 2021) programme began in early December 2020 and as of 15 February 2021, up to 175.3 million vaccine doses have been administered to people. An Emergency Use Listing (EUL) has been given for the Pfizer COVID-19 vaccine (BNT162b2) on 31 December 2020. On 15 February 2021, WHO equally issued EULs for two versions of the AstraZeneca/Oxford COVID-19 vaccine, manufactured by the Serum Institute of India and SKBio. Although Nigeria is yet to take the delivery of any COVID-19 vaccine, it is essential to prepare the minds of the general public so that they will accept the vaccine when doses are eventually shipped to the country. This is particularly important because evidence in literature (Jegede, 2007; Yahya, 2007; Nasir, 2014) shows that Nigeria has a long history of vaccine hesitancy and even outright rejection. With such evidence, there is no guarantee that COVID-19 vaccine will be accepted when finally made available. This makes it imperative to come up with ways of ensuring that COVID-19 vaccine gains acceptance.

COUNSELLING IN THE SOCIAL MEDIA ERA

Counselling is a communication approach that assumes a persuasive approach to convince people to behave in a particular way. People who specialize in counselling are called counsellors. As specialists, counsellors identify an issue, the people involved and attempts to convince them on why they should behave in a particular manner or change their perceptions about an issue. Syahniar says that counselling is (Syahniar, 2017) one of the important strategies for guiding peoples' behaviour and thought process.

Over the years, the impact of counselling has been examined. Boot *et al.* carried out an experiment to (Boot *et al.*, 1994) determine the impact of counselling on health promotions. To conduct the study, the researchers compared patients who received normal advice from their general practitioner regarding severe challenges like relationship problems, depression and anxiety with those who received counselling from qualified counsellors that were working within the primary health care context. Their result showed that patients who received counselling were satisfied with their treatment and more reported feelings of recovery than those who received only advice from non-counselling professionals. The implication is that counselling could be an effective tool for health promotion. Matliwala carried out a study to examine (Matliwala, 2017) the effect of counselling on mental health. The sample size for the study was 30 students. The researcher made use of a structured questionnaire as well as an unstructured interview as instruments for data collection. The result of the study showed that counselling was an important therapy for students' mental health because it made them become more relaxed and focused with less mental stress. Al Sayah *et al.* carried out a study wherein they examined (Al Sayah *et al.*, 2014) the relationship association between health promotion counselling (HPC) and health-related quality of life and the use of health care services among patients with chronic conditions. The researchers made use of a survey research design involving a sample of 1615 who had chronic health challenges. The result of the study showed that there is a significant relationship between HPC and important health outcomes. This outcome again showed that counselling could serve as an important tool for health promotion. However, studies (Ezeah *et al.*, 2020; Gera & Ugwu, 2020; Gever & Ezeah, 2020; Odi *et al.*, 2020; Olijo, 2020; Onuora *et al.*, 2020; Yang, *et al.*, 2020; Zhong 2020; Young *et al.*, 2021) on COVID-19 are yet to consider counselling as an important tool for health promotion.

Before the emergence of social media platforms, counselling was largely done on a face-to-face basis where the counsellor interacts physically with the clients. However, the emergence of social media platforms such as Facebook, WhatsApp, Twitter, among others now offers a virtual environment where counsellors can interact with their clients. Creaner avers that social media (Creaner, 2015) platforms offer great opportunities for counselling to explore and achieve maximum results. Meyers posits that counsellors have little [(Meyers 2018), p. 1] or no choice but to accept social media in their practice if they want to satisfy the 21st clients. According to Meyers, without social media, counsellors risk being disconnected from their clients. Hunt *et al.* noted that counsellors (Hunt *et al.*, 2018) have a role to play in combating the menace of fake news that is currently ranging around the world. It should be noted that the critical point to note here is that counselling and social media are significantly related whether in terms of using social media as platforms for counselling or counselling people on how to make good use of social media.

THEORETICAL FRAMEWORK AND HYPOTHESES FORMULATION

In this study, we made use of two theories. They are Cognitive Dissonance Theory (CDT) and the Theory of Planned Behaviour (TPB). Leon Festinger suggested CDT in 1957 to explain how people react to new cognitions as well as how perceptions are formed. The theory is made of three basic assumptions that also serve as the tenets of the theory. The first tenet assumes that human beings are typically sensitive to disharmony between actions and beliefs. Within this context, the theory argues that people usually take note when they are taking actions that are against their beliefs, attitudes or views. The implication here is that human beings have inbuilt alarms which remind them of inconsistencies (Festinger, 1957). When this is explained from the perspective of the current study, people who hold the view that COVID-19 vaccine is harmful or not beneficial will be reminded of inconsistency as soon as they are exposed to information encouraging them to take the vaccine.

The second assumption, of CDT, posits that taking cognizance of an internal conflict will lead to dissonance, and will compel a person to look for ways of addressing the dissonance. The degree of dissonance differs based on the value a person places on belief, attitude or principle together with the extent of disagreement between a person's behaviour and this belief. From the

perspective of the current study, a person who believes that COVID-19 vaccine is beneficial may face a dissonance situation and take steps to resolve it when he or she is exposed to fake news on the vaccine. Finally, the theory argues that a person will address dissonance by applying three strategies. The first one is a *change in beliefs*; when occurs when a person shifts position from the previous opinion to a current one. In this study, it may mean a change in belief that COVID-19 is beneficial. The second is *change*; when occurs when an individual takes steps to support the change in belief and finally, *change in perception of action*; which takes place when a person perceives his or her action based on the message received (Festinger & Carlsmith, 1959). In this study, the argument is that social media-based counselling intervention will change the perception that social media users have regarding COVID-19 vaccine. This assumption is hypothesized below:

H1: Social media users who are exposed to fake news on COVID-19 vaccine will report a more negative perception regarding a COVID-19 vaccine than those who are not.

H2: Social media users who are exposed to a counselling intervention will report a more positive perception regarding a COVID-19 vaccine than those who are not.

One aspect that was not covered by CDT is the behaviour dimension. To do this, the researchers made use of TPB. Ajzen suggested the TPB in 1986 to explain human behaviour. Accordingly, the theory holds that the intention which a person has to carry out an action is influenced by intention concerning such a behaviour. Going forward, the theory holds that three variables such as attitude concerning an action, subjective norms and perceived behavioural control (PBC) predict behaviour intention (Ajzen, 1991, 2008). Ajzen describes intention as a (Ajzen, 1985) person's preparedness to carry out a specified behaviour. Attitude defines the evaluation that a person makes concerning the behaviour to be carried out. Such an assessment may be positive or negative regarding the action to be carried out. From the perspective of the current study, this refers to the attitude that a person has regarding COVID-19 vaccine. Subjective norms defines the views a person's peers have regarding an issue. For this study, it explains the opinion that a person's close associates have regarding COVID-19 vaccine. PBC defines how less demanding or demanding it is for a person to carry out an action. When this variable is explained from the perspective of this study, it means how difficult or easy it is for social

media users to make themselves available for COVID-19 vaccination. Based on the TPB, we hypothesized:

H3: Social media users who are exposed to a counselling intervention will report a more positive behavioural intention regarding a COVID-19 vaccine than those who are not.

METHODOLOGY

To conduct this study, the researchers made use of a quasi experimental design. The choice of experimental design was because it assisted the researchers to achieve the objective of the study. Researchers (Ogbonne, 2019; Ale, 2020; Kingdom, 2020) agree that the choice of a study design is typically considered based on what a study seeks to achieve. Therefore, there were two different experiments that were combined for the study.

Experiment 1

In the first experiment, the researchers exposed the study participants to fake news on COVID-19 vaccine. The respondents were exposed to the information through a group WhatsApp that was created for the purposes of the study. It should be noted that it took 2 weeks to assemble the participants. The experiment lasted for 2 weeks. The common theme about the fake news on COVID-19 vaccine included that the vaccine can kill, the vaccine is a way of injecting micro chips into Africans and the vaccine is not effective among others. After the respondents were exposed to the fake news, then this gave room for the second experiment. Altogether, a total of 470 respondents took part in the first experiment. It is important to clarify here that before the experiment, the respondents completed a questionnaire to determine their perception as well as behaviour intention regarding COVID-19 vaccine.

Experiment 2

In the second experiment, the researchers exposed 235 of the respondents to a social media-based counselling intervention. This means that there was another WhatsApp group for the second experiment. In this experiment, the respondents were counselled on the importance of COVID-19 vaccine as a way of combating the spread of the virus. Respondents were told that the vaccine was safe and needed to protect them against COVID-19.

Measuring effect

We measured the effect of our intervention in three ways. First, before the first experiment, we asked all the respondents to fill a questionnaire regarding their views on COVID-19 vaccine. In the second experiment, we tested the respondents to fill another questionnaire with the same items after the first experiment. Finally, after the second experiment, we asked both the treatment and the control group to respond to a questionnaire with the same items. Below were the items:

Positive items

- COVID-19 vaccine is safe.
- COVID-19 vaccine is useful for preventing the spread of the virus.
- COVID-19 vaccine is the surest way to combat the pandemic.
- COVID-19 vaccine is capable of helping people less vulnerable to contracting the virus.
- COVID-19 vaccine is useful.
- COVID-19 vaccine has been approved by the relevant authorizing bodies.
- COVID-19 vaccine is not a trap.
- COVID-19 vaccine is not a conspiracy to against any part of the world.
- COVID-19 vaccine does not contain any chip.
- COVID-19 vaccine does not have side effect

Negative items

- COVID-19 vaccine will alter people DNA
- People who receive the vaccine will die in two years.
- COVID-19 vaccine was developed in a hurry.
- COVID-19 vaccine cannot be trusted.
- The vaccine has serious negative side effects
- COVID-19 vaccine contains a chip.
- COVID-19 vaccine is not effective.
- COVID-19 vaccine is not meant for Africa countries.

Participants recruitment

Before determining the adequacy of the sample size, we conducted a priori power analysis. We made use of G*power programme (Faul *et al.*, 2007) and the parameters were power $(1 - \beta)$ at 0.90, 0.30 effect size f , and $\alpha = 0.05$. The result of the priori power analysis revealed that a

total of 470 sample of social media users was required to detect statistical differences at 0.05. Therefore, 470 social media users in Nigeria constituted the sample size.

The sampling technique for the study was respondent-driven sampling (RDS) chain referrals [see (Okpara *et al.*, 2021; Onuora *et al.*, 2020)] to select a sample for the study. By its very nature, RDS starts by sampling earlier participants called ‘seeds’. To select the initial seeds, we applied announcements through Facebook. Okpara *et al.* in a study found that (Okpara *et al.*, 2021) Facebook announcements are effective for sampling seeds. During the announcements, it was stated that those who wish to be a part of the study should contact the researchers. The criterion for inclusion was that the seeds must be social media users. The seed then further recruited other participants in their network.

Instrument for data collection

Questionnaire served as the instrument for data collection for the study. The questionnaire contains items that sought to measure the perception of the respondents towards COVID-19 vaccine as well as their readiness to make themselves available for vaccine in the event that the vaccine is available in Nigeria. For this study, the response format was a four-point likert scale that range from Strongly Agree (SA) to Strongly Disagree (SD). Three research experts from the Department of Mass Communication, University of Nigeria, Nsukka validated the questionnaire. Their comments were useful in producing a final version of the instrument. With regards to reliability, we utilized a test-re-test strategy using 2 weeks interval. The result of the correlation coefficient was 0.81 (81%), an indication that the instrument was reliable.

ETHICAL APPROVAL

The Faculty Arts Research Ethics Committee, at the University of Nigeria, Nsukka, Nigeria provided the ethical approval for the conduct of the current study (FA/IRB/20/0012). The type of approval gotten was exempt because participation in the study did not subject the participants to any risk. The main argument that was canvassed to receive the approval is because the outcome of the study was helpful to provide useful that on health promotion in an era of fake news proliferation.

Data analysis

To analyse data for this study, the researchers combined descriptive statistics such as simple percentages, mean

and standard deviation. Also, inferential statistics such as an independent *t-test* and analysis of covariance (ANCOVA) were used. All the hypotheses were tested at 0.05 level of significance.

RESULTS

The sample for this study was 66% male and 44% female. Additionally, 63% of the respondents were Christians while 37% were Muslims. Regarding education, 81% of the sample had tertiary education. All the respondents reported daily use of social media platform. Facebook, WhatsApp, and Twitter were the most used social media platform with WhatsApp as the most used in terms of duration per log in. The result of the hypotheses testing is presented in Tables 1–4:

H1: Social media users who are exposed to fake news on COVID-19 vaccine will report a more negative perception regarding a COVID-19 vaccine than those who are not.

The objective of computing Table 1 was to test the impact of fake news on COVID-19 vaccine on negative perception of social media users regarding the vaccine. It was found that after exposure to fake news on the vaccine, both the treatment and the control groups scored lower regarding their negative perception of COVID-19 vaccine. However, after the treatment wherein the experiment group was exposed to fake news on the vaccine, there was a change in mean score with the treatment group scoring higher regarding their negative perception of COVID-19 vaccine while the mean score of the control group did not significantly change. Based on this result, the first assumption was supported and the researchers conclude with 95% confidence that fake news through social media negatively impact on public perception regarding COVID-19 vaccine.

H2: Social media users who are exposed to a counselling intervention will report a more positive perception regarding COVID-19 vaccine than those who are not.

In Table 2, the researchers examined the impact of a social media-based counselling intervention in countering fake news on COVID-19 vaccine among the sample. It was found that before the treatment, both the control and the treatment group had lower mean scores regarding positive perception of COVID-19 vaccine. But after the treatment, the treatment group scored higher regarding positive perception of COVID-19 vaccine. Based on this result, our second assumption was equally supported and the researchers

Table 1: Mean and *t*-test results on the impact of fake news on perception of COVID-19 vaccine among participants according to group

Groups	Pre-treatment (baseline-time 1) (perception of COVID-19 vaccine)				Post-treatment (time 2)			
	Mean	SD	Df	Not Sig	Mean	SD	Df	Sig
Control group	1.4	0.62			1.3	0.45		
Treatment group	1.3	0.91	45	0.61	3.6	0.28	14	0.01

Table 2: Mean and *t*-test results on the impact of social media-based counselling intervention in countering fake news on COVID-19 vaccine among participants according to group

Groups	Pre-treatment (baseline-time 1) (perception of COVID-19 vaccine)				Post-treatment (time 2)			
	Mean	SD	Df	Not Sig	Mean	SD	Df	Sig
Control group	1.2	0.67			1.3	0.78		
Treatment group	1.3	0.99	41	0.65	3.2	0.98	19	0.02

Table 3: Mean and *t*-test results on the impact of social media-based counselling intervention in countering fake news on COVID-19 vaccine among participants according to group

Groups	Pre-treatment (baseline-time 1) (behaviour intention towards COVID-19 vaccine)				Post-treatment (time 2)			
	Mean	SD	Df	Not Sig	Mean	SD	Df	Sig
Control group	1.1	0.67			1.4	0.56		
Treatment group	1.2	0.99	41	0.62	3.6	0.57	17	0.02

Table 4: ANCOVA analysis of the impact of the intervention for experiment 1

Group	Pre-test mean score	Post-test mean score	Mean score difference	p-value
	Experiment 1			
Control group	1.4	1.3	0.1	
Treatment group	1.3	3.6	1.3	
	Experiment 2			
Control group	1.2	1.3	0.1	
Treatment group	1.2	3.6	2.4	0.04

concluded with 95% confidence that counselling is an effective strategy to counter fake news through social media.

H3: Social media users who are exposed to a counselling intervention will report a more positive behavioural intention regarding COVID-19 vaccine than those who are not.

Table 3 was computed to determine the effectiveness of a social media-based counselling intervention on behaviour intention towards COVID-19 vaccine among the sample examined. The result of the study showed that before the intervention, both the control and the treatment group scored lower regarding their behavioural intention related to COVID-19 vaccine. However,

after the intervention, it was found that respondents in the treatment group scored higher regarding behaviour intention to make themselves available for COVID-19 vaccination. This means that our intervention was effective and we conclude with 95% confidence that a social media-based counselling intervention will be effective in influencing social media users to make themselves available for COVID-19 vaccination.

In Table 4, an ANCOVA was used to determine the mean difference of the control and the treatment groups in both experiment 1 and experiment 2. The result of the study showed both the control and the treatment groups significantly differed in their mean scores in both experiment 1 and 2. This means that the intervention was effective in countering fake news on COVID-19 vaccine.

DISCUSSION OF FINDINGS

In this study, we sought to extend literature by examining the impact of social media-based counselling intervention in countering fake news related to COVID-19. To achieve this aim, we conducted two separate experiments. In the first experiments, we exposed the treatment group to fake news on COVID-19 vaccine through a WhatsApp group chat while the control group was not. We then tested the effectiveness of such fake news on their perception and found that respondents who were exposed to such fake news reported greater negative perception about COVID-19 vaccine than their counterparts in the control group who were not exposed to such fake news. The implication here is that fake news circulated through social media actually have negative implications on the perceptions of social media users regarding issues that are contained in such fake information. The current study has extended previous ones (Hunt *et al.*, 2018; Apuke and Omar, 2021) on fake news by not just looking at fake news sharing through social media but also examine the real-time impact of fake news on perception. This addition is important because it has provided a new direction in the study of fake news as well as social media.

Furthermore, in our second experiment, we exposed the treatment group to a social media-based counselling intervention wherein we attempted to counter the earlier fake news on COVID-19 vaccine to which they were exposed to. We found that as a result of the counselling intervention, the respondents in the treatment group reported more positive perception regarding COVID-19 vaccine while their counterparts in the control group who were earlier exposed to fake news on COVID-19 did not significantly change their perception. The

implication here is that counselling through social media could serve as an important tool for changing public perception. This result has extended previous studies related to social media platforms (Kingdom 2020; Onuora *et al.*, 2020) by showing that such virtual communication venues can as well serve as venues for counselling people on health promotions.

Finally, the result of this study showed that social media users who received counselling intervention on COVID-19 vaccine reported more positive intention to make themselves available for vaccination than their counterparts who were not exposed to such an intervention. The implication of this result is that social media-based counselling can be an effective tool for health communication and health promotion during pandemics like COVID-19. The current study has extended previous studies (Matliwala 2017; Syahniar 2017) on the impact of counselling on behaviour change by showing how social media can serve as a platform to counselling people who have been exposed to fake news. The result of this study, has, therefore, opened a new vista in the study of the effectiveness of counselling as a behaviour change communication tool.

THEORETICAL AND PRACTICAL IMPLICATIONS

The results of this study have implications for the theory of cognitive dissonance as well as the TPB. For example, regarding the theory of cognitive dissonance, the result of the current study has shown how fake news alters the cognitions that social media users have and how counselling delivered through social media counter the wrong perceptions that they have. When social media users are exposed to cognition of COVID-19 vaccine they will very likely go through an internal process and conclude that the fake news they have received about COVID-19 is true. However, when they are exposed to counselling on the benefits of COVID-19 vaccine, they will go through a point of dissonance and eventually change perception as a strategy to achieve consonance (Festinger, 1957). Therefore, the current study has provided information that may be used to explain the CDT, especially in the light of fake news often circulated through different social media platforms.

The results of the current study also have implications for the TPB. This is because the results have shown that behavioural intention can as well be influenced by the quality of information available to a person. For example, the respondents of the study who did not have the opportunity to be exposed to the counselling intervention did not get to know that the fake news contents

which they were exposed to were inaccurate, hence they did not indicate readiness to make themselves available for vaccination. On the contrary, respondents in the treatment group who were exposed to accurate information about COVID-19 vaccine reported greater readiness to receive the job. Therefore, this leads us to conclude that quality of information is an important consideration when examining behavioural intention.

The results of the current study also have practical implications on health promotions as well as counselling. Regarding health promotion, this result suggests that accurate information is a *sin qua non* for effective health promotions. Effective health promotion here means health promotion that achieve the desired results in terms of behaviour change. This information could be useful for health promotion, especially during a global pandemic like COVID-19. Regarding counselling, the result of the current study has shown that the 21st-century counselling exercise can as well be held through mediated channels and not only through face-to-face interaction. This information may prove beneficial to guidance counselling experts who may need to collaborate with experts in information and communication experts to design counselling intervention that suits the 21st-century society.

LIMITATIONS AND RECOMMENDATIONS FOR FURTHER STUDIES

Although this study has provided empirical evidence regarding the effectiveness of a social media-based counselling intervention in countering fake news, the study has some limitations. For example, the study has examined only COVID-19 vaccine, there may be need to examine other areas such as politics, security, among others. Additionally, people differ based on their personality traits. The current study did not take this into account. Furthermore, the current study was a social media-based intervention. There may be the need to examine other intervention techniques such as small group communication. Therefore, it is recommended that further researches should be conducted to take care of the limitations of the study.

REFERENCES

- Ajzen, I. (1985) From intentions to action: a theory of planned behaviour. In Huhl, J. and Beckman, J. (Eds.), *Will; Performance; Control (Psychology); Motivation (Psychology)*. Springer-Verlag, Berlin and New York, pp. 11–39.
- Ajzen, I. (1991) The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Ajzen, I. (2008) Consumer attitudes and behaviour. In Haugtvedt, C. P., Herr, P. M. and Cardes, F. R. (Eds.), *Handbook of Consumer Psychology*. Lawrence Erlbaum Associates, New York, pp. 525–548.
- Al Sayah, F., Agborsangaya, C., Lahtinen, M., Cooke, T. and Johnson, J. A. (2014) Mental health and the relationship between health promotion counselling and health outcomes in chronic conditions. Cross-sectional population-based study. *Canadian Family Physician*, 60, e113–e120.
- Ale, V. (2020) A library-based model for explaining information exchange on Coronavirus disease in Nigeria. *Ianna Journal of Interdisciplinary Studies*, 2, 1–11.
- Allcott, H., and Gentzkow, M.. (2017) Social Media and Fake News in the 2016 Election. *Journal of Economic Perspectives*, 31, 211–236.
- Apuke, O. D. and Omar, B. (2021) Fake news and COVID-19: modelling the predictors of fake news sharing among social media users. *Telematics and Informatics*, 56, 101475.
- Creaner, M. (2015) The role of social media in counselling and psychotherapy. In Tribe, R. and Morrissey, J. (Eds.), *Handbook of Professional and Ethical Practice for Psychologists, Counsellors and Psychotherapists*. Routledge/Taylor & Francis Group, pp. 158–169.
- Boot, D., Gillies, P., Fenelon, J., Reubin, R., Wilkins, M. and Gray, P. (1994) Evaluation of the short-term impact of counseling in general practice. *Patient Education and Counseling*, 24, 79–89.
- Ezeah, G., Ogechi, E. O., Ohia, N. C. and Celestine, G. V. (2020) Measuring the effect of interpersonal communication on awareness and knowledge of COVID-19 among rural communities in Eastern Nigeria. *Health Education Research*, 35, 481–489.
- *Faul, F., Erdfelder, E., Buchner, A. and Lang, A. G. (2007) GPower 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175–191.
- Festinger, L. (1957) *A Theory of Cognitive Dissonance*. Row & Peterson, Evanston, IL.
- Festinger, L. and Carlsmith, J. M. (1959) Cognitive consequences of forced compliance. *The Journal of Abnormal and Social Psychology*, 58, 203–210.
- Gera, N. P. and Ugwu, E. I. (2020) Developing prototypes of COVID-19 fullness facemask and testing its acceptance among youth in Benue State, Nigeria. *Ianna Journal of Interdisciplinary Studies*, 2, 42–54.
- Gever, V. C. and Ezeah, G. (2020) The media and health education: did Nigerian media provide sufficient warning messages on coronavirus disease? *Health Education Research*, 35, 460–470.
- Hunt, D., Robertson, D. and Allison, P. (2018) The counselor's role in the age of social media and fake news. *Journal of Creativity in Mental Health*, 13, 405–413.
- Jaster, R., and Lanius, D. (2018) What is Fake News? *Versus XLVII*: 207–224.
- Jegade, A. S. (2007) What led to the Nigerian boycott of the polio vaccination campaign? *PLoS Medicine*, 4, e73.

- Kingdom, K. (2020) Predictors of the utilization of digital library services among women patrons in Bayelsa State, Nigeria: the moderating role of marital status. *Ianna Journal of Interdisciplinary Studies*, 2, 86–94.
- Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F. et al. (2018) The science of fake news. *Science*, 359, 1094–1096.
- Matliwala, K. (2017) The effect of psychological counseling on mental health. *Journal of Psychology & Clinical Psychiatry*, 7, 00436.
- Meyers, L. (2018) Disconnected: why counselors can no longer ignore social media. Retrieved from <https://ct.counseling.org/2018/04/disconnected-why-counselors-can-no-longer-ignore-social-media/> (last accessed 20 July, 2021).
- Muigai, J. W. W. (2019) Understanding Fake News. *International Journal of Scientific and Research Publications (IJSRP)*, 9, 29–38.
- Nasir, S., Aliyu, G., Ya'u, I., Gadanya, M., Mohammad, M., Zubair, M. et al. (2014) From intense rejection to advocacy: how Muslim clerics were engaged in a polio eradication initiative in northern Nigeria. *PLoS Medicine*, 11, e1001687.
- Odi, A., Ngwu, M. O., Aniakor, M. C., Owelle, I. C., Aniagboso, M. C. and Uzuanwu, O. W. (2020) Effect of COVID-19 lockdown on poor urban households in Nigeria: where do we go from here? *Ianna Journal of Interdisciplinary Studies*, 2, 75–85.
- Ogbonne, I. P. (2019) Cutting the head as cure for headache: exploring the economic impact of Niger Delta militancy on host communities. *Ianna Journal of Interdisciplinary Studies*, 1, 76–84.
- Olijo, I. I. (2020) Nigerian media and the global race towards developing a COVID-19 vaccine: do media reports promote contributions from African countries? *Ianna Journal of Interdisciplinary Studies*, 2, 65–74.
- Okpara, C.V., Anibueze, A., Talabi, O F., Omowale, A. and Gever, V. C. (2021) The moderating role of colour in modelling the effectiveness of COVID-19 YouTube animated cartoons on the health behaviour of social media users in Nigeria. *Health Promotion International*, 10.1093/heapro/daab001
- Onuora, C., Torti, N., Ezeah, G. and Gever, V. C. (2020) Effect of dramatized health messages: modeling predictors of the impact of COVID-19 YouTube animated cartoons on health behaviour of social media users in Nigeria. *International Sociology*, 36, 124–140.
- Pate, U., Gambo, D. and Ibrahim, A. (2019) The impact of fake news and the emerging post-truth political era on Nigerian polity: a review of literature. *Studies in Media and Communication*, 7, 21–29.
- Pulido, C., Ruiz-Eugenio, L., Redondo-Sama, G. and Villarejo-Carballido, B. (2020) A new application of social impact in social media for overcoming fake news in health. *International Journal of Environmental Research Public Health*, 17, 2430.
- Syahniar, S. (2017) The application of impact counseling in therapy started with individual counseling expressive to cope the personal problems by college students. *Couns-Edu: The International Journal of Counseling and Education*, 2, 63–69.
- Talwar, S., Dhir, A., Kaur, P., Zafar, N. and Alrasheedy, M., (2019) Why do people share fake news? Associations between the dark side of social media use and fake news sharing behavior. *Journal of Retailing and Consumer Services*, 51 (September), 72–82. <https://doi.org/10.1016/j.jretconser.2019.05.026>
- Wogu, J. (2021) The impact of exposure to fake news and hate speech in the social media on political polarization during Nigeria presidential elections since 2011: Evidence from Southeast. (Unpublished research article).
- World Health Organization. (2020) Munich security conference. Available online: <https://www.who.int/dg/speeches/detail/munich-security-conference> (last accessed 20 July, 2021).
- World Health Organization. (2021) Coronavirus disease (COVID-19): vaccines. Retrieved from [https://www.who.int/news-room/q-a-detail/coronavirus-disease-\(covid-19\)vaccines?adgroupsurvey={adgroupsurvey}&gclid=CjwKCAiAg8OBBhA8EiwAlKw3kkk1XTrIYdw-RM19I9KriTLqTjvAmZYi-wx6tCjX_xnK8jYymOc71xoCOA4QAvD_BwE](https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)vaccines?adgroupsurvey={adgroupsurvey}&gclid=CjwKCAiAg8OBBhA8EiwAlKw3kkk1XTrIYdw-RM19I9KriTLqTjvAmZYi-wx6tCjX_xnK8jYymOc71xoCOA4QAvD_BwE) (last accessed 20 July, 2021).
- Yahya, M. (2007) Polio vaccines—“no thank you!” barriers to polio eradication in northern Nigeria. *African Affairs*, 106, 185–204.
- Yang, Y., Liu, K., Li, S. and Shu, M. (2020) Social media activities, emotion regulation strategies, and their interactions on people's mental health in COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 17, 8931.
- Young, L. E., Sidnam-Mauch, E., Twyman, M., Wang, L., Xu, J. J., Sargent, M. et al. (2021) Disrupting the COVID-19 misinformation with network interventions: network solutions for network problems. *American Journal of Public Health*, 111, 514–519.
- Zhong, B., Jiang, Z., Xie, W. and Qin, X. (2020) Association of social media use with mental health conditions of nonpatients during the COVID-19 outbreak: insights from a National Survey Study. *Journal of Medical Internet Research*, 22, e23696.
- Zhou, W., Wang, A., Xia, F., Xiao, Y. and Tang, S. (2020) Effects of media reporting on mitigating spread of COVID-19 in the early phase of the outbreak. *Mathematical Biosciences and Engineering*, 17, 2693–2707.