Mental Health, Information and Being Connected: Qualitative Experiences of social media use during the Covid-19 pandemic from a trans-national sample

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Abstract

Background

Due to the Covid-19 pandemic and the strict national policies regarding social distancing behavior in Europe, America and Australia, people became reliant on social media as a means for gathering information and a tool for staying connected to family, friends and work. This is the first trans-national study exploring the qualitative experiences and challenges of using social media while in lockdown or shelter in place during the current pandemic.

Methods

This study was part of a wider cross-sectional online survey conducted in Norway, UK, USA and Australia during April/May 2020. The manuscript reports on the qualitative free text component of the study asking about the challenges of social media users during the Covid-19 pandemic in UK, USA and Australia. 1991 responses were included in the analysis. Thematic analysis was conducted independently by two researchers.

Results

Three overarching themes identified were: Emotional/Mental Health, Information and Being Connected. Participants experienced that using social media during the pandemic amplified anxiety, depression, fear, panic, anger, frustration and loneliness. They felt that there was information overload and social media was full of misleading or polarized opinions from which was difficult to switch off. Nonetheless, participants also thought that there was an urge for connection and learning which was positive and stressful and the same time**.**

Conclusion

Using social media while in shelter in place or lockdown could have a negative impact on the emotional and mental health of some of the population. To support policy and practice in strengthening mental health care in the community, social media could be used to deliver practical advice on coping and stress management. Communication with the public should be strengthened by unambiguous and clear messages and clear communication pathways. We should be looking at alternative ways of staying connected.

Keywords: social media, Covid-19, cross-sectional, trans-national, mental health, loneliness, pandemic

Introduction

Since the Spanish flu over a century ago, the Covid-19 pandemic is the greatest and possibly the deadliest threat to public health worldwide (PMO 2020; WHO 2019). The pandemic triggered new national policies on public behavior in most countries throughout Europe, America and

Australia. Social distancing became the main public behavior policy apart from the hygiene rules (Ministry of Health 2020; Norwegian Institute of Public Health 2020).

The severity and scale of social distancing policy was exceptionally strict and included severe restrictions in many aspects of daily living for the majority of the population. Some of the restrictions were that people should stay at home in order to minimize contact and spread of the disease and leave their homes only in exceptional circumstances. In addition, nurseries, schools and universities were closed, with online study becoming the new norm overnight. Flights and non-essential travels were cancelled, as well as sports, religious and cultural events. Non-essential businesses that require physical contact were also closed. Thus, the majority of people in Europe, United States of America (USA) and Australia were urged into a lockdown, shelter in place or a quarantine (see appendix).

While there is evidence that quarantine can be a useful measure to prevent the spread of communicable diseases (Tognotti 2013), the psychological impact of a lockdown and shelter in place is immense. The negative psychological effects can include post-traumatic stress symptoms, confusion, fear about infection, frustration, boredom, inadequate supplies, inadequate information, financial loss and stigma, all with the possibility of long-lasting effects (Brooks at al 2020; Mukhtar 2020; Torales et al 2020). However, previous research with focus on consequences and social distancing or a quarantine due to different reasons, revealed that some of the key factors that can mitigate the negative consequences of a quarantine are: social interaction and support, keeping people informed and reducing boredom and improving

communication (Reblin & Uchino 2008, Brooks at al 2020; Wang et al 2020). Social interaction

and support is found to serve as a 'buffer' between stress and mental health (Berkman et al

2000; Pan et al 2005), and keeping people well informed can help moderate the fear that most

people feel when exposed to a worrying infectious disease (Rubin at al. 2016). Boredom and

insolation can cause a lot of distress during quarantine. However, in addition to having a

practical advice on coping and stress management techniques, having a mobile phone and

using social media to be connected with family and friends has shown to be essential in

reducing the effects of immediate anxiety and longer- term distress (Rubin et al 2005; Manuell

2011; Maunder 2003). Thus, social media could play a crucial part in communication in a crisis,

allowing people to stay in touch and reassure their loved ones, as well as to stay informed on

local and global events.

However, using social media is not without its drawbacks. Since the Covid-19 outbreak, social

media has played a pivotal role in disseminating information about the pandemic as well as a

tool to overcome the constraints of social distancing while providing solidarity and support

resources for those in lockdown situations. This was first evident in China after the outbreak,

where emphasis was on using social media in such a way that provided opportunity to

communicate the reasons for the quarantine, provided reassurance and practical advice in

order to prevent rumors and panic (Depoux et al. 2020). In the same time, the World Health

Organisation (WHO), the Centers for Disease Control and prevention (CDC), scientific journals

and health organizations worldwide used different social media platforms to inform and guide

the public in the pandemic. However, in addition to the official guides, the social media

platforms such as Facebook, Twitter, YouTube and Instagram provided access to an extraordinary amount of information that was contradictory to the official and perhaps amplified rumors and misinformation. This is because the social media algorithms account for people preferences and facilitate content promotion and therefore spread of information (Kulshrestha et al. 2017). This can then shift the worldview, can construct different social perceptions and can change the narratives particularly when issues are controversial (Cinelli et al. 2020). The paradigm shift as a result of this can influence policy making, political communication and overall, the development of a public debate (Starnini et al. 2016). Despite the efforts of social media platforms to direct users to WHO, CDC and websites of local health authorities for the correct information (Merchant 2020), evidence suggest that heightened media exposure of crisis information is associated with increased distress, worry and long term impaired physical and mental health (Thompson et al. 2017).

Furthermore, recent literature suggest that frequency, length and diversity of media use and exposure were positively associated with depressive symptoms and both unspecific and COVID-19-related anxiety (Bendau et al. 2020). In addition, Scopelliti, et al (2021)point out that mild use of social media can have positive affect on people while excessive social media use can increase the negative consequences of social media use.

While there have been a number of studies exploring various aspects of social media during the Covid-19 such as social media for rapid knowledge dissemination (Chan et al. 2020), the impact of Covid-19 on psychosocial consequences (Sijia et al. 2020) or the growth of misinformation via social media during the pandemic (Cinelli et al. 2020), this is the first study to our knowledge

looking at the qualitative experiences and challenges of using social media amid the pandemic by the three named nations. Thus, this study provides an in depth analysis of the experiences and challenges associated with using social media by the multinational population in a time window after the start of the pandemic where most of the people relied on social media as a means for gathering information and a tool for staying connected to family, friends and work. The aim of this study was to explore the trans-national participants' experiences and challenges of using social media while in lockdown or shelter in place during the initial stages of the Covid19 pandemic.

Methods

The consolidated criteria for reporting qualitative research (COREQ) was used to guide the structure of this paper (Tong 2007).

Study design

This qualitative study was part of a wider trans-national on-line survey about mental health, wellbeing, loneliness and the use of social media during the pandemic (Geirdal et al 2021). The cross-sectional survey was made available between April and May 2020. Invitations to take part in the survey were placed on social media such as Twitter, Facebook and Instagram in Norway, USA, UK and Australia. Data was collected for approximately 3-4 weeks period in each country. Each country had a landing site for the survey at the researcher's respective universities;

OsloMet - Oslo Metropolitan University, Norway; University of Michigan, USA; University of Salford, UK; and the University of Queensland, Australia.

Participants and setting

The initiator of the project was AØG from OsloMet, however each participating country/university had a project lead adhering to local ethical approvals. Participants in the study were the general population in the participating countries. The participants fulfilled both of the inclusion criteria: 1) be of age of 18 or over and 2) speak Norwegian or English. Any respondent who did not meet the above criteria was excluded. The introductory information accompanying the survey explained the purpose and anonymity of the study and consent was obtained by completing the first page of the survey. The study was thereby quality assured and approved by OsloMet (20/03676) and the regional committees for medical and health research ethics (REK, 132066) in Norway, reviewed by the University of Michigan Institutional Review Board for Health Sciences and Behavioral Sciences (IRB HSBS) and designated as exempt (HUM00180296) USA, by University of Salford Health Research Ethics (HSR1920-080) in UK, and University of Queensland (HSR1920-080; 2020000956) in Australia.

Questionnaire

The online questionnaire was developed and designed by the lead country in collaboration with the partner countries. Different survey platforms were used in the countries: Webform (Nettskjema) in Norway, Qualtrics in USA and Bristol Online Survey platform (onlinesurveys.ac.uk) in UK and Australia. Webform, Qualtrics and the Bristol Online Survey are secure survey development tools (Utne 2019; Kiran 2018; Graham 2017). The survey had 41

questions including demographic variables, COVID-relevant items and well known reliable and

validated questionnaires related to mental health, wellbeing and quality of life in addition to an

open-ended question. Only the responses from the qualitative open-ended question are

presented in this paper (see research question below). All open responses were reviewed in

detail to identify common themes. The Norwegian version of the questionnaire did not include

the open-ended question thus the Norwegian population was therefore excluded from the

results and discussion.

Survey question

1. During this COVID-19 pandemic, what challenges have you experienced in using social

media?

Analysis

All data was pooled together. Two researchers (MS, JL) independently coded the data to

minimize subjectivity. All data were analysed using a thematic analysis approach (Broun &

Clarke 2006). Thematic analysis is a rigorous method consisting of 6 phases providing structure

for the data to be organised, coded and themes to be identified. Firstly, the two researchers

read all the data twice in order to get familiarized with it. For phase two and three, the

researchers generated initial codes and then searched for themes among the codes

independently. The researchers then met to discuss their findings and to extract the main

themes. After this, phase 4 and 5 followed where MS and JL met and reviewed (checked if the

themes worked in relations to the code extracts and the overall data set), defined and named

(further analysis to refine the specifics of each theme) the themes before agreeing on the final

names of the key themes and sub themes (see Table 2). A report (phase 6) on the findings was

then presented to all researchers and discussed.

Rigour

Trustworthiness and rigour are often the criteria by which qualitative studies are judged,

meaning that integrity and competence have to be demonstrated within a study (Creswell

2013) These criteria were maintained by the analysis being conducted by two researchers

independently. MS and JL met at three points (after the third, fifth and sixth step) to discuss

findings and settle any potential disputes – there were none in this case. Rigour with sampling

was ensured through maximum variation sampling (diverse sample) to make the data

"information rich" (Patton 2005).

Results

Demographics

Out of a total of 3810 participants that responded to the wider survey, 1991 participants

answered the qualitative question and were included in qualitative analysis (Table 1).

Table 1. Participants characteristics

	Total N=1991	UK N=1013	USA N=801	Australia N=177
Age group				
18-29	18.5%	16.4%	18.4%	30.5%

30-39	18.5%	18.1%	19.2%	17.5%
40-49	20.7%	24.3%	17.2%	15.8%
50-59	20.8%	22.8%	18.7%	18.6%
60+	21.6%	18.5%	26.5%	17.5%
Gender				
Female	80.9%	85.4%	75.9%	77.4%
Male	17.0%	13.2%	21.3%	19.2%
Other / prefer not to say	2.2%	1.4%	2.9%	3.4%
Area of residence				
Rural or Farming	7.2%	5.7%	10.1%	2.3%
Small town	22.2%	16.8%	31.1%	13.0%
Medium Size City	37.0%	37.9%	40.8%	14.7%
Large City	33.6%	39.6%	18.0%	70.1%
Education				
High school or below	8.7%	7.7%	9.5%	10.8%
Technical/associate degree	19.2%	23.2%	13.1%	24.4%
Bachelors degree	32.4%	34.1%	32.7%	21.6%
Masters/doctoral degree	39.6%	35.0%	44.7%	43.2%
Live with someone				
Yes	82.0%	83.0%	80.2%	84.7%
No	18.0%	17.0%	19.8%	15.3%
Currently in work				
Yes in a Full-time job	45.9%	46.2%	46.6%	40.7%
Yes, in a Part-time job	22.1%	23.8%	17.4%	34.5%
No	32.0%	30.0%	36.1%	24.9%
How often have you used social media after COVID-19 pandemic started?				
Weekly or less	1.6%	1.7%	1.3%	2.3%
A few times a week	3.0%	3.8%	1.8%	3.4%
Daily	24.5%	26.2%	20.6%	32.8%
Several times daily	70.9%	68.3%	76.4%	61.6%

Themes emerged

Three major themes emerged at the final point of analysis: Emotional/mental health,

Information and Being connected. The themes were similar across the participating countries.

Further to the main themes, separate sub themes unfolded (see Table 2). The themes and sub

themes were inter-connected rather than independent (see Figure 1).

Table 2. Themes and subthemes

Themes	Subthemes
Emotional/mental health	Anxiety, depression Anger, frustration Panic, fear Loneliness, isolation
Information	Information overload Volume of misleading information Polarity Cannot switch off
Being connected	Connection, communication Learning

Emotional and mental health

The data suggested that the participants were concerned about the impact of social media on

their emotional and mental health. Four subthemes of emotional/mental health were identified

in the coding process. The categories that were consistently identified by the participants as

being associated with their mental health were: anxiety and depression, anger and frustration,

panic and/or fear and loneliness. The foundations for these subthemes are described separately

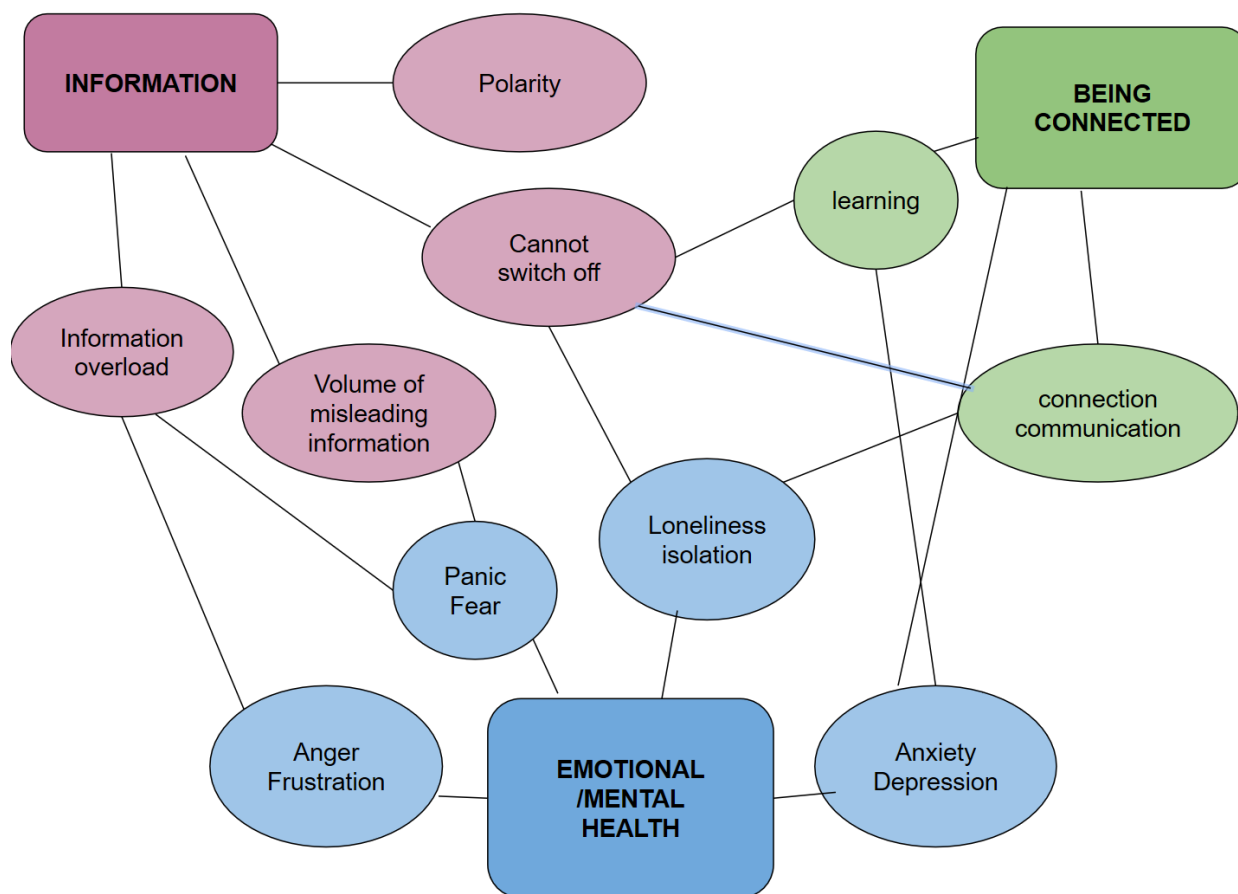
alongside the verbatim quotes. Some of the quotes illustrate more than one sub theme

simultaneously. See Figure 1 for interconnectedness between the subthemes in this theme. For

example, if we look at information overload as subtheme for information, this subtheme was

very closely linked with anger, frustration and fear and panic that resulted in having impact on

emotional/mental health.

Figure 1. Matrix of interconnectedness of themes and subthemes

Anxiety and/or depression

Some participants described that due to social media being one of the main sources of

information and due to the vast information and notifications from it during the lockdown or

shelter in place, have caused heightened feelings of anxiety or depression or have been a

trigger for already existing mental health issues. Others often had to negotiate with themselves if using social media to stay connected could warrant the heightened anxiety that came from using the social media in the first place.

"…I have long relied on social media (esp. Facebook) for staying connected with people I do not get to see in person. I have also enjoyed social media content (esp. Instagram and Twitter) as a mode of entertainment, as it connects to my hobbies and pursuits. Now, all three of those platforms heighten my anxiety…" (P2591)

"It has caused my depression to get worse, so I've absolutely had to be very strict about how I use it in order to avoid nasty panic attacks. (P1333)

Anger and/or frustration

A subgroup of participants described feeling angry or frustrated when using some of the social media platforms. Some of this anger and frustration was directed towards those that are spreading misinformation. Others were directing their anger and frustration towards their governments and how they dealt with the pandemic. Some were worried about the increased anger expressed in many of the social media posts that later translated in expressing anger towards the people in their household or social networks. Other participants were frustrated that not everyone complied with Covid-19 lockdown and shelter in place rules.

"Frustration at seeing others share inaccurate or dangerous information". (P463)

"Me and others also get so angry at those who constantly break the covid rules and from friends and myself I know this anger was let out at those closest." (P1418)

Panic and/or fear

Participants observed that the social media has been filled with information that is creating panic or fear often spread by the different media outlets. Some described that they had to stop using social media for a period of time due to the panic it was creating for them. Others expressed that the social media in the pandemic has brought on fear relating to health, finances and feeling that this is the end of the world. Overall, many found it challenging to avoid the increased panic in social media due to the pandemic.

"In the early stages I came off (social media) for a few days because everyone was panicking and it was making me wobble. "(P1045)

"Panic. Fear for my health. No income. Feeling this is the end of the world. " (P2993)

Loneliness and/or isolation

A group of participants highlighted the sense of isolation or loneliness that was exacerbated by using social media or relieved by social media. One participant said that they had to use social media because they are lonely, but using social media did not help them feeling less lonely as computers are not people. On the other hand, there were participants saying they need to use social media, as without it, they would feel lonely and disconnected.

"I use it more because I'm lonely, but it doesn't actually help. Computers aren't people.

"(P3739)

"But I need social media because otherwise I feel lonely and disconnected." (P3623)

Information

The second theme was about information. Four separate subthemes were identified: information overload, volume of misleading information, polarity of information and the pressure of having to constantly "be available" and not being able to switch off.

Information overload

A portion of the participants described that they felt excessiveness of variety of information. For example, some felt that there was information overload related to the surviving of the pandemic which was overwhelming and anxiety inducing. A few had to learn to turn off social media so they can cope with the information overload. Others felt exhausted from spending too much time online in order to stay connected with their social networks. Despite this, many felt compulsion to continue using social media, as underscored by some of the respondents:

"Information overload, compulsive viewing of FB, lowers mood but continue to spend too much time on it."(P1442)

Volume of misleading information

Majority of participants commented about the volume of misleading information on social media. Some of the participants highlighted the difficulty of accessing the correct information online due to it being mixed with rumors and non-factual information. Others commented on the sheer volume of information that was misleading and sensationalized by mainstream media and large focus on negativity.

 "There is often too much fake information that can be misleading. There is also too much

 focus on the negatives of Covid."(P1548)

Few participants commented on the frustration about the self-proclaimed "experts" that were responsible for spreading misinformation and rumors without scientific basis.

"Too many "experts" without a clue spreading fake news and rumours. People too quick to become keyboard warriors! "(P971)

Polarity

Participants noticed that the information on social media was very polarised. While not only was there an information overload, there was an overload of polarity around the available information. Some participants noted that the majority of the social media information was very negative and ranged from trolling to negative political news or negative emotions of self or others (friends and family). Others however, noted that there was overwhelming "think positive" information and challenges that were not realistic and frustration inducing. Many participants were seeking out more positive information or were starting to adopt strategies to filter the negative information.

"Negative emotions regarding loved ones' encouragement of the politicism of a global pandemic. Negative emotions regarding the extremism of people's political views. Negative emotions regarding the perceived selfishness of people who would rather enjoy their life at the expense of others than stay home and wait it out in order to preserve life. " (P2870)

"Pick your information streams to stay informed if correct and accurate information. Seek motivational, gratitude sources to maintain positive outlook, to remind that humans are adaptive and can change to new circumstances. "(P 21)

Cannot switch off

Participants described that there was too much external pressure to keep using social media for work and social activities and it was hard to "switch off" which added extra stress and made them feeling overwhelmed. Other participants stressed that the constant pressure to 'be available' to use video calls and online activities created more stress for them. This differed from the subtheme staying connected or even addicted, as cannot switch off was about the external pressure/ expectations to stay connected rather than the internal drive or compulsion to stay on social media or to stay on social media for the purpose of staying connected.

"You need to use them more than ever in order to stay in touch, learn, undertake social activity e.g. exercise. As a result you feel you're constantly using technology and never switch off from it. "(P733)

"…feeling pressure to be "available" because we don't have a "legitimate reason" to be busy. " (P2898)

Being connected

This theme was around striving for communication or being connected via social media and efforts for learning.

Connection/communication

There were a variety of experiences associated with connection and communication. Some participants found social media as a tool to help them reach out and connect with their larger social networks and made them feel as a part of community or without the social media they would have felt lonely and disconnected. Others, found it difficult to feel connected to their friends and family due to being unable to see them in person for long periods or to fully see their facial expressions and body language.

 "It has been helpful in connecting with others, especially those in my larger social network who I do not reach out to regularly, and with feeling like part of a community. "(P2603)

 "But I need social media because otherwise I feel lonely and disconnected.." (P3623)

Learning

This subtheme had a range of feeling associated with learning and being connected. A portion of the participants said that they had to learn to use the different social media platforms or how to navigate them in a short period of time which caused them feeling stressed and confused. Others found the learning to communicate via social media challenging, particularly when having to make decisions while unable to properly read the body language or hear the other side. Few found the experience of learning the new platforms helped them offset patience and had turned it into an opportunity for new competencies.

"I had to learn quickly about new online platforms due to work. I only used Skype and Whatsapp....Now I use Zoom, Microsoft Teams, Attend Anywhere and Pow Wow (phone conference with multiple people).   Learning about this online platforms in a short period of time has been stressful and confusing but getting there. " (P356)

Discussion

The primary aim of this study was to explore the experiences and challenges of using social media during the current Covid-19 pandemic. The strengths of this study are the diverse sample of participants and systematic and in-depth method of analysis of the experiences and challenges associated with using social media by the multinational population in a time where most relied on social media for gathering information and staying connected to family, friends and work. To the authors' knowledge, this is the first trans-national study to qualitatively explore the experiences and challenges of using social media during the Covid-19 pandemic. The findings have given a clear insight into what the key challenges around social media use during the pandemic are.

Our findings about the contributing factors of social media use during the Covid-19 pandemic on emotional and mental health are in line with previous findings related to the epidemics of Ebola and SARS where social media amplified the feelings of anxiety and fear (Fung et al. 2014, Seltzer et al. 2015) as well as recent findings from the current pandemic where high social

media exposure was linked with higher prevalence of mental health problems (Gao et al. 2020).

For instance, we found that a range of emotions such as anxiety, depression, frustration, anger, panic, fear and loneliness were amplified from using social media during the quarantine. This finding could be seen as a contradiction with the findings of a recent rapid review where the suggested strategies of having internet access and activating social media was recommended to reduce panic, isolation and stress among those in a quarantine (Brookes et al. 2020). However, we don't know if the amplified emotions recognised by the participants in this study are as a direct result from using social media or are perhaps a result from being in a quarantine, which we know that amplifies negative emotions and triggers further mental health issues (Ho 2020, Brooks et al 2020). Alternatively, it could be that during the pandemic, participants spent longer time passively using social media. This is in line with other research suggesting that in a crisis, there is a tendency of increasing time of social media use (Cho et al. 2013; Graham et al. 2015). Evidence suggests that prolonged passive use of social media (scrolling through social media news feed) is associated with depression (Aalbers et al. 2019).

From our findings we can also see that many of the amplified emotions identified by the participants were related to finding information or navigating through the volume of misleading and polarised information, particularly when social media during the pandemic was bombarded with misinformation and negative and confusing information (Gao et al. 2020). This was also in line with the literature on 'fight against infodemic' that poses a serious problem for public health globally (Zarocostas 2020) and as a result to an enormous amount of information coming from different sources and often with no valid foundation, today's news spreads very quickly and through multiple channels, almost like viruses (*Eysenbach 2020).*

Nonetheless, we know from previous evidence that when the public is exposed to negative and

confusing information, they start to express negative feelings such as fear, panic, anxiety

themselves (Kramer 2014). We also know that getting correct information in timely manner

should reassure people when dealing with crisis or in a quarantine and should therefore lessen

the feelings of fear, panic and distress (Brooks et al. 2020, Manuell 2010, Rubin et al. 2016).

However, recent study suggests that regardless of having correct information in timely matter

on social media, the distribution of accurate and non-accurate information in the social media

has similar spreading patterns (Cinelli at al. 2020). These spreading patterns are mainly driven

by the specific interaction patterns of users engaging with the certain topic on the specific

media platforms. Thus, it could be that work needs to be done on understanding social

dynamics behind the urge for content consumption. This in return could help with designing

better communication models for social media that could account for social behaviour and

therefore provide more efficient communication strategies in crisis situation and reduce the

amplified negative emotions. Lastly, the participants expressed some positive urges to be

connected and to learn new ways of communication via social media. Many participants

reported that they used social media to be connected with their family and friends. While at

times, this way of connecting was not perfect or as good as in person, it helped many of the

participants remain connected or feel less isolated than if social media was unavailable. This is

in line with previous findings where people in crisis felt more supported and optimistic about

the future when social media was extensively involved (Taylor et al. 2012). This brings an

important consideration about the reasons why social media is used by the participants and

about its ways of passive and active use. Previous studies suggest that when people use social

media in an active way to connect with other people, share and reveal emotions, by uploading either text, videos or pictures, social media becomes a tool of emotional regulation and therefore their experiences of using social media are positive and increase the feelings of being connected or supported (Neubaum 2014, Rime 2009). In contrast, when people use the social media in passive way, they often get the amplified negative feelings (Nils & Rime 2012). Thus social media use has both positive and negative effects on us. The negative effects may be perceived as more dominant in early stages of this crisis (rapid spread, confusion about which measures should be taken and the consequences they will have for the individuals). This could mean the as the pandemic progresses, people start to use the social media in positive ways and deliberately seek information that can bring more positive emotions which in return can help with coping with crisis situation.

Limitations

There are several limitations associated with this study. There might have been a selection bias in that those who held particularly strong feelings about the topic could have been more likely to participate in the study. Also, the most of the participants were from UK, so there might not be equal representation of all themes and the results may have been different if the Norwegian population had been included. This has to be taken into consideration in later research. The survey title used in the advert for participants was: "The effects of Covid-19 on mental health and quality of life" so awareness or need to improve mental health and quality of life may be greater in the sample population when compared to the general population or those that participated could be more comfortable discussing mental health issues. The Norwegian sample

were not asked the qualitative question, which warrants future research. A substantial

proportion of participants did not answer the qualitative question. The missing data may

include a mix of people who had not experienced any challenges with social media use during

the Covid-19 lockdown or shelter in place and those who had but did not respond. Future

research that first asks a filter question may help to reduce the level of missing data due to no

challenges to report. The wording of the qualitative question was ".. what challenges have you

experienced in using social media?" which may have led to more negative focused responses

than if the wording was different, for example asking more broadly about "experiences" instead

of "challenges". Nonetheless, while the question asked participants to report any challenges,

still, some positives were reported. The positives and how social media has been helpful to the

community throughout the pandemic may be equally important to understand in additional to

challenges faced, therefore warrants investigation in future research.

Implications for policy and practice

This study suggests that using social media while in shelter in place or lockdown could have a

negative impact on the emotional and mental health of the population across the participating

countries. Some of these negative effects on mental health can be longer term and policy

makers and public health organisations should consider measures to respond to the likely surge

of ill mental health after the lockdown and shelter in place. While anxiety and depression were

some of the most common themes from the study, there were a number of participants seeking

positive or helpful information via social media. This could be an opportunity for development

of future therapeutic interventions that could be delivered or partially delivered via social

media and in return mitigate the amplified negative feelings of the population. In addition, appropriate attention is needed for those that either have previous ill mental health or those that the shelter in place and lockdown triggered more serious mental health issues.

A lot of the anger, frustration, panic and fear were related to the content and volume of information or misleading information about the pandemic on social media. Public health and the governments should look at ways to use social media to provide relevant, coherent and correct information in a timely manner with increased transparency and clear pathways of accessing that information, particularly in an peak phase of crisis as previously found in Macao (Pang et al 2021). However, they should also consider the social dynamics in their countries and how that knowledge can be used to improve communication. One suggestion is utilising the dialogic communication theory (Kent & Taylor 1998) and creating a dialogic loop (Chen 2021) where the government and the general public engage in negotiated interchange of ideas and opinion that promote realization of mutual satisfaction and a creation of common meaning (Wirtz & Zimbres 2018) In addition to combating misleading information on social media, the psychological impacts of it needs to be addressed.

Our finding that emotions and mental health poses as one of the key challenges imply that support in this area is urgently required. The addressing of mental health needs has been raised as an integral part of responding to COVID-19 (Ghebreyesus 2020). Example of specific strategies include strengthening mental health care in the community and investing in health workers (WHO 2020). While the immediate response to COVID-19 have been focusing on ensuring the capacity of clinicians and health care workers in the infectious disease field, we need to, at the same time, ensure that the communities are also able to gain support from

health care workers in the mental health field, such as from psychologists, mental health nurses and social workers.

Conclusion

The findings revealed that using social media while in shelter in place or lockdown could have a negative impact on the emotional and mental health on some of the population in the participating countries. It also revealed the amplified negative emotions were often related to navigating through the volume of misleading and confusing information. Communication with the public should be strengthened by unambiguous and clear messages and clear communication pathways. Nonetheless, for some participants using social media in the pandemic helped them remain connected or feel less isolated than if social media was unavailable. For the others, we should be looking at alternative ways of staying connected during similar crisis. Although these findings might not represent the views from the whole general population, to support policy and practice in strengthening mental health care in the community, social media could be used to deliver practical advice on coping and stress management.

List of abbreviations

Centre for Disease Control and Prevention-CDC

United Kingdom-UK

United states of America-USA

Severe Acute Respiratory Syndrome-SARS

World Health Organization-WHO

Ethics approval and consent to participate: The introductory information accompanying the survey explained the purpose and anonymity of the study and consent was obtained by completing the first page of the survey. The study was thereby quality assured and approved by OsloMet and the regional committees for medical and health research ethics (REK, 132066) in Norway, reviewed by the University of Michigan Institutional Review Board for Health Sciences and Behavioral Sciences (IRB HSBS) and designated as exempt (HUM00180296) USA, by University of Salford Health Research Ethics (HSR1920-080) in UK, and University of Queensland (HSR1920-080; 2020000956) in Australia.

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Appendix.
Summary of social distancing policies in place across the three countries during the study period

Country	Summary of policies
USA*	17 March to 4 April, extended to 30 April: stay at home order across states, earliest in California, Illinois, and Puerto Rico; gathering ban with most states restricted to 10 or more or all gatherings; school closures; bars, sit-down restaurants, and non-essential retail closed for most states.
UK	18 March: schools closed; 21 March: entertainment venues closed; 24 March: full lock-down imposed; ban on public gatherings of more than two people (excluding members of the same household); close-down of all non-essential services; directions to stay at home other than for essential reasons.
Australia*	21 March: social distancing rules imposed and state governments to start closing non-essential services; 29 March: national announcement of restrictions on public gatherings of more than two people (excluding members of the same household); directions to stay at home other than for essential reasons); school closures have not been ordered but various arrangements were imposed across states that brought the school holidays forward; 15 May: public gathering rules for some states beginning to ease and restricted non-essential services are permitted.

*variations existed by states