Connectist: Istanbul University Journal of Communication Sciences

E-ISSN: 2636-8943

İSTANBUL UNIVERSITY PRESS

Research Article / Araştırma Makalesi

Use of social media for seeking information about COVID-19 and people's preventive behaviour: managing the pandemic in Aotearoa New Zealand

Sosyal medyanın Covid-19 ve insanların önleyici davranışları hakkında bilgi arama amaçlı kullanımı: Aotearoa Yeni Zelanda'da pandemiyi yönetmek

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Received/Geliş tarihi: 07.03.2022
Revision Requested/Revizyon talebi: 15.03.2022
Last revision received/Son revizyon teslimi: 30.01.2023
Accepted/Kabul tarihi: 31.10.2022
Online Published/Online Yayın: 02.05.2023

Citation/Atıf: Shaheen Ali, Z, Deswal, J. (2023) Use of social media for seeking information about COVID-19 and people's preventive behaviour: managing the pandemic in Aotearoa NZ. *Connectist: Istanbul University Journal of Communication Sciences, 64,* 1-36. https://doi.org/10.26650/CONNECTIST2023-1023972

Abstract

This study assesses the use of social media for seeking information about COVID-19 and people's preventive behaviour to combat COVID-19. To find the answers, an online survey was conducted by sending questionnaires to 254 respondents in New Zealand (NZ) through online communication platforms. The findings show that females are more actively seeking information from social media about COVID-19. Most of the respondents look for updates about COVID-19 cases locally and globally. During the COVID-19 pandemic, people are spending more time on social media. A majority of the respondents spend 3-4 hours per day on social media and prefer finding information about the pandemic from Facebook. It was found that the majority of respondents follow all updates about COVID-19 and believe that they receive timely and updated information through social media. Only a few do not follow any updates about the pandemic. In addition, when they were asked which social media platform they trust to provide true, up to date, and accurate information, most of the respondents believe that Facebook provides relevant and up-to-date information about COVID-19 compared to other traditional media. Lastly, this study
identified the information received from social media and the adoption of preventive behaviour by the respondents to combat COVID-19.

Keywords: Social media, information seeking, COVID-19, preventive behaviour, pandemic

Öz

Bu çalışma, sosyal medyanın COVID-19 hakkında bilgi almak için kullanımını ve insanların COVID-19 ile mücadele etmek için önleyici davranışlarını değerlendirmektedir. Cevapları bulmak için, Yeni Zelanda'daki 254 katılımcıya

çevrimiçi iletişim platformları aracılığıyla anket gönderilerek çevrimiçi bir anket yapılmıştır. Bulgular, kadınların daha aktif bir şekilde sosyal medyada COVID-19 hakkında bilgi aradığını göstermektedir. Ankete katılanların çoğu, COVID-19 vakaları hakkında güncellemeleri yerel ve küresel olarak takip etmektedir. COVID-19 salgını sırasında insanlar sosyal medyada daha fazla zaman harcamaktadır. Ankete katılanların çoğunluğu günde 3-4 saatini sosyal medyada geçirmekte ve pandemi hakkında Facebook'tan bilgi almayı tercih etmektedir. Ankete katılanların çoğunluğunun COVID-19 ile ilgili tüm güncellemeleri takip ettiği ve sosyal medya aracılığıyla zamanında ve güncel bilgiler aldıklarına inandıkları tespit edilmiştir. Sadece birkaç katılımcı pandemi ile ilgili herhangi bir güncellemeyi takip etmemektedir. Ayrıca doğru, güncel ve kesin bilgi sağlama konusunda hangi sosyal medya platformuna güvendikleri sorulduğunda, yanıt verenlerin çoğu diğer geleneksel medyaya kıyasla Facebook'un COVID-19 hakkında daha alakalı ve güncel bilgiler sağladığına inanmaktadır. Son olarak bu çalışma, katılımcıların sosyal medyadan bilgi aldığını ve COVID-19 ile mücadele için önleyici davranışları benimsemesini tespit etmiştir..

Anahtar Kelimeler: Sosyal medya, bilgi arama, COVID-19, önleyici davranış, pandemi

Introduction

With the emergence of COVID-19 in the world, there was a tsunami of information about it. Information about COVID-19 spread faster than the virus itself. People started searching for information about the causes of COVID-19, how it spread and how it could be prevented. The first case reported in NZ was in after a 60-year-old person returned from Iran carrying the disease. There was a total of 27 passengers on the flight and all were managed in quarantine. The government was aware more cases were going to be detected over time because of the rapid transmission rate of the virus among people (Jefferies et al., 2020). Six thousand, nine hundred and seventy two confirmed cases, including 28 deaths, were reported by the Ministry of Health in November 2021. NZ implemented one of the strictest lockdowns in the world which helped to decrease the number of COVID cases in less than one month after first lock down (Thirumaran et al., 2021).

COVID-19 has created high levels of uncertainty in people's lives. Initially, the uncertainty and unknown cause of the virus made people worried, and they started seeking information about protecting themselves from this disease. In this uncertainty, people relied on different sources to get information about it (Austin et al., 2012; Case & Given, 2016; Jin et al., 2014; Liu et al., 2011; Musarezaie et al., 2019). Information plays a vital part in this pandemic as having information about COVID-19 can support understanding of prevention and control methods. It also helps in understanding about the ways it is transmitted and strategies for early recognition of a coronavirus infection (Kalayou et al., 2020). At the same time, the information load through social media whose authenticity is not confirmed has the potential to mislead people about their

health. However, a study conducted by Etta et al. (2022) measured COVID-19 infodemic on Facebook and containment measures in Italy, the United Kingdom and NZ. The study revealed that New Zealanders interact more with reliable news sources contrary to social media users in the UK. Furthermore, New Zealanders are more engaged in reliable sources of news. This makes the rationale of conducting the current research to measure the use of social media for seeking information about COVID-19 and people's preventive behaviour among New Zealanders.

Information seeking is described as a process of choosing information sources to reach the required information goals, as well as choosing the best source of information from their choices (Dadaczynski et al., 2021; Robson & Robinson, 2013; Roselina et al., 2021; Zhao & Zhang, 2017). A lot of research has shown that people put a lot of effort into looking for information to gain understanding, resolve uncertainty and attain the knowledge required for decision making (Jacobs et al., 2017; Lambert & Loiselle, 2007; Medlock et al., 2015; Mishra et al., 2015).

With the emergence of the virus in 2020 all over the world, people started searching for information about COVID-19. They started looking for its symptoms, causes, and treatments (Bento et al., 2020). People were more concerned and worried about their health than previously, and the virus has spread exponentially all over the world. During the pandemic, people have faced a flood of information from different sources including TV, newspapers, and various social media (Basoglu et al., 2010; Guidry et al., 2017; Liu et al., 2011). People prefer cheap and easy access platforms for seeking information. In NZ, 98.1% of people have TV access and 89.51% are Internet users (Stats NZ, 2020). This makes these platforms more accessible for people. This means information is very easily and widely available in NZ. Social media is excessively used by people in NZ (Thornton, 2021). However, social media is the most prominent due to its easy access and low cost, which are the two main factors affecting information-seeking behaviour (Cress et al., 2005; Song, 2021; Thai et al., 2018). This study examines the use of social media for seeking information about COVID-19 and its impact on the adoption of preventive behaviour in NZ.

Preventive behaviour against COVID-19 in NZ

The coronavirus has become the biggest health crisis in the world. This coronavirus is unlike the influenza virus or viruses such as SARS-CoV in 2002-2004 and MERS-CoV

because of its extraordinary spreading properties and high mortality rate (Fraser & Blumenstock, 2021; Hunter, 2020; Yang et al., 2020). From the experience of past epidemics, it was clear that only by the adoption of proper preventive behaviour could the spread of the virus be avoided (Zhang et al., 2020; Li et al., 2020; Nguyen et al., 2020; Wise et al., 2020; Yang et al., 2020). The high level of transmissibility, even without any symptoms, and the severity and mortality rate make it critical to control the disease. In addition, the lack of appropriate treatment for this disease makes the situation worse. The only technique to control the virus is to break the chain of infection. For instance, individuals must stay home and follow self-care guidelines as recommended by WHO. Therefore, it is crucial to educate people to improve health awareness and increase levels of information about the disease.

As COVID-19 emerged, governments made rules around social distancing, the wearing of face masks and other measures to prevent the spread. Only by adopting preventive behaviour can we control the spread of the virus (Raude et al., 2020). The most important preventive methods for COVID-19 depend upon individual protective measures including social distancing, the wearing of masks in public places, the covering of the nose and mouth while coughing or sneezing, hand hygiene, avoiding travel in compromised places, the use of tissues to contain respiratory secretions, and isolating and taking proper precautions by individuals showing any symptoms (D'Souza et al., 2020; Gunderson et al., 2020; Saxena, 2020).

The role of social media in COVID-19 information seeking and preventive behaviour

Information communication and the use of social media are the best options to educate people and enhance public health awareness (Merchant & Lurie, 2020). The rapid growth of technologies and mobile media technologies has changed the world. NZ has achieved an outstanding uptake in mobile digital communication. As per NZ Statistics, 82% of the total population of NZ use social media accounts and most of them use social media on their mobile phones (Hinton, 2021). As social media is used on a large scale, it is easy for the government and other agencies to provide health information and precautionary advice about the disease through social media (De Coninck et al., 2020; Sandhu et al., 2016). In Saudi Arabia, the government and private sector worked closely to develop and launch 19 apps and platforms to serve public health and provide healthcare services about COVID-19 (Hassounah et al., 2020). During the pandemic, information from social media can magnify people's fears and urge them to take

preventive actions. Previous scholars have researched information about social media and preventive behaviour (Chauhan et al., 2021; Chin & Wang, 2020; Demuyakor, 2020; Depoux et al., 2020). Social media can make a positive impact on people's preventive behaviour during the pandemic. For example, watching videos on YouTube about preventive actions such as washing hands, using sanitiser and maintaining social distancing encourages people to adopt them in daily life (Soroya et al., 2021). However, these protective measures totally rely on rapid changes in population behaviours which are totally dependent on one's ability to perceive the risk associated with the virus and adapt their behaviour accordingly (Wise et al., 2020). In addition, social media can provide two-way communication. In this way it is easy to spread awareness among people about health and provide enough information about the pandemic (Pakpour, 2020).

People use social media instead of traditional media for gaining information about any infectious disease outbreak (Austin et al., 2012; Roselina & Asmiyanto, 2021; Thai et al., 2014.). It has been found that during the H1N1 outbreak, people depended on Twitter and Facebook for sharing information and their experiences as social media became the primary source of health information (Chew & Eysenbach, 2010). During the COVID-19 pandemic, the use of social media has reached a much higher level compared to the past. There can be many reasons for this. For instance, during COVID-19, countries were locked down to control the outbreak, so people have had to depend on social media to seek information and connect (Liu et al., 2021). Compared to other media such as electronic or print media, due to excessive use, people have quick and easy access to information on social media that has made it more effective during COVID-19. As a result, social media platforms have been utilised for alerting the public about high-risk areas and other information related to the coronavirus. It also provides awareness about health maintenance and treatments. That is why people have become more aware of preventive actions through social media (Yang et al., 2020).

The significance of information literacy during the COVID-19 pandemic to control the virus

With the emergence of COVID-19 in the world, there was a tsunami of information about it. Information about COVID-19 spread faster than the virus itself. People started searching for information about the causes of the virus, how it spreads and how it can be prevented. As social media has become first-hand medium to get information,

people can access a large amount of information without any restrictions. A large amount of information and misinformation is continuously appearing in social media channels (Zakar et al., 2021). Getting the wrong information can be more harmful than helpful. For instance, during this pandemic, much misinformation has been spread through social media. For instance, 300 people were killed in Iran by taking methanol as suggested through social media. In addition, 46 people were infected in South Korean after a church leader sprayed saltwater in their mouths. Such kinds of misinformation create emotional instability among people (Kim et al., 2020). In addition, there have been other examples of misinformation spread during pandemics in the past. For example, during the Zika virus, 5 out of 10 news items were false, which caused more discomfort for people (Sommariya et al., 2018). As a result of misinformation, people either avoid seeking more information, or they try to search for more information from different sources for authentication. In both cases, it has an impact on people's preventive behaviour as individuals become more anxious about the situation. So, some people either start following the false information and avoid seeking further information about the pandemic while others just keep searching for information about it. Misinformation spreads fear and anger among people during the pandemic.

Sometimes research and scientific knowledge has also created controversies and made people more anxious. For example, at the start of the pandemic, WHO did not recommend people use cloth masks until the United States Centre of Disease Control and Prevention (CDC) talked about significance of cloth masks and how they slow down the spread of the virus (Zakar et al., 2021). So, proper information has a fundamental role in creating awareness in society (Chan et al., 2020). Trustworthy, accurate and reliable information is more important than ever at this time (Liu et al., 2020). In NZ, there was rumour spread regarding the outbreak of a second wave of COVID-19 in the country. It was following misinformation about a woman who broke into an isolation facility (Weekes, 2020). This kind of misinformation on social media can cause fear, stress, depression, and anxiety among citizen (González-Padilla et al., 2020).

To avoid false or wrong information, WHO has advised people to consider the sources of their information about coronavirus. As there are no proper treatments for the virus (due to the unknown cause) and a high fatality rate this makes the situation more vulnerable. Only relevant information and preventive behaviours can eliminate the virus. This can be partially achieved by the providing of proper information on social media. In this pandemic, people should have access to all the important information

in a way that supports them in healthy and protective behaviours. Therefore, proper and unfiltered information about COVID-19 is essential to finding, recognizing, and analysing health information and using it in decision making (Patil et al., 2021).

The use of social media in Aotearoa NZ during COVID-19

During the pandemic, according to the data, the use of social media has increased by 60% compared to before the pandemic. During the pandemic, 73.45% of people are spending time on Facebook, and 9.08% on Twitter (Stats New Zealand, 2020). The New Zealand Ministry of Health has an official social account *Unite against COVID-19* that it uses to fight against the pandemic. People can follow this page on Facebook, Twitter, Instagram, and LinkedIn. It is the NZ Government's social platform where all the information about COVID-19 is delivered every day. People can get free access to it on their phones and get all the updates about the COVID-19 situation in the country. All the media conferences about COVID-19 are live on Facebook. Social media is being used to motivate people to take proper precautions through the use of the NZ Aotearoa COVID-19 tracer app, getting vaccinated, staying home if they are sick, and other ways of protecting themselves. On this platform, the NZ Government provides all the information in all languages. People can connect with it 24/7. In addition, the Prime Minister and Minister of Health provide continual updates about COVID-19 on this social account. The NZ Government continues to post videos on YouTube to guide people to take proper precautions. In addition, they are currently encouraging people to get vaccinated. They provide accurate and reliable news about COVID-19 on the *Unite against COVID-19* page and provide advice to prevent any misinformation during this crisis (Unite against COVID-19, 2020). During the pandemic, more than half of the population visited the official government page *Unite against COVID-19* which makes it the biggest source of information compared to other sources (Unite against COVID-19, 2020). According to an AUT Research Centre for Journalism Media and Democracy (JMAD) report, 55% of the NZ population trust information found on social media. The report indicated that New Zealanders rely on social media to get efficient access to information about the coronavirus (Myllylahti, 2021).

Information is one of the most important factors to help control the coronavirus. During any pandemic, only preventive behaviours can control the virus. So, providing enough information about preventive behaviours and ways to implement them is very important for minimising the virus. Educating people about taking precautions, and

getting vaccinated, is the path to controlling the spread of the virus. There is no better way to use social media than to provide sufficient information to citizens to minimise the risk of disease in the country and take proper precautions to control the virus. This research investigates the use of social media to educate people to take proper preventive precautions to break the transmission chain in NZ. NZ has been one of the first nations in the world to overcome the spread of coronavirus. This can encourage the use of social media for health information during any emergency or pandemic.

Aim and Methodology

The aim of this study is to explore how the citizens of Aotearoa NZ are using social media to find information about COVID-19 during the pandemic. This study also examines the information consumption from different social media and the adoption of preventive behaviour during the COVID-19 pandemic. The study addresses the following research question: What is the role of social media in COVID-19 information seeking and its impact on people's preventive behaviour? Information seeking about COVID-19 was measured by a series of questions derived from previous research. Respondents were asked: Do you need information about COVID-19? What is your primary source of getting information about coronavirus? What are the reasons for seeking information about COVID-19? Preventive behaviour was measured by presenting respondents with a list of 13 different precautions to avoid COVID-19 as suggested by WHO. Respondents were asked whether they follow the preventive actions to control the virus in NZ. The items included in the survey included avoiding large gatherings, avoiding visiting crowded places, wearing face masks and others, with a 5-point Likert scale of responses from 1 = always to 5 = never. It also included demographic characteristics such as age, gender, education, and employment status.

The quantitative method was used for this study to examine the use of social media for seeking information about COVID-19 and its impact on the adoption of preventive behaviour in NZ. This research was carried out within the population of NZ, so the NZ population is the target population for this study i.e., 5,002,100 people (Stats New Zealand, 2019). Due to COVID-19, people do not like meeting face to face in order to avoid contact. That is why, in this research, non-random sampling was used in which the questionnaire was distributed online. In the study, 254 respondents took part in the survey. The questionnaire was sent to New Zealanders via email, WhatsApp, Facebook, LinkedIn, WeChat and the ICL school platform (Canvas).

Ethics approval was received from the ICL Ethics Approval Committee for this research project. A participant information Sheet was used to inform the respondents about their rights. They can leave the questionnaire at any moment without explaining why. In addition, respondents can contact the ethics committee via the contact details provided in the form if they need any further information. All the respondents gave their consent.

Findings

Demographic information

The respondents were asked about their demographic characteristics including their age, gender, education, and employment status. Out of a total of 254 respondents who took part in the survey, the majority of the respondents were female, with the proportion of the females at 56.7% and males at 38.6%. As shown in Figure 1 below, 3.5% of the respondents preferred not to answer the question.

Gender

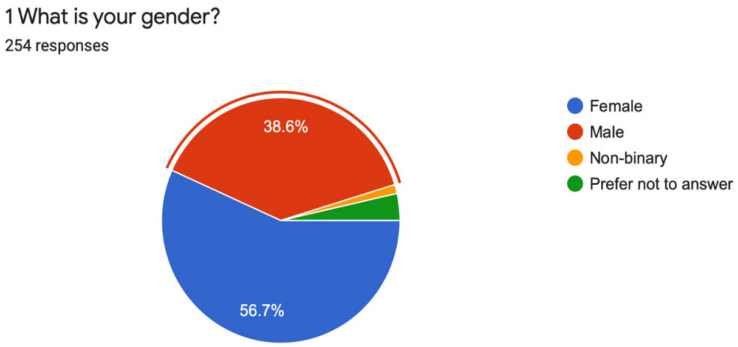

Figure 1: Gender of the respondents

Age

Age is one of the significant factors which impact on information seeking about the pandemic on social media and adopting preventive behaviour. The survey included age groups from 18 to 65 and over, living in NZ. As shown in Figure 2, the largest group

of respondents were from the 25-34 age group at 38.2%, followed by the 35-44 and 18-24 age groups, at 22.4% and 19.7%, respectively. The smallest number of people was from the age group 65 and over, at only 3.5%.

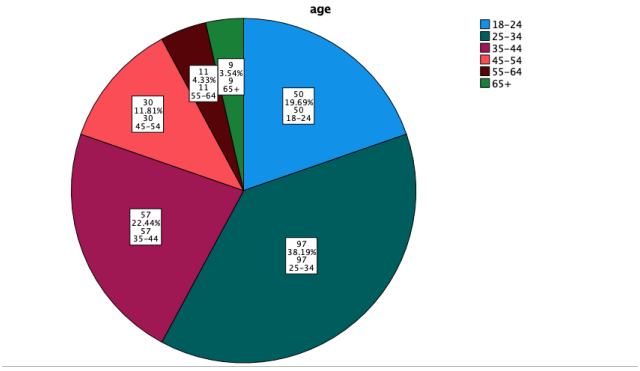

Figure 2: Age of the respondents

Ethnicity

NZ has a diverse culture with people from all over the world living here. As the questionnaire was sent via email, Facebook, WhatsApp, WeChat, etc., people from all ethnicities took part in it. As shown in Figure 3 below, NZ European and Indians were the largest groups, both at 22.4%, followed by Chinese (12.2%), Asian-other (7.5%) and NZ Māori (7.5%). The smallest number of respondents were from the African-South African and African-other groupings with only 2.4 % and 1.6%, respectively, taking part in the survey.

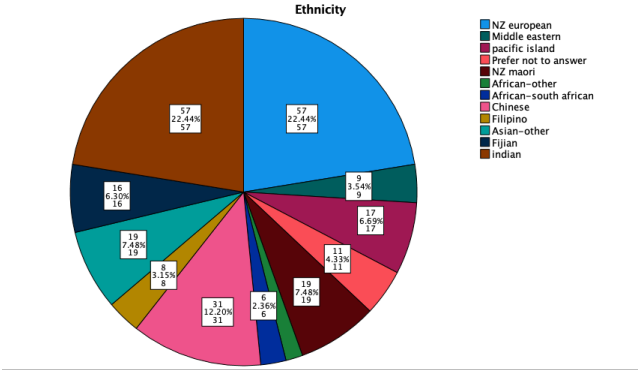

Figure 3: Ethnicity of the respondents

Education

Many studies indicate that there are relationships between people's education levels, knowledge, and adopting healthy behaviour (Maher et al., 2020; Niedzwiedz et al., 2021; Pohjola et al., 2021; Watt & Sheiham, 2012). As Figure 4 below shows, the largest group of the respondents hold master's or Graduate degrees (28%). 18.5% and 14.6 % of respondents went to college and high school, respectively. Only 4.7% respondents did not complete high school. Only 3.9% have completed doctorates.

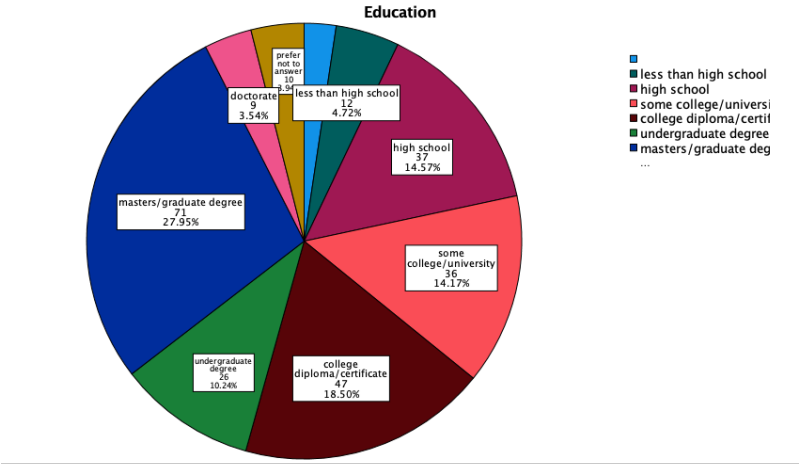

Figure 4: Education of the respondents

Employment

In this health crisis, there are drastic changes in people's lives around the world. COVID-19 is having a great impact on economies and causing upheavals in the labour market (Cerra et al., 2021; Chaudhary et al., 2020; Ezebuilo, 2021; Kenzhin et al., 2021; Tiirinki et al., 2020). Many people have lost their jobs or businesses due to COVID-19. That is why it is one of the major factors out of the demographic characteristics. In the survey, 42.5% of respondents are working full-time, 17.7% are working part time, 15.4% are students, 5.4% of respondents are unemployed and 2.4% are not looking for jobs

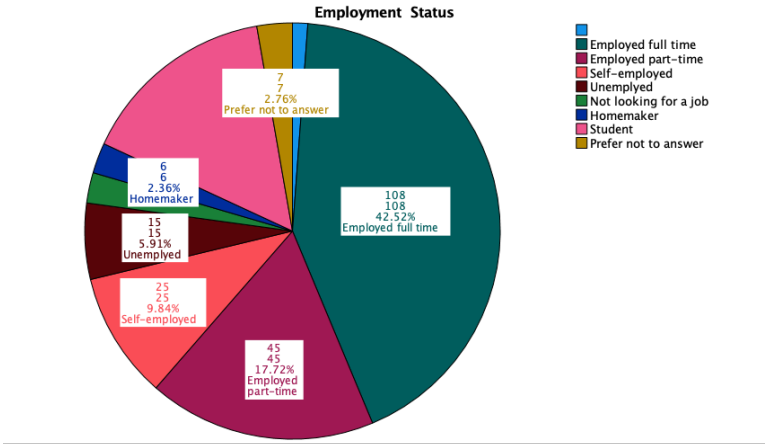

Figure 5: Employment status of the respondents

COVID-19 information seeking

Need for information about COVID-19

In the survey, most of the respondents mentioned they need information about COVID-19. As shown in Figure 6 below, 62.2 % (N=158) of respondents need information about COVID-19, while only 32.7 % (N=83) do not need information about it. However, 5.1% of respondents did not give their responses. As the respondents did not provide reasons for why they did not need information about COVID-19. There may be many reasons for it such as the research was done in July 2021. By this time there was a storm of information about the pandemic everywhere. Other might be its "COVID-19 Skepticism". Denial of the threat posed by COVID-19 is often associated with skepticism about measures imposed to control it. This has led to anti-lockdown movements, which are also rooted in opposition to the restrictions on individual freedoms. Such movements can also be linked to anti-mask movements. Anti-vaxxer sentiment has been reignited as people have been invited to receive their COVID-19 vaccination and, more recently, their "booster" jabs (Burki 2020. P. 462).

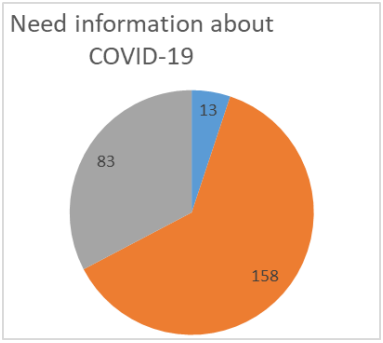

Figure 6: Information about COVID-19

Reasons for searching for information about COVID-19

Four options were given to learn more about the reasons for searching for information about COVID-19. Out of the 254 respondents, the majority of 42.9% look for updates on case reports of COVID-19 all over the world, followed by 30.3% of the respondents who want to know about death reports globally and locally. Fifty respondents are interested in knowing updates on the mode of transmission of the virus. From the 'other' option, 4% of the respondents are searching for updates about the situation in their city, and about vaccination and recovery plans.

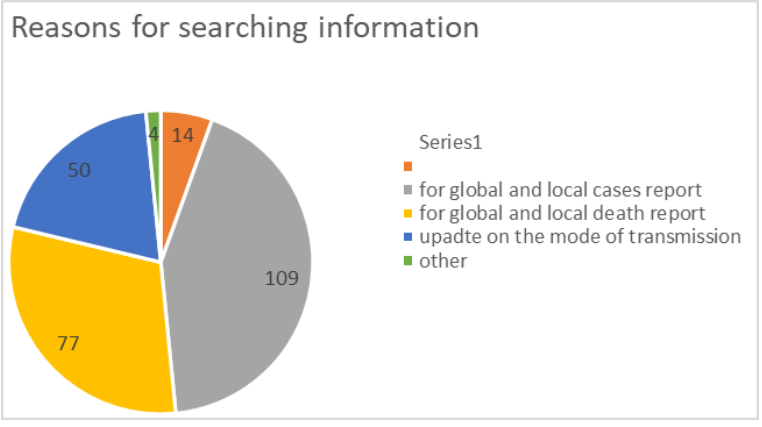

Figure 7: Reasons for searching for information

Primary sources for information about COVID-19

It was found that the largest group of respondents used social media as their primary source of information about COVID-19 at 42.5% of the total and 20.9% of respondents used the government website as their primary source. Similar results were found in the research conducted by Khalesi et al. (2021) in Australia. However, Indonesians did not believe the information given by the government about virus (Pramiyanti et al., 2020).

As shown in Figure 8 below, 13.4% and 12.2% respondents used television and online new websites, respectively, to find information about the COVID-19. In an online environment, television has become less effective in disseminating and educating the public to control the spread of epidemic diseases (Merchant et al., 2021). Only a few people prefer traditional sources such as TV for information about COVID-19. However, in Italy and Finland, television was considered as the first source of COVID-19 (De Coninck et al., 2020; Zanin et al., 2020). On the other hand, only 5.9% of participants follow health websites. Social media and the NZ Government health website (Unite against COVID-19) were the main sources of the information for COVID-19.

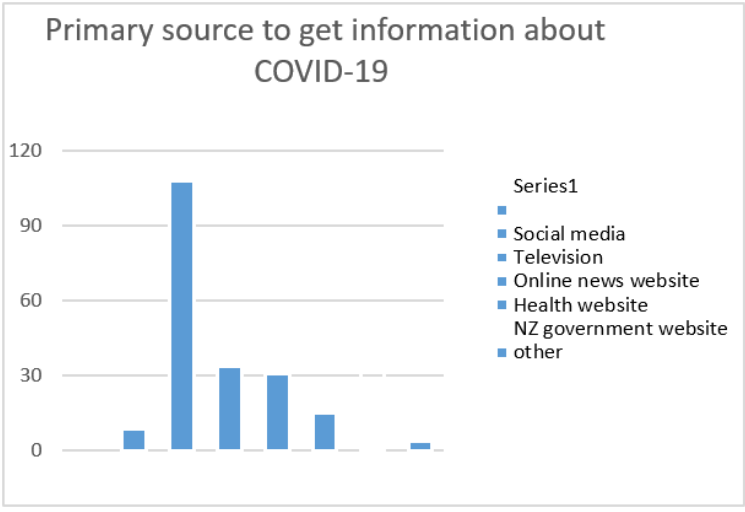

Figure 8: Primary sources for information about COVID-19

The findings of this study highlight the significance of the use of social media to look for health information, especially during COVID-19 when people are in lockdown, and they cannot meet face to face. In this situation, social media provides a useful means of communication between people and public health authorities (Fridman et al., 2020; Lovari, 2020).

Time spent on social media looking for information about COVID-19

Information sources play a vital part in getting information about the pandemic. During COVID-19, people spend more time at home due to lockdowns and have more time and opportunities to look for information about it and to know more about it. During times of risk, people seek more information to deal with the risk. As shown in Figure 9 below, 67.3% of respondents spent 1-2 hours every day on social media looking for information about COVID-19 and 25.6% of respondents spent around 3-4 hours every day. A small percentage 1.97% spent more than 6 hours on social media.

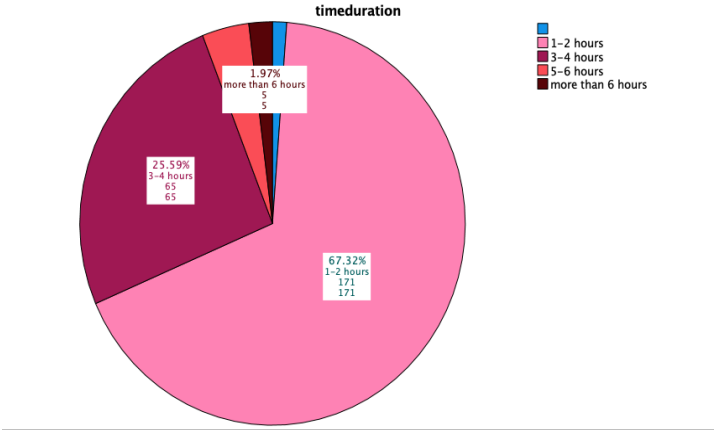

Figure 9: Time spent on social media for COVID-19

Usage of social media to find information about coronavirus

Respondents were asked about which social media platforms they prefer to use to look for information about COVID-19. As indicated in Figure 10 below, 84.5% of the respondents preferred Facebook and 20.2% were getting information from Instagram. 17.2% of the respondents chose WhatsApp and 10.5% chose WeChat to get information

about COVID-19. According to Zhang et al. (2017), there is a high possibility of people accessing health information through WeChat.

It is quite interesting that the 12.2% and 10.5 % of respondents received information about COVID-19 from LinkedIn and Tik Tok, respectively. Tik Tok, a video based social media platform has recently been described as a new potential platform to disseminate health information during the COVID-19. In fact, a search with the hashtag 'coronavirus' on the Tik Tok app received 90 billion views which reflects its extensive reach and impact on public health that is considered beyond the pandemic as well (Comp et al., 2021; Eghtesadi & Florea, 2020).

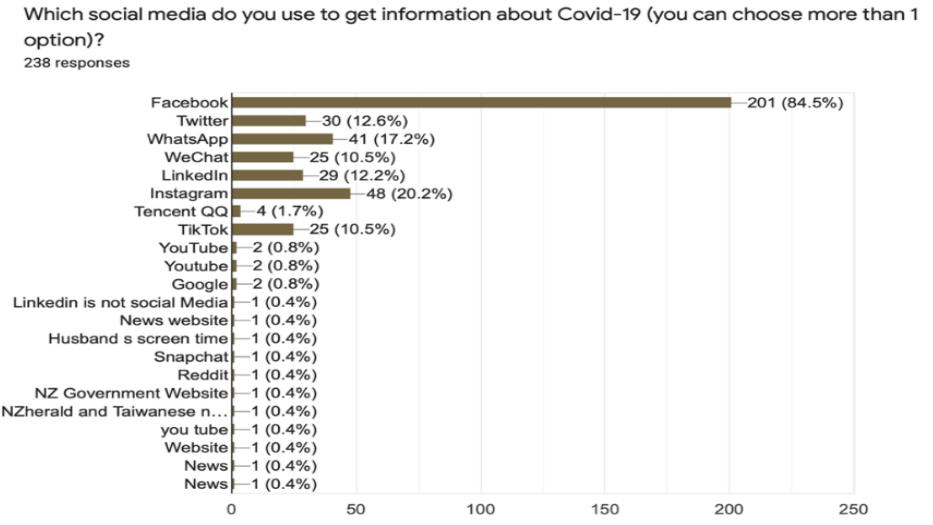

Figure 10: Usage of social media to find information about coronavirus

The following of updates about COVID-19

In the study when respondents were asked whether they followed all updates about COVID-19, 33.9% always follows the updates. 24.8% follow often and 22.0% follow sometimes. Only 4.7% respondents never follow any updates about COVID-19.

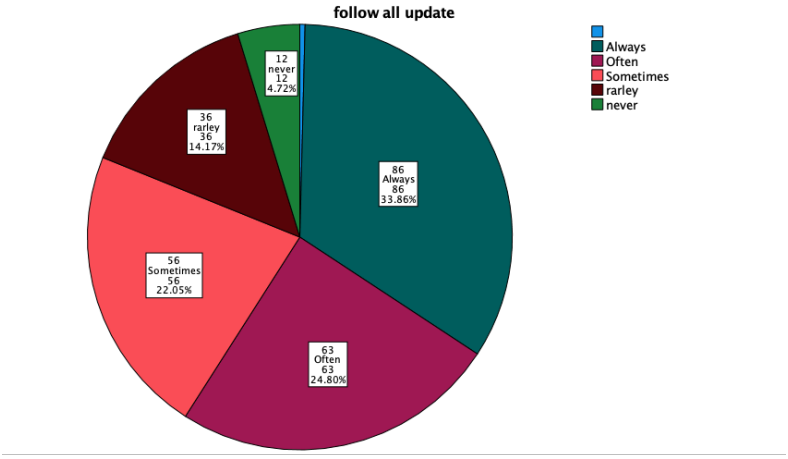

Figure 11: Following of updates about COVID-19

Social media as an information provider

Timely information about COVID-19 on social media

During the pandemic, information plays a pivotal role. People look for information about COVID-19 and how to control it. Up to date and accurate information is essential, as misinformation can cause problems instead of educating people (Ittefaq et al., 2020). In addition, information should be updated as many people follow all the updates about COVID-19. It was found that 33.9% of the respondents thought that they often got timely information through social media. This was followed by 28.3% of respondents who thought that they always got timely information. As shown in Figure 12, only 6.7% and 1.6% of the respondents think they did not get timely information from social media about COVID-19.

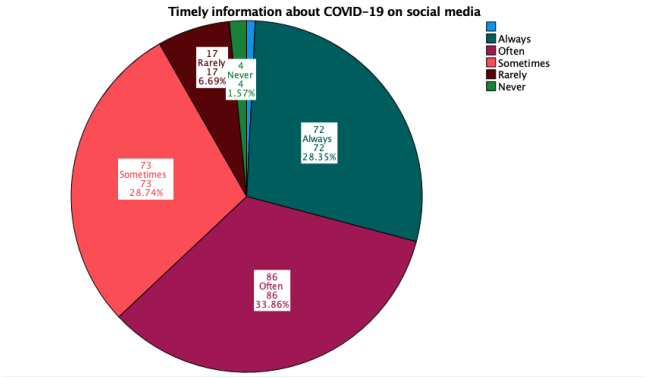

Figure 12: Timely information from social media about COVID-19

Sufficient and updated information about COVID-19 on social media

During this pandemic, getting sufficient and up-to-date information about the virus, its cause and prevention are very important in dealing with the situation (Bavel et al., 2020; Gates, 2020). That is why, in the questionnaire, respondents were asked whether they get enough information about COVID-19 on social media. As shown in Figure 13, the majority of responses indicted those respondents thought they got sufficient information often, followed by 26.8% of respondents who thought they always get sufficient information about COVID-19 from social media. However, 13.4% and 4.7% of respondents, respectively, thought they hardly or never get enough information about COVID-19 on social media.

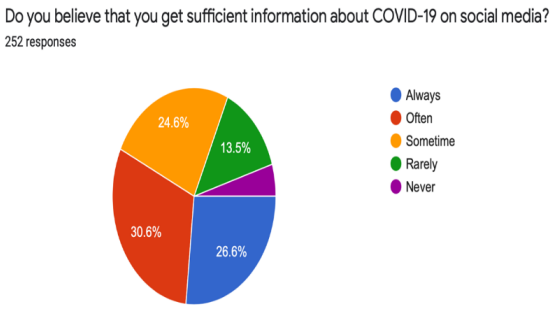

Figure 13: Sufficiency of information about COVID-19 through social media

Most people believe they get information about the disease through social media, but according to Chan et al. (2020), there are limitations to the information disseminated via social media as this information is not peer reviewed by experts. During the pandemic, this can cause more harm than good.

Information about COVID-19 provided by various social media.

From the research, it was found that most of the respondents were of the opinion that Facebook provides current and accurate information. This study showed that 16.8% and 14.4% of the respondents beleived that Twitter and WeChat, respectively, provide up to date and accurate information about the pandemic.

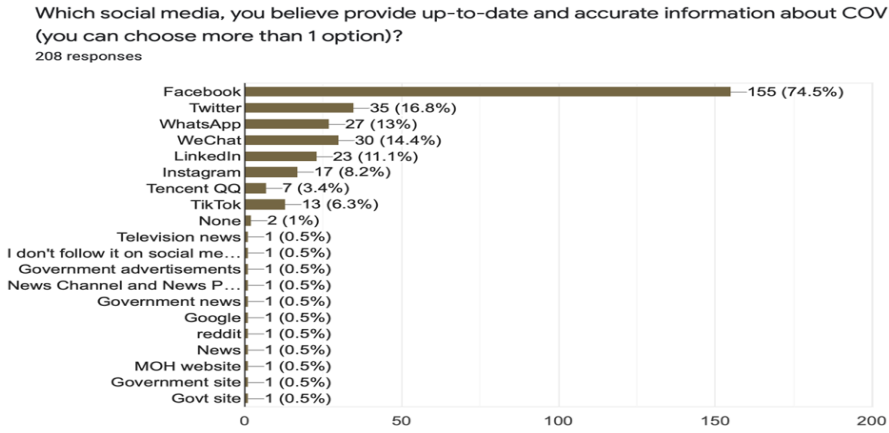

Figure 14: Information provided by various social media about COVID-19

Trust on various social media for information about COVID-19

The respondents were asked about which social media they trust more. As Figure 15 indicates, 74% of the respondents trust in Facebook and 14.6% and 13.7% of the respondents trust the information received from LinkedIn and Twitter, respectively. Instagram and TikTok are not very old social media, however, the data reveals 8.7% and 6.8% respondents, respectively, trust the information received from Instagram and TikTok as well. Only 1% of respondents prefer online news channels. In the survey, respondents did not mention any specific online news channels in NZ Aotearoa.

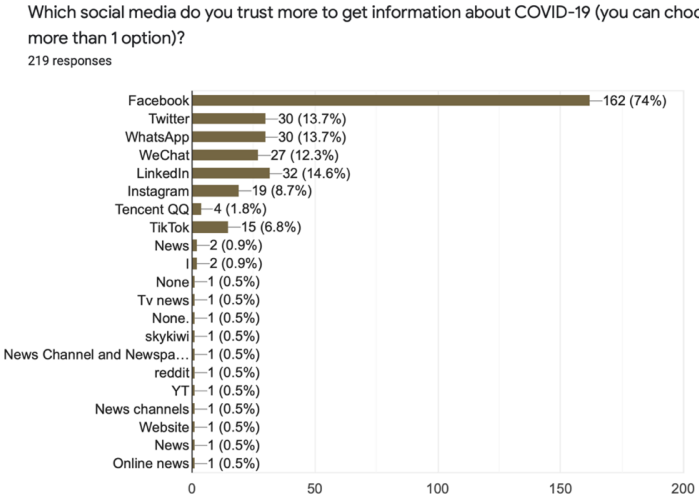

Figure 15: Trust in COVID-19 information on social media

Social media creating social alarm about COVID-19

Social alarm stands for a reliable communication among people in times of distress and alerts them about the situation. In this pandemic, it is essential that people be proactive. Social media plays a significant part in providing information and alerts about the pandemic. In this study, it was found that the majority of the respondents at 79.6% thought that Facebook was alerting people about COVID-19. In addition, WhatsApp (18%), Twitter (16%), WeChat (13%) Instagram (10.4%) and LinkedIn were also playing a role in creating social alarm regarding COVID-19. Only 0.5% of the respondents considered TV a news source creating social alarm.

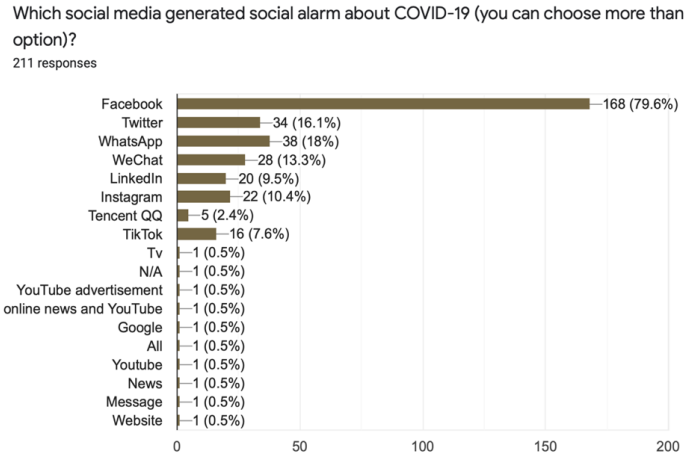

Figure 16: Types of social media generating social alerts about COVID-19

Belief that social media provide unfiltered information

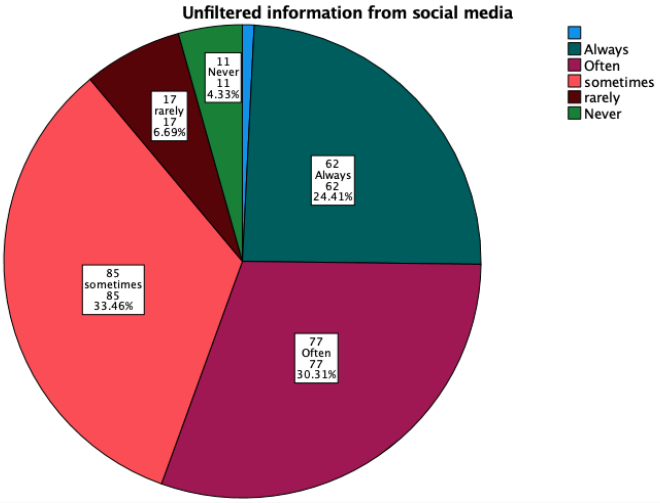

Figure 17: Unfiltered information from social media

From the study, it was found that most respondents thought they got unfiltered information only sometimes. Figure 17 shows that 24.4% of respondents thought they

always got unfiltered information from social media about COVID-19. However, 4.3% of the respondents thought that they never got unfiltered information from social media.

Influence of information consumption through social media on preventive behaviour

To control the pandemic, there are a few precautions that can stop the spread of the virus. In this study, 13 precaution statements were included in the questionnaire and respondents were asked to answer whether they follow these precautions using a five-point Likert scale (1 = always to 5 = never). As shown in Figure 18, most people are serious about preventive actions and follow all the precautions to stop the virus. In the survey, most of the respondents either always or often followed the rules. Figure 17 below shows the frequency and percentages of responses for all 13 preventive statements separately.

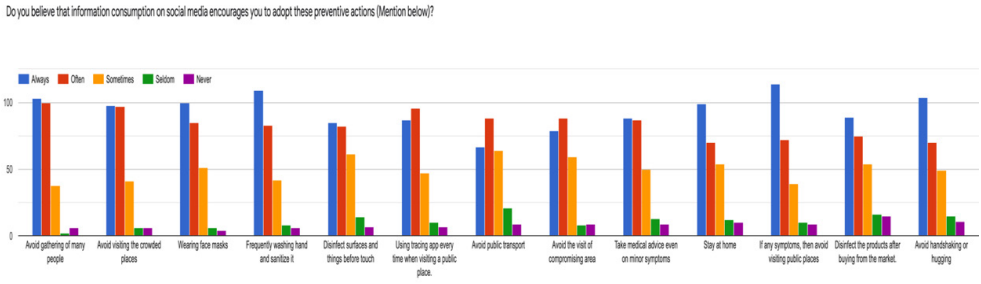

Figure 18: Preventive Behaviours

Figure 18 above shows that the majority of respondents always sanitize surfaces before using them, 32.7% of respondents often disinfect surfaces and only 7% of the respondents never follow the rule. Regarding hand washing and hand sensitizing, 42.9% of respondents always washed their hands and sanitized them. Washing and sanitizing hands are the most common and significant factors in preventing disease. From the results, it was found that only 3.1% and 2.4%, respectively, of respondents seldom or never washed their hands. Washing hands can help in preventing COVID-19 (Mao et al., 2021; Ramesh et al., 2020). Wearing a face mask is another mandatory factor in avoiding close contact between people (Rabby et al., 2020; Ramesh et al., 2020). Figure 18 shows that 39% and 33.9% of the respondents always and often wear masks

to protect themselves from the virus, respectively. Only 1.6% of the respondents said they never wear face masks.

As it is known that coronavirus spreads from humans to humans through close contact one should avoid visiting crowded places. This study showed that the majority of respondents always and often avoided visiting crowded places. As shown in Figure 18 above, the majority of the respondents avoided going to covered places and only 2.4% of respondents did not avoid crowded places. Furthermore, for prevention, parties or celebrations with large numbers of people should be avoided. The second outbreak of coronavirus in NZ spread from a church group (Weekes, 2020). Figure 18 above shows that 40.6% and 39.4%, respectively, of the respondents always or often avoided large gatherings. However, 2.4% of the respondents did not avoid them. As Figure 18 indicates, most respondents avoid places where there were more chances of acquiring the virus. 35% and 31.1% of the respondents, respectively, often or always avoid visiting compromised areas. Only 3.5% and 2.8%, respectively, of the respondents never or seldom avoided visiting these areas. Figure 18 shows that 44.9% of the respondents always try to avoid visiting public places, while 15.4% of the respondents avoid visiting public places only sometimes. However, 3.5% of the respondents said they never followed this rule.

During the pandemic, people are advised to stay home so as to avoid close contact with infected people and visits to compromised areas (Whitworth, 2020). As Figure 18 shows, 39% and 28%, respectively, of the respondents always or often preferred to stay home during times of risk. The report indicated that 3.9% of the respondents said they never stayed at home during times of risk.

Travel by public transport is a common mode of travel across the globe. However, travel by public transport is another area of close contact between human beings as well as surfaces enhancing the transmission of the coronavirus (Anzai et al., 2020; Hu et al., 2021; Rodríguez-Morales et al., 2020). In NZ, people use public transport on a large scale. Figure 17 shows that the majority of respondents tried to avoid public transport while 25.6% of the respondents sometimes avoid it. The study showed that 7.9% of the respondents seldom avoid public transport. As shown in Figure 18, it was identified that 37.6% and 34.6% of the respondents, respectively, often and always use the tracing app, while 3.9% and 2.8% of the respondents, respectively, seldom and never used the tracing app. During this pandemic, the tracing app is one of the major mobile software applications to help stop the virus (Hassounah et al., 2020). The NZ Government has been encouraging

people to use the tracing app wherever they go. It helps people to know about any compromised areas or if they have encountered any infected person.

When people meet, they usually hugged or shook hands prior to COVID-19, but during this pandemic, people were advised to avoid hugging and handshaking to control the spreading of virus (Tejada, 2020; Obilor & Awogu, 2021; Sarwar & Imran, 2021; Shrestha et al., 2021). From the data, it was found that the majority of respondents always avoid hugging or handshaking. However, 5.9% and 4.3%, respectively, of the respondents hardly or never avoid hugging and handshaking.

The symptoms of COVID-19 and flu are quite similar. So, people sometimes confuse the symptoms with flu. Figure 18 shows people are quite active in seeking online medical information. From the survey, it was found that majority of the respondents always or often search for medical information even with minor symptoms. However, 4.7% and 3.5%, respectively, of the respondents do not seek medical information.

Information received from social media and preventive actions

As in this study, a 5-point Likert scale was used to rate the frequency of preventive behaviours from 1 = always to 5 = Never. The median value is 2.5. If the mean value is less than 2.5, it shows people are concerned about it. The mean values of need of information about COVID-19 and its preventive measures are given in Table 1 which shows the respondents' priority towards preventive measures for combating COVID-19.

Table 1: Information received from social media and preventive actions

	Mean	Std. Deviation	N
Avoiding large gatherings	1.83	.888	249
Frequent hand washing and use of sanitizer	1.87	.970	248
Avoiding visiting crowded places	1.89	.931	248
Avoiding visiting public places	1.89	1.056	244
Wearing face masks	1.90	.921	246
Using the tracing app	2.00	.984	247
Staying at home	2.03	1.084	245
Avoiding handshakes or hugs	2.04	1.119	249
Seeking medical advice	2.06	1.042	247
Avoiding visiting compromised areas	2.09	1.007	243
Disinfecting surfaces	2.10	1.026	249
Disinfecting purchases	2.17	1.162	249
Avoiding public transport	2.26	1.055	249

The positive effects of social media are people adopting more preventive actions to stop the virus, including avoiding large gatherings, not visiting compromised areas, wearing masks and other actions. All these factors are essential in preventing the spread of this disease. Other researchers working in this area have concluded that preventive actions are essential in stopping the virus. This is the only way to break the chain and stop the virus (Yemer et al., 2021; Liu et al., 2021; Firouzbahkt et al., 2021; Ahmad & Murad, 2020) and social media play an effective role in this regard.

Discussion and Conclusion

Gender is reported to influence the information processing from social media and affect attitudes and behaviours related to pandemics. In the present study, females are more actively seeking information from social media about COVID-19. Most of the respondents look for updates about COVID-19 cases globally and locally. Secondly, this study found that during the COVID-19 pandemic people are spending more time on social media. A majority of the respondents spend 3-4 hours per day on social media. There is a direct relationship between the time spent accessing information on social media and risk perception. In addition, when respondents were asked which social media platforms they prefer to use to look for information about the pandemic, most people prefer Facebook. From the survey, it was found that most people follow all the updates about COVID-19 and the majority of people believe that they receive timely and updated information through social media. Timely information is necessary to know about causes, treatment, and other aspects of the pandemic to control the virus (Kaplan et al., 2020; Lal et al., 2020; Mitchell et al., 2020; Wang & Lund, 2020). Only a few people don't follow any updates about the pandemic. In addition, when they were asked which social media platform, they trust to provide true, up to date, and accurate information, most people believe that Facebook provides up-to-date information. People also trust Twitter, WeChat and WhatsApp to get information about COVID-19 (Eghtesadi & Florea, 2020; Ting et al., 2020; Zhang et al., 2017). The Singapore Government has partnered with WhatsApp to allow the public to receive accurate information about COVID-19 and government initiatives (Ting et al., 2020). According to Boon-Itt and Skunkan (2020), Twitter is a good communication channel for understanding both public concern and public awareness about COVID-19. Lastly, this study identified the adoption of preventive behaviours by the respondents.

Social media has become the primary source to look for information about the pandemic (González-Padilla & Tortolero-Blanco, 2020). The frequency of using media and sources of information influence risk perception and perceived media role. Social media use significantly increases preventive behaviour (Oh et al., 2021). Moreover, when seeking information, people also use the NZ Government platform and other websites (Khalesi et al., 2021).

Trust is an important factor in information seeking and using this information to take preventive action (Hesse et al., 2005). Especially during COVID-19, the reliability of information sources is important as misinformation can cause worry and anxiety among people (Cook, 2020; Kim, et al., 2020). That is the reason respondents were asked which social media they trust more. It has been found that social media is trusted to provide sufficient and accurate information about COVID-19, even though the use of social media can have a negative impact on mental health due to the flood of information on it during COVID-19 (Abbas et al., 2021; Brailovskaia et al., 2021; Brailovskaia & Margraf, 2021; Moradi et al., 2020). A study in the United Kingdom found that this overload of information about COVID-19 on social media can cause more fear about the disease. Moreover, a similar study conducted in Hong-Kong found that the use of social media during health crises creates more anxiety and worry (Neely et al., 2021).

Information sufficiency, perceived information gathering capacity and trust of the information channel are affected to one extent or another by affective responses to the risk, knowledge and information gathering about the risk (Griffin et al., 1999a; 1999b; 2005; 2008). The use of social media platforms can positively influence awareness of public health behaviour changes and their protection against COVID-19 (Al-Dmour et al., 2020). There is a strong connection between online health information and offline people's health actions (Khamis & Geng, 2021). Only adopting preventive behaviour can control the virus. To control the pandemic, there are a few precautions that can stop the spread of the virus and social media can play an effective role in disseminating information and creating awareness in this regard.

This study can provide support for some practical applications. Through the research it was found that in NZ more people use social media compared to other sources of information. This suggests that health communication through social media can increase preventive behaviour. The study proved that COVID-19 information on different social media channels can promote preventive behaviour directly. With an understanding of

people's trust in social media, authorities can educate people using different sources to reach target audiences. Moreover, in this study it was found that people seek more information during times of risk and the use of information sources increases during this time. Therefore, authorities should provide accurate and timely information through social media. These findings can help health departments communicate information through various social media to combat this pandemic.

With respect to the findings and their applications, it is important to discuss the limitations of the research. This study has many limitations. The first major limitation of this study is the sample size. Due to time and resource constraints, it was not possible to conduct this research with a larger number of respondents. This study explores general information seeking rather than impact of misinformation disseminated by social media on behaviour during COVID-19. This can be explored by further analysing an individual's actual information seeking behaviour using interviews and other experimental methods. In addition, this study was carried out during the COVID-19 pandemic, when people did not like to meet face-to-face. So, this study could not explore social cognitive theory by observing to see if people adopt preventive behaviours. This study used an online survey which might have introduced sampling bias as elderly people are less likely to use the internet and respond to online questionnaires. So, the result of this study may not be generalisable for all people in NZ. Lastly, this study did not explore people's emotions due to misinformation of social media during the pandemic. People feel more worried during times of risk. Due to a lack of time, the study did not explore how social media can provide mental support for people and help them connect to their family and friends. Moreover, this study also did not explore information overload on social media during COVID-19. These overloads of information can make people more worried and create anxiety. Worry and anxiety can cause people to avoid seeking information.

Peer-review: Externally peer-reviewed.
Conflict of Interest: The authors have no conflict of interest to declare.
Grant Support: The authors declared that this study has received no financial support.
Author Contributions: Conception/Design of study: Z.S.A., J.D.; Data Acquisition: Z.S.A., J.D.; Data Analysis/Interpretation: Z.S.A., J.D.; Drafting Manuscript: J.D.; Critical Revision of Manuscript: Z.S.A.; Final Approval and Accountability: Z.S.A., J.D.

Hakem Değerlendirmesi: Dış bağımsız.
Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemiştir.
Finansal Destek: Yazarlar bu çalışma için finansal destek almadığını beyan etmiştir.
Yazar Katkısı: Çalışma Konsepti/Tasarımı: Z.S.A., J.D.; Veri Toplama: Z.S.A., J.D.; Veri Analizi /Yorumlama: Z.S.A., J.D.; Yazı Taslağı: J.D.; İçeriğin Eleştirel İncelemesi: Z.S.Z.; Son Onay ve Sorumluluk: Z.S.A., J.D.

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