

Effect of social trust on health information exchange in social network sites

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Background: The purpose of this study is to conduct a systematic literature review of the role of social trust in health information exchange on social network sites (SNSs). In the light of the confusion and panic about health information leading to and during the worldwide lockdown, in an attempt to control the spread and symptoms of coronavirus disease 2019 (COVID-19). Although the sharing of health information on SNS did not start during the COVID-19 lockdown, the concerns about health information interchange were highlighted during the lockdown.

Objectives: This study investigates the nature of the association between health information exchange and social trust and how social trust has influenced health information exchange from 2005 to 2021.

Method: In line with the purpose of the study, the researcher applied a systematic literature review to review conference articles, accredited journal articles and book chapters. The review process involved a rigorous procedure towards a definition of review protocol, extraction of articles, formulation of selection criteria and the review itself.

Results: This study reveals a transactional interplay between the constructs of social trust (benevolence, integrity and competence) and social network site user roles (information seeker, information passer and information giver).

Conclusion: In summary, the researcher argues that public health officials would benefit from setting up an SNS that proactively provides health information. The health information exchange experience should be designed in a way that takes into account how social trust can be used to moderate health information exchange in the SNS by different types.

Keywords: health information; social trust; benevolence; integrity; competence; social network sites.

Introduction

The end of the year 2019 was marked by the news of a new disease, which was then deemed to be a likely pandemic that was going to affect the whole world (Ahmed et al. 2020). Indeed, at the beginning of 2020, the coronavirus disease 2019 (COVID-19) pandemic was announced, and it affected people from different walks of life all over the world in many different ways. The novelty of the coronavirus meant that there was little known about this virus, at least in the general population (Whitelaw et al. 2020). The lack of knowledge and unavailability of a known cure for the disease added to the anxiety about prevention of and protection from the virus.

Many countries adopted prevention as the main strategy to deal with the spread of the virus, which meant citizens were an integral part of the public health strategy, at least for the time being. If the general population must be at the centre of the strategy, they must work and rely on accurate information about the prevention measures that should be adopted by the citizens (Handarkho, Widyastuti & Harjoseputro 2022). However, those who were already infected required information about a home remedy, if they were not admitted to the hospital, because of the overstretched healthcare systems in most countries.

In this study, the researcher used a systematic literature review (SLR) as the method of inquiry to unpack the health information transaction on social network sites (SNSs). Although the investigation is inspired by information exchange patterns during the initial lockdown in early 2020, this investigation will delve into the health information transaction in general.

Research problem

The mainstream, traditional media and SNSs were used to disseminate information to citizens about the spread, prevention and home care measures of the COVID-19 virus. The mainstream and traditional media are well controlled by regulatory bodies they subscribe to, which also monitor their behaviour and ensure ethical responsibility is upheld. Contrary to that, a tremendous increase in social network site usage has influenced the way people live and share their opinions on SNSs, as some people's lives are immersed in the social network world. In the initial stages of the COVID-19 breakout, vast proportions of information were shared through SNSs. Even though mainstream media did its best to provide information, many people spent a lot of time reading or posting information on SNSs (Handarkho et al. 2022).

Although SNSs have a wider and quicker reach to citizens, they are not formally regulated by a regulatory body that can hold them accountable (Handarkho et al. 2022). Social trust is but one of the principal factors that enable information exchange among SNS users. The SNS community can be categorised as information givers, information passers and information seekers, where the information givers are the opinion leaders, and the information passers and seekers are usually the followers (Chu & Kim 2011). Sharing information on SNS could be seen as altruistic when information is helpful and provides an alternative perspective about a specific troubling situation. However, it is still unofficial, and SNS information givers do not subscribe to any regulatory body.

In times of panic, confusion and isolation, individuals looked to SNSs such as Twitter and Facebook to express their personal views about the pandemic; some of the views were based on expert knowledge and others on the little information they had about the pandemic. At the time of the pandemic breakout, the accuracy of shared information was of paramount importance because it could have had a devastating impact, especially if it is not shared by public health experts or medical experts (Ahmed et al. 2020). Meanwhile, individuals had to make informed decisions about different ways of dealing with COVID-19, such as a decision on whether or not to take the COVID-19 vaccine during the initial roll-out amid different rumours about side effects shared on SNSs. As most as these are personal decisions, the fact cannot be ignored that SNSs have influenced public opinion. The advent of SNSs enables an environment where individuals rely on and trust strangers with their important personal information and use information from SNSs to make important decisions.

Social trust as a factor of social capital provides an appetite towards one's willingness to be vulnerable to others in the SNS by accessing and consuming health information that is shared by a trusted party in the SNS (Lucas 2005). Sabatini and Sarracino (2019) referred to social trust as trust in strangers that is the constituent of the SNS in general. It is for this reason the researcher intends to explore the

relationship between social trust and sharing of health information on SNSs with the specific intent to make health-related decisions. This exploration will be based on current literature going back to 2005.

Research questions

- What is the nature of the association between health information sharing on SNS and social trust?
- How has social trust influenced the exchange of health information from 2005 to 2021?
- How has health information exchange on SNS discourse developed from 2005 to 2021?

Research methodology

In this study, the researcher explored the development of inquiry of social trust as a factor that influences sharing of health information on SNS and the issues of concern over the past 15 years, following a qualitative research approach (Torraco 2005). The SLR is the best-suited methodology to reflect on the association between social trust and sharing of health information through SNSs over a period of time (2005–2021). The review focuses on information exchange between the information seeker, passer and giver on SNSs.

In this review, the researcher employs Massaro, Dumay and Garlatti's (2015) approach that consists of the following procedures: definition of the research question; preparation of research protocol for the review; determination of the articles to include; carrying out a comprehensive literature search; development of a code framework; and analysis and discussion of the results. In this section of the review, the researcher provides a brief discussion of the procedure.

The given research questions form the basis of the research protocol, which in itself is informed by the research problem. Beyond that, the review is based on journal articles, book chapters and conference proceedings published between 2005 and 2020 to cover the period of the last 15 years. The research protocol is critical for reviews that involve a group of researchers; however, it is still important to a sole researcher because it provides the guide for literature search and the review itself (Massaro et al. 2015).

The preliminary literature scan revealed the following keywords: 'SNS', 'social trust', 'health information', 'social capital' and 'social media'. 'Social capital' and 'social media' were included in the list of keywords because social trust is a construct for social capital, whereas SNSs are referred to as social media in some of the studies (Dunne, McIntosh & Mallory 2014; Mourtzis et al. 2016; Tang et al. 2019; Turner 2016).

The search parameter was delimited by a combination of nominated keywords using logical operators such as AND/OR in the Scopus and ScienceDirect databases and the Google Scholar search engine. In the initial search, the logic operator and was applied to a combination of all keywords

and returned 0 results, while Google Scholar returned 120 article results, but most of the returned results were found to be irrelevant upon preliminary scan of the abstracts, introduction and conclusion. The subsequent search introduced the logic operator OR to the keywords 'social network sites' and 'social media' in all fields and 'social trust' and 'social network sites' in all fields, which returned 83 articles. Then the period parameter of 2005 as a start date and 2021 as the end date were introduced, which reduced the number of results by 15 articles. The OR logical operator was introduced between the social trust and health information in order to include articles that investigated social trust in SNSs or health information exchange.

Discussion of results

The renewed search returned 23 results, which were then scanned for relevance to the research problem by reading the abstract, introduction, conclusion and finally the whole article. Figure 1 shows the publication distribution over the years.

Studies that investigate the sharing of health information and the influence of social trust on sharing health information in SNS started slowly in 2010, with two articles in 2010 and 2011 per year. These publications were primarily focused on the sharing of health information on SNSs and social capital, whereas in 2017 there was a slight growth as health information systems (HISs) were gaining prominence as an established research area. Even though there are many publications on HISs, they were not directly investigating the role of social trust or social capital in sharing information on SNSs. The numbers continued to be stable as scholars in the field of information technology increasingly ventured into health information research. Figure 2 shows the study disciplines of the publications selected for the literature review.

It might be an obvious assumption that most of the articles that are selected for review should come from the discipline of health studies; however, there is a steady growth of inquiry into health in conjunction with other disciplines such as information technology and business studies. The results of the literature search brought in literature from hospitality and

tourism, information technology, communication sciences, health studies and business management, and there was also a combination of IT and health studies.

All articles that were selected for review were uploaded to Mendeley (Elsevier Inc., Amsterdam, the Netherlands), a referencing tool that allows for the annotation and tagging of each article. The researcher does realise that software programmes such as ATLAS.ti (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany) and NVivo (QSR International, Doncaster, Australia) could also be useful for coding purposes, but tagging and annotation worked very well in Mendeley, which also made it simpler to cite while writing, as it develops a referencing list.

All articles were uploaded in one folder in Mendeley, and then tags were used as codes that resulted in a code framework. The researcher applied open coding through each article, after which related codes were grouped together to form themes of discussion. Each code (tag) was attached to a quotation from the article. The researcher extracted all codes and quotations to read with the objective of forming a storyline. The storyline was used to formulate the conceptualisation of the emergent themes shown in Figure 3.

The network of health information exchange on SNS is conceptualised from that network of codes as they emerge from the reviewed literature. This network of codes forms the basis of the following discussion.

The use of a social network site in sharing of health information

Zedeh et al. (2017) cited a PricewaterhouseCoopers (PwC) survey highlighting the fact that around 90% of individuals in the United States of America and South Korea rely on health information obtained from an SNS. This makes it essential that information disseminated on SNSs be accurate, in the same way that SNSs could also provide welcomed benefits for communities that seek information for health decision-making. Kontos et al. (2010) asserted that SNSs minimise communication inequality, and such inequalities have the potential of exacerbating health-related knowledge gaps. In actual fact, SNSs are designed to facilitate content creation, sharing of

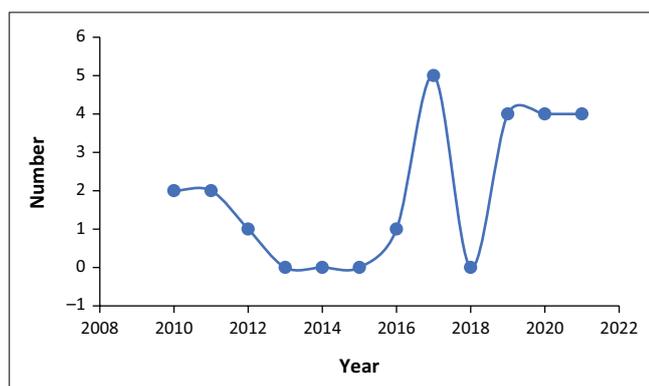
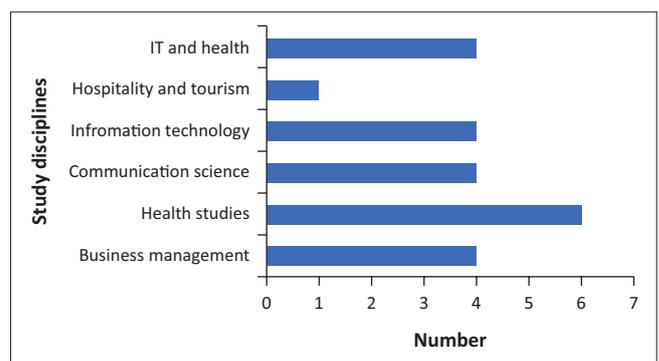


FIGURE 1: Relevant publication distribution over the years.



IT, information technology.

FIGURE 2: Study disciplines of publication selected for literature review.

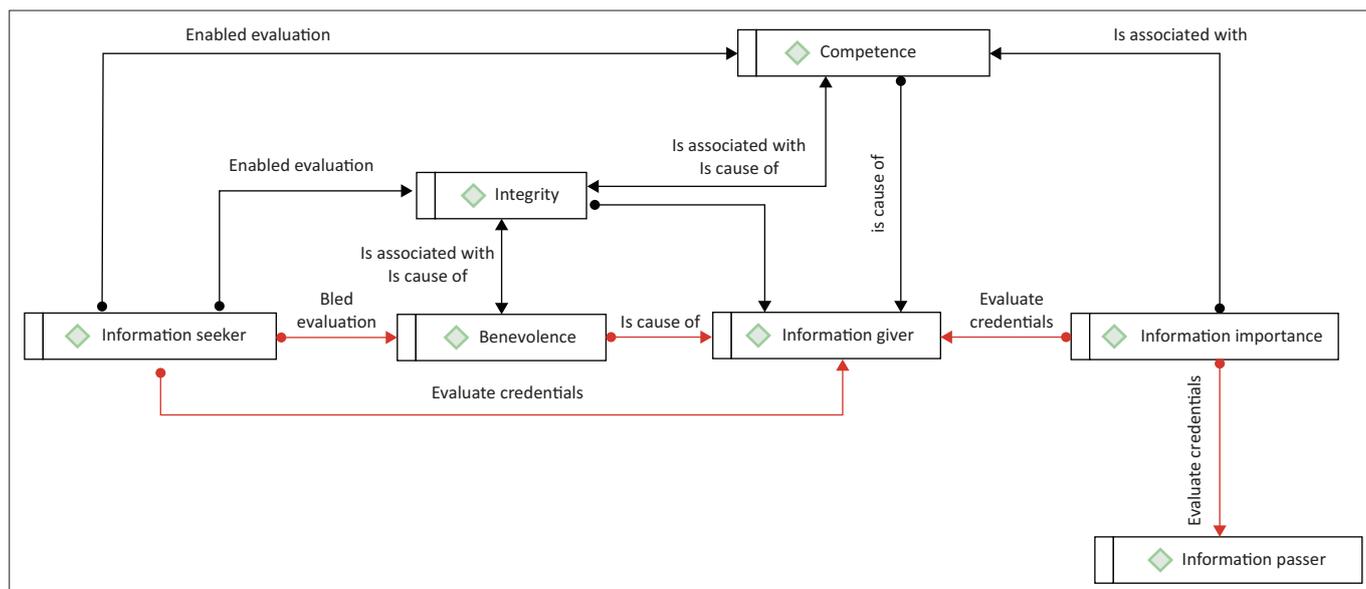


FIGURE 3: A network of health information exchange on social network sites.

information, communication between individuals online and interaction among users who have a common cause, either for recreational preferences or for educational purposes. Social network sites have been gaining prominence in the ICT space because of their specific ability to facilitate knowledge-sharing, crowdsourcing, interconnectivity and collaborative work online (Weber 2012).

Peer-to-peer collaboration forms the foundation for knowledge development that sets off informed decision-making among those who engage in the SNS (Chu & Kim 2011). In times of desperation, confusion and perceived public risk, timeous information sharing for health decisions is essential. Lack of timeous information could lead to public overreaction about the perceived risk, especially in cases where there is a novel pandemic situation (Yang & Cho 2017). Public health authorities have a responsibility to manage the health information circulation, among other things, by ensuring that correct information is disseminated through the channels and platforms that have a wider reach to the public; otherwise, any rumour could be perceived as the truth. Once false information or rumours start trending, it could have a detrimental effect on public health, because people trust other users in the SNS more than an organisation or official institution (Alalwan et al. 2019).

Chu and Kim (2011) identified three basic roles in a knowledge-sharing transaction on SNS. These are information seeker, information passer and information giver. It would be prudent for public health officials to manage and monitor these SNS transaction behaviours, such as instances where an information seeker would consume any opinion received from popular and trending information passers and opinion givers. In these sorts of information exchange, both the opinion passer and giver have almost the same sort of influence on the information seeker. In the absence of correct health information from a credible source, the information seeker is highly likely to consume and sometimes pass

incorrect health information. In turn, the information seeker's role changes hands with the information passer.

Kahouei, Zadeh and Behkhooy (2016) asserted that despite most SNSs being unofficial sources of health information, they have an integral role to play in an effort to improve lifestyle behaviour. Such SNSs could provide timeous information to disparate individuals who need to make health decisions immediately. Yang and Cho (2017), on the other hand, warn that while SNS are useful for the dissemination of information, caution should be practised in order to avoid public apprehension and panic if correct information is not provided in time, and people would then depend on the SNS's unverified opinion.

Kontos et al. (2010) suggested the launch of health community-specific SNSs that are led by an opinion giver who has appropriate credentials in the health sector. That way, the information source can be verified within the community by peers and be open to the public for consumption. These SNSs might not be as popular with the general social networking community; however, the testament of the benefits derived from a health community-specific SNS would attract more information seekers (Sabatini & Sarracino 2019). Visibility of real benefits from the SNS would enable the development of social trust between information seekers and not only the information givers but also the entire community that actively participates in the health-specific SNS (Chow & Chan 2008).

Social trust in social network sites

As most of the SNSs are designed to facilitate content creation and sharing among users who have a common interest, such interactions are somehow regulated by social trust to a certain degree (Weber 2012). According to Chu and Kim (2011), social trust in SNSs enables a positive codependence within a social group, irrespective of whether it is formally or informally

established. The information-sharing process could be in one direction or it could be reciprocated, where participants in the information transaction become equals, as information seekers also become information providers during the exchange (Mkhize & Nxumalo 2017). It is easier to establish and manage social trust where information givers' credentials are revealed, because that creates a perception that the information giver is trustworthy and credible. In turn, social ties get stronger between the information seeker and giver for the subsequent information exchange.

In the fast-growing economic environment, businesses and nonprofit organisations benefit from the capabilities of SNSs for the promotion and exchange of ideas and opinions as content, which could be leveraged by public health officials (Chu & Kim 2011). This kind of benefit is not only limited to commercial organisations but also to individuals who use SNSs to exert their influence by altering followers' attitudes about a specific issue of concern within a circle of concern of both information giver and seeker.

Most of the information that is received from SNSs usually relates to the personal experience of the information giver; however, such information is not officially endorsed or approved by any regulatory body. Then, social trust becomes a critical point of trustworthy evaluation of the information that is shared on the social network site (Kuo et al. 2021). Social trust as a construct of social capital is based on benevolence, integrity and competence (Lin 2011).

The exploration of benevolence is essential for public health officials in order to understand information transaction decisions, as the information seeker receives and accepts information from the information giver based on the information seeker's perception that the information giver shares knowledge with altruistic motives and the kindness of the information giver's heart, believing that it is well-meaning (Hwang & Lee 2012). That said, it is difficult to establish benevolence from a social network site, but the information seeker has a multitude of resources that can be used to conduct a basic check, such as the information giver's previous engagement in the social network site (Alalwan et al. 2019). The assumption is that the value that the information seeker assigns to the information found on the social network site is equivalent to the amount of time spent on verifying the benevolence.

Rathore et al. (2017) studied the security and privacy issues in SNSs, where integrity is among the important issues for sharing different types of information on different types of SNS platforms. Integrity enables the information seeker to evaluate the information giver's honest and strong moral principles, which could give the information seeker some level of confidence in the information giver's intentions before deciding on whether the information should be used to make a health decision. The information seeker must understand different SNS types in order to use an appropriate type to check for the information giver's and passer's integrity (Rathore et al. 2017). Even though an SNS search is

not the primary tool for integrity evaluation, it provides a glimpse into participants' personalities and online behaviour. Social network sites such as LinkedIn would give the information seeker a good amount of information as to the information giver's profession, interest and engagement.

Most SNSs are designed to share personal information, including pictures, while others are designed to share and engage a specific community of inquiry at a professional level, such as LinkedIn (Kahouei et al. 2016). In the context of health information sharing, it would be prudent to use a combination of professional and personal SNSs to check the information that has been shared before by the information giver on SNS. Sometimes, information givers' behaviour on a microblog such as Twitter could give insight into the integrity of the information giver before the information seeker decides to use the information provided in an SNS (Weber 2012). Facebook also provides data about an information giver, passer and seeker's social circles and their behaviour. However, going to the trouble of searching for information about the participant in the information-sharing process would depend on the importance of information as assigned by either the information passer or information seeker. Otherwise, the exercise would be unnecessary.

The information giver's search would also reveal his or her competence on the subject matter of concern. Competence as a dimension of social trust should not be difficult to evaluate when deciding on whether to use information sharing in the SNS to make a health decision. Even though it cannot be said with certainty that the information giver would have a professional SNS account such as LinkedIn, it is unlikely that the information giver in the SNS would not have an SNS account. In the case where the information giver has a LinkedIn or Facebook account, the information seeker can look up the credentials of the information giver to qualify him or her for making assertions, claims and recommendations about topical issues in the medical field. It would be prudent for the information seeker to consult health professionals about any health issues and information, but where the information seeker must use information from SNSs, he or she should at least use the information provided by a contributor who is a health professional.

Once social trust has been established by an information seeker regarding information that is passed through a social network site and has been deemed credible and confirmed as truth, this would then influence the information seeker's health decisions (Tang et al. 2019). This is even more important during the COVID-19 pandemic as many people have to make health decisions based on information they receive, either from the health officials through traditional media platforms such as radio and television or information they received from SNSs.

Social trust in SNSs is also context-based trust (Alalwan et al. 2019), which can be based on the content provided on the site determined by the architect, the design of the site and the information that is provided on the same site.

The favourite context speaks about the information that is backed by an organisation's credibility or an organisation that is already known for being successful in the related field or an organisation that is known for studying a specific area, in this case, public health. An SNS that is backed by such credentials is likely to be perceived to contain information that is trustworthy and good to use for health decision-making.

The people context involves reflection on the SNS user as to who they are in relation to their competency on the subject matter and their assumed integrity. The evaluation can be made based on their other SNS participation, because sometimes users behave differently in different types of SNS. If the user interaction in other SNS seems to be on a level of integrity, the information seeker can develop a certain level of confidence in the shared information. The information seeker would also want to know whether the intention of the information is out of the goodness of the information giver's heart. Anyone who is then charged with a responsibility to set up an SNS platform for health information sharing would have to understand that the site would be evaluated with certain criteria.

The risk associated with consuming health information from social network sites

The importance of sharing public health information was evident during the lockdown in order to avert confusion and desperation for citizens around the world, as COVID-19 affected the world the same way. Social network sites were instant sources of information for many people who wanted to understand how the virus spread. Even now that the virus is understood, there are many issues around the management of the virus spread and cures that still trend on SNSs, a year and a half after the start of the pandemic. Unlike traditional media, SNSs are unregulated, and any individual may post false information based on rumours without integrity and benevolence, which is likely to create confusion and desperation and sometimes panic. Kontos et al. (2010) suggested the establishment of health community-specific SNS to disseminate correct information and manage perceptions. This would even be critical concerning the management of perceptions that lead to a decision to accept or reject a virus management initiative such as vaccine roll-out.

It should be observed that some of the information givers cause inaccurate information to trend maliciously, which may result in public apprehension and many other types of public disasters (Yang & Cho 2017). Public health officials would be wise to heed the warning by Yang and Cho (2017) that risk perception should be associated with SNS users that is associated with social factors. Despite the fact that SNS interactions fall outside any public health authority, public health officials can try to avoid any crisis related to panic and desperation by releasing accurate information during a time when people diligently search for accurate information. Otherwise, rumours would be taken as the truth if there is no

accurate information that is as easily accessible as the false information that is making its rounds in SNSs.

Conclusion

This study set out to review academic studies that investigated the relationship between social trust and sharing of health information on social networks. The researcher's interest in this kind of investigation is evoked by the outpouring of health information from different sources, the most dominant being the SNSs during the initial world lockdown in trying to manage the spread of the COVID-19 virus. This review revealed that lack of health information in a time of panic and desperation in a community will lead to the community seeking information from the only source that is available at the time, whereas other members of the global community share their opinions on SNSs (Yang & Cho 2017). Such opinions could be based on rumour and false information.

Kontos et al. (2010) suggested the establishment of public health information-based SNSs that will minimise communication inequality and health-related knowledge gaps. Rathore et al. (2017) identified role players in the SNS space as the information seeker, passer and giver, and many SNS users fall under either one of these types of users. The establishment of health information-specific SNS would enable impactful management of information that goes out to the public, where public health officials are the information givers, especially in a time of crisis. Even though public health-specific SNSs would not completely eradicate the spread of false health information, they would provide accurate information for those who at least apply themselves in finding the correct information.

In this review, it was also revealed how the construct of social trust, such as benevolence, integrity and competence, can be used to evaluate health information provided by the information giver on SNS. Yang and Cho (2017) advised that the information giver's name and credentials should be clear in the SNS, so that accurate information would be given to make a decision to consume health information from a specific SNS or to ignore it. The value of information exchange is, to a certain extent, based on the information seeker's assessment of integrity, benevolence and competence.

Social network sites set-up for health information transaction consideration are characterised by the identification and monitoring of user types and then the decision on how each of the social capital constructs would manifest. Then, public health officials can evaluate how a combination of SNS types, user classification and social trust construct to accentuate the information exchange design. Some of the SNSs, depending on the information shared, may not require evidence of competence before the information seeker decides to consume such health information. Meanwhile, health information about a potential crisis and even a pandemic should be backed by an information giver's credentials, as it might be designed for a critical purpose within the public health sector.

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Competing interests

The author declares that he has no financial or personal relationship(s) that may have inappropriately influenced him in writing this article.

Author's contributions

I declare that I am the sole author of this research article.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of South Africa College of Science, Engineering and Technology's Ethics Review Committee (ref. no. 2021/CSET/SOC/031).

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Data availability

The data that support the findings of this study are available on request from the corresponding author.

Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any affiliated agency of the author.

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