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Understanding Reactions to Misinformation - a COVID-19 Perspective

Ahmed Alnuhayt
Information School
University of Sheffield
aalnuhayt1@sheffield.ac.uk

Suvodeep Mazumdar
Information School
University of Sheffield
s.mazumdar@sheffield.ac.uk

Vitaveska Lanfranchi
Computer Science
University of Sheffield
v.lanfranchi@sheffield.ac.uk

Frank Hopfgartner
Information School
University of Sheffield
f.hopfgartner@sheffield.ac.uk

ABSTRACT

The increasing use of social media as an information source brings further challenges - social media platforms can be an excellent medium for disseminating public awareness and critical information, that can be shared across large populations. However, misinformation in social media can have immense implications on public health, risking the effectiveness of health interventions as well as lives. This has been particularly true in the case of COVID-19 pandemic, with a range of misinformation, conspiracy theories and propaganda being spread across social channels. In our study, through a questionnaire survey, we set out to understand how members of the public interact with different sources when looking for information on COVID-19. We explored how participants react when they encounter information they believe to be misinformation. Through a set of three behaviour tasks, synthetic misinformation posts were provided to the participants who chose how they would react to them. In this work in progress study, we present initial findings and insights into our analysis of the data collected. We highlight what are the most common reactions to misinformation and also how these reactions are different based on the type of misinformation.

Keywords

Misinformation, social reactions, twitter, people, COVID-19.

INTRODUCTION

The spread of misinformation on social media is a global concern, as misinformation can influence users and their behaviour, and can lead to manipulation. The spread of misinformation can become particularly concerning during emergencies. A typical definition of "misinformation" is "a health-related claim of fact that is currently false due to a lack of scientific evidence," (Chou et al., 2018, p. 1). This is distinct from "disinformation," which is "the deliberate creation and sharing of false and/or manipulated information that is intended to deceive and mislead audiences, either for the purposes of causing harm, or for political, personal or financial gain" (House of Commons Digital, Culture, Media and Sport Committee, 2018 p. 2). On the other hand, "conspiracy theory is a proposed explanation of some historical event (or events) in terms of the important causal agency of a relatively small group of persons, the conspirators, acting in secret" (Brian, 1999). While various nuanced terminologies exist, in our study, we explore misinformation as a generic concept that involves the spread of incorrect information either deliberately or accidentally, through social media channels.

Whilst there has been much research on detecting misinformation and fake news (e.g., Zhao et al. 2015; Hamidian and Diab 2015, 2016; Sicilia, Giudice, Pei, Pechenizkiy, & Soda, 2017; Ghenai & Mejova,2017; Zubiaga, Aker, Bontcheva, Liakata, & Procter, 2018; Michal Lukasik, Zubiaga, Bontcheva, & Cohn, 2016) there are fewer insights on how people react to misinformation and why misinformation is spread. Therefore, our study attempts

to understand how people interact with misinformation online and explores the different circumstances that might influence sharing misinformation during a specific health emergency, COVID-19, in the context of English-speaking countries. We aim to answer the following research questions:

RQ1 How do people react to information they believe to be misinformation on social media during health crises?

RQ2 How would they react when they encounter different types of misinformation?

To answer our research questions, we conducted a survey through a questionnaire and subsequently analysed the data using both statistical and thematic analysis. This in-progress paper did not report on all the gathered data; we only focused on three specific experiments of misinformation tweets to understand users' reactions. The paper is structured as follows: The introduction section elaborates on issues around misinformation in social media. The Background discusses the relevant literature. The methodology section details how our questionnaire was designed, delivered and the analysis of the collected data. We then discuss our key findings and present Conclusions.

BACKGROUND

A growing body of literature has focused on rumours and conspiracy theories that spread on Twitter, in particular during health crises such as Ebola in 2014 and COVID-19. For example, Ahmed et al. (2020) performed a social network analysis on Twitter discussions related to 5G conspiracy theories that appeared during the COVID-19 crisis. Jin et al. (2014) looked at rumours and conspiracy theories on Twitter in the context of Ebola, using network graph analysis to identify a large number of keywords and hashtags and then developed a dynamic query expansion model to classify tweets collected depending on these keywords and hashtags. Ahmed (2018) argued that the study would provide critical insight if the study had incorporated a more qualitative approach. Interestingly, it is argued that social media platforms' inappropriate content could be utilised by policymakers (Ahmed et al. , 2020). Moreover, Ahmed et al. (2020) posited that public health authorities could enlist influencers' assistance in spreading anti-narrative content.

A few studies explored social media users' reactions to misinformation - Al-Zaman (2021) analysed Facebook users' comments on five different types of COVID-19 misinformation. The study found that (60.88%) of users accept the claims of misinformation, (16.15%) deny misinformation, and only a few users (13.30%) are doubtful about the claims of misinformation. Furthermore, Al-Zaman (2021) found that users can determinate, deny, and question political misinformation than other types of misinformation. However, this study has some limitations; for example, it is limited to the context of Bangladesh, only focuses on public comments to understand users' reactions and hadn't considered the sociodemographic contexts of the users. Another study by Geeng et al. (2020) identified how social media users interact with misinformation. The study found users interact with misinformation in seven different manners: skipping misinformation, accepting misinformation content without thinking about it very much, being sceptical about misinformation, uncertain about misinformation's context, making other views, sharing or liking and misinterpreting misinformation. Ng and Loke (2020) explored how 10,000 users of Telegram reacted to COVID-19 misinformation. Users' responses were categorised into four types: affirm, when the user accepted the misinformation; deny, when the users did not accept the misinformation; question, when the user has doubts; and unrelated, when it is not related (Ng and Loke, 2020, p. 4). The study found that (45%) of users deny or question misinformation, whereas only (11%) of users affirm the misinformation (Ng and Loke, 2020, p. 4). Tandoc et al. (2020) studied Singaporean social media users' response to misinformation using a mixed-method approach including survey and interview. The study found that most users ignore misinformation when they encounter it. The study also found that users correct misinformation if the post belongs to themselves or people they know (Tandoc et al., 2020, p. 12). However, this study has limitations since it is focused on Singapore only.

Different reasons can influence people's reactions to disinformation. For example, a study found that commenting on other people's posts can enhance relationships between the commenter and the recipient (Ellison et al., 2014). But on the other hand, commenting or correcting from a negative perspective might negatively impact relationships (Koutamanis et al., 2015).

METHODOLOGY

Research Design

A questionnaire-based survey was designed to understand how social media users perceived misinformation. The questionnaire was delivered via Amazon Mechanical Turk (MTurk), targeted towards MTurk users from English

speaking countries[1]. Google Forms was used to create the questionnaire and collect participant responses. The survey was created as a microtask in the MTurk platform, with each participant being rewarded $2.04 in return for their contribution. On average, filling the form for all participants took 20 minutes. The payment for their participation was calculated in accordance with previous studies (Thorson, 2016; Cunningham, Godinho, & Kushnir, 2017). Data analysis was conducted via both quantitative statistical analysis and thematic analysis.

The rationale for using MTurk

The Amazon Mechanical Turk platform[2] is one of the best-known marketplaces for online crowdsourcing. It is used to recruit participants to perform micro-tasks (referred to as Human Intelligence Tasks, HITs) in exchange for a small fee, known as a "reward" (Buhrmester et al., 2011). While many other crowdsourcing platforms are available, this study focuses on MTurk for questionnaire delivery because MTurk has quickly become a reliable social science research source (Bor et al., 2020; Roitero et al., 2020; Williams Kirkpatrick, 2021). MTurk facilitates the rapid recruitment of multiple participants (Paolacci et al., 2010), and offers the ability to define criteria for participation (e.g. offering the micro-task to participants from only English speaking countries, or participants who have high approval ratings).

Participant Criteria

The MTurk microtask was created to accept 1155 responses in order to garner at least 385 responses (allowing for some non-completions, poor quality inputs (e.g. “Ok”, “good” etc.) and withdrawn consent), based on the target population of 360 million English speakers worldwide, a confidence level of 95%, and a 5% margin of error (Szmigiera, 2021). Our inclusion criteria for participants were as follows:

a. English speaking population
b. Participants must be aged 18 years or over.
c. Number of HITs Approved must be greater than 100[3].
d. HIT Approval Rate (%) for all Requesters' HITs must be greater than 90%[4].

Questionnaire Design

The questionnaire was organised into the following three sections: first, to gain a high level understanding of our participants; second, to understand how participants would react to misinformation; and finally to provide three scenarios of how participants would study (and react to) specific misinformation:

Section 1: Demographics Questions - Understanding participants

A set of three demographic questions on participant age (age group), level of education and employment status aimed at gathering a greater understanding of the participants. Additionally, two questions asked the participants which online information sources the participant relied on for general information and their preferred source for information or news on COVID-19.

Section 2: Understanding generic reactions to misinformation

The participants were provided with a set of possible (generic) reactions (e.g. report to social media platform, block the users, ignore the post etc.) if they were to encounter information on their preferred social media platform that they believe to be misinformation. An open ended option was also provided to capture any reaction that had not been envisaged by the researchers. Participants were asked open-ended questions with a series of different scenarios on how they’d react if the misinformation was shared by a friend, their line manager/supervisor, or a trusted source.

Section 3: Scenario-based Behavioural Tasks

A set of three synthetic Tweets (based on real Tweets) were provided to the participants that include misinformation. The respondents had three minutes to investigate (by researching the topic) these posts and were asked to first, agree/disagree with the fact shared on Twitter. They were then invited to outline the sources upon which they relied to reach their decision. A further question was designed to understand how participants might react to the Tweet with a set of common reactions (and an open ended ‘other’ category to capture any reaction that is not listed). Finally, participants were also requested to share their experiences of encountering

[1] Our MTurk survey was open to participants from the following countries (based on English being the primary language in these countries: Antigua and Barbuda, Australia, The Bahamas, Barbados, Belize, Canada, Dominica, Grenada, Guyana, Ireland, Jamaica, Malta, New Zealand, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago, United Kingdom and United States of America

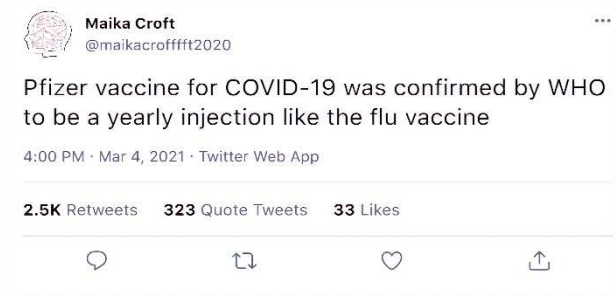
[2] www.MTurk.com

[3] A high number of HITs approved (100) indicates that the participant has a considerable experience and validation of their work quality by HIT requesters

[4] A high approval rate indicates that the participant will have high quality contributions to the platform consistently

misinformation on social media.

Figure 1 presents the three posts (Tweets) that were synthetically created in order to elicit participant reactions if they were to encounter them on their preferred social media platforms. Options provided to select their reactions were the same as Section 2 to allow for comparison across the sections. The topics of misinformation were chosen to highlight contemporary COVID-19 misinformation topics at the time of designing the questionnaires. Although other misinformation topics were popular (e.g. the link between COVID-19 and 5G), we limited our study to the following three topics- vaccines, COVID-19 origin and COVID-19 variants. This was owing to the importance, relevance and recency of the topics. For example, at the time, vaccine hesitancy was a concern for global health and as a result, a much-discussed topic in the media. The origin of the COVID-19 virus was a continued topic of misinformation, generating many conspiracy theories (including the one selected). Concerns around variants were also a controversial topic, generating several theories, which made it an interesting topic to explore.



A. Task 1, sharing misinformation that COVID-19 would be a yearly vaccine

B. Task 2, sharing misinformation on the origin of COVID-19

C. Task 3, sharing misinformation that COVID-19 (and subsequent variants) are planned

Figure 1. Behavioural Tasks to understand how participants would react to a simulated Tweet sharing misinformation. User names and Twitter reactions are fictitious, while the tweet text and media were influenced by real Tweets.

Data collection & Preparation

The total number of responses for the questionnaire were 1,573, of which 1014 were accepted after discounting poorer quality responses and withdrawn consents. Responses were exported from MTurk into a local spreadsheet, after which the data was cleaned by removing invalid responses, such as invalid characters and off-topic responses.

Statistical analysis of the data was carried out via IBM SPSS. The analysis of the data resulted in frequency distributions of the categorical variables in the questionnaire that address the research questions (RQ1 and RQ2). While the survey collected a large volume of information, in this work-in-progress study, we focus our discussions and analysis predominantly on the scenario-based behavioural tasks (Section 3), with some brief overall analysis of the participants (Section 1) and their reactions to misinformation (Section 2).

DATA ANALYSIS AND DISCUSSION

Demographics of participants (Section 1)

The majority participants were in the 25-34 age range (n = 386; 38.1%), 35-44 (n = 287; 28.3%) and 45-54 (n = 147 ; 14.5%), with a few in other age groups 18-24 (n = 48; 4.7%), 55-64 (n = 89; 8.8%), 65-74 (n = 48; 4.7%), (n = 4; 0.4%). 5 participants preferred not to answer (n = 5; 0.5%).

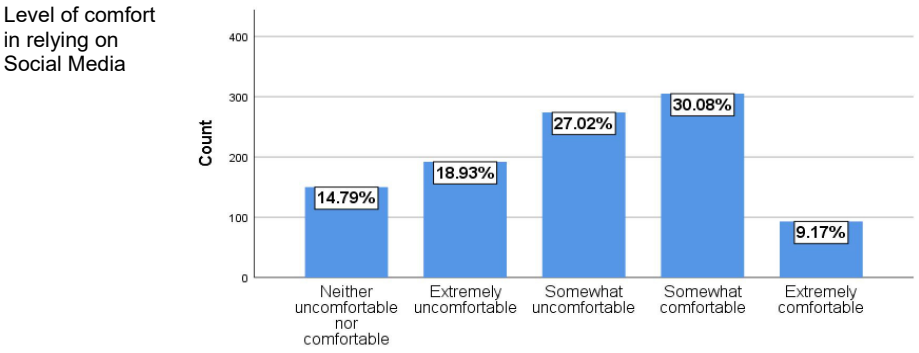
A majority of participants have bachelor's degrees (n = 479; 47.2%), Master's degree (n = 177; 17.5%), associate's degree (n = 154; 15.2%), and secondary School (n = 149; 0.8%). A few participants (5) do not have a formal education (n = 5; 0.5%), some university/some college (n = 8; 0.8%), professional degree (n = 25; 2.5%), doctorate degree (n = 10; 1.0%), and some participants preferred not to answer (n = 7 ; 0.7%).

Most participants are employed (n = 767; 75.6%) or freelancing (n = 99; 9.8%), while a few participants are retired (n = 40; 3.9%), unable to work (n = 19; 1.9%) or out of work (n = 63; 6.2%). A few students (n = 18; 1.8%) also participated in the survey, while some participants preferred not to answer (n = 8; 0.8%).

A large majority (n = 963; 95%) of the participants are located in the United States of America. The remaining 5% constituted participants from United Kingdom (n = 21; 2.1%), Canada (n = 21; 2.1%), Australia (n = 2; 0.2%), Saint Vincent and the Grenadines (n = 1; 0.1%), Ireland (n = 1; 0.1%), Georgia (n = 2; 0.2%), Colombia (n = 1; 0.1%), India (n = 1; 0.1%) and Argentina (n = 1; 0.1%). We noticed that some (5) participants were not from English-speaking countries (e.g., Georgia, Colombia, India, and Argentina) - we assume these participants connected to MTurk via a virtual private network (VPN).

Generic Reactions to Misinformation (Section 2)

45.95% of participants felt uncomfortable (somewhat uncomfortable and extremely uncomfortable), while 39.25% felt comfortable (somewhat uncomfortable and extremely comfortable) in relying on social media for COVID-19 news. As we observe from Figure 2, among the participants who mentioned they are extremely uncomfortable in relying on social media, 42.71% often (and 36.98% sometimes) come across misinformation on social media. On the other hand, interestingly, among the participants who mentioned they are extremely comfortable (9.17%) in relying on social media, 27.17% (and 30.43% often) always come across misinformation. This is interesting - despite coming across misinformation regularly, the participants are extremely comfortable relying on social media. We believe that many of these participants believe that they can filter out misinformation despite regularly coming across it.



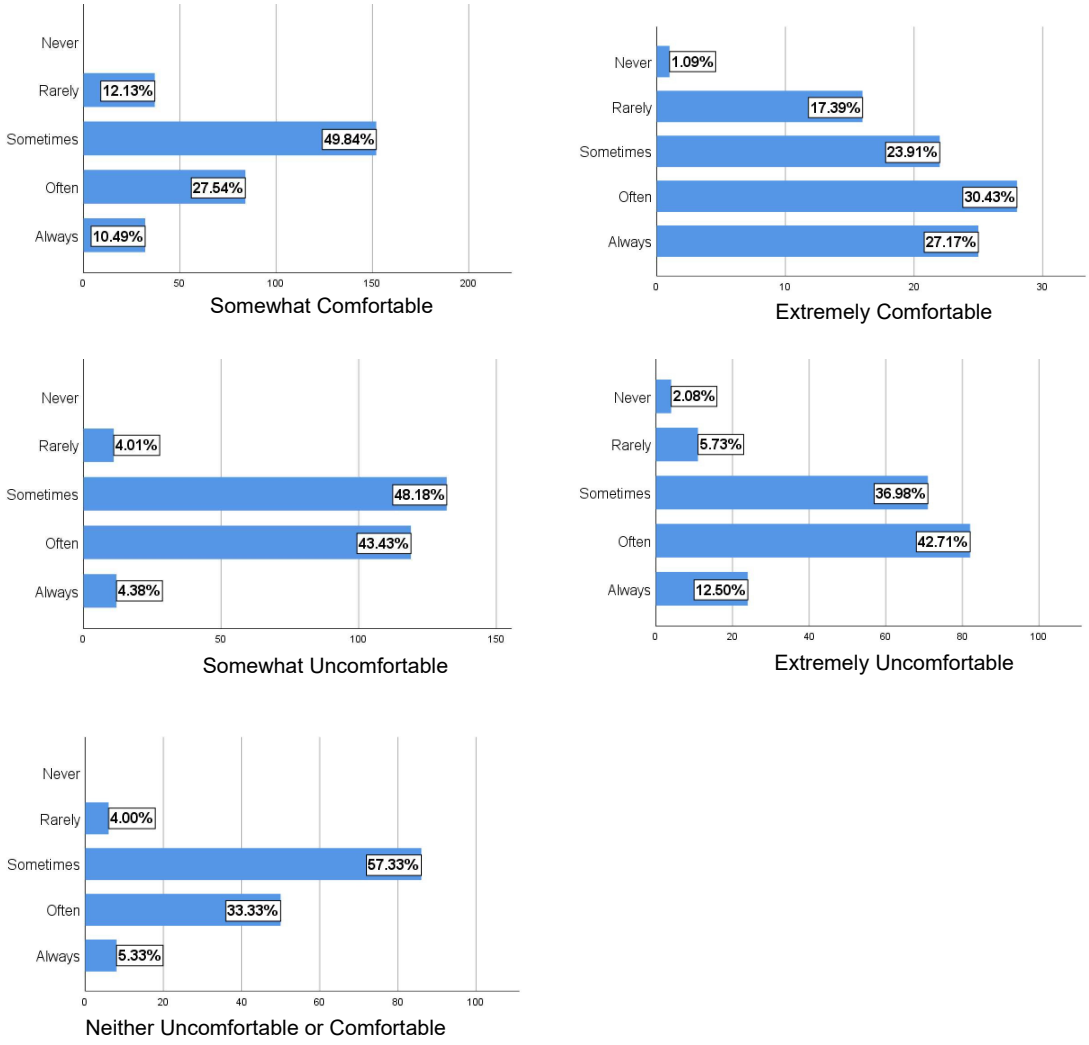
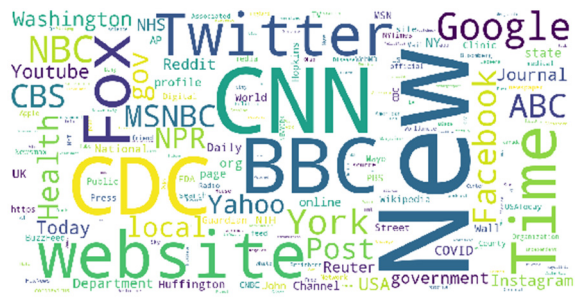


Figure 2: The first bar chart shows a general distribution of participants' level of comfort in relying on social media. Following, a bar charts of how often participants come across misinformation on their social media platform, grouped by their level of comfort in relying on social media for COVID-19 news. Please note: the (blanks) next to "Never" option was introduced as noise, which will be removed in future processing.



A. What are the top 5 information sources participants rely on for information on COVID-19

B. What makes a piece of information trustworthy and reliable for participants

Figure 3: Word cloud analysis of open ended questions on the preferred information sources of the participants (A) and what aspects do they feel make a piece of information trustworthy and credible (B)

The participants were asked for their top 5 information sources that they rely on for information on COVID-19. The Figure 3(A) shows a word cloud of all of their responses. We note a large number of participants rely on news websites such as CNN, BBC, New York Times, NBC, CBS, ABC. Participants also rely on health websites and search engines like Google, and Yahoo. Social media platforms such as Facebook, Twitter, Youtube, and Reddit were also noted to be popular among participants.
One of the questions posed to participants was what makes a piece of information trustworthy and credible. Figure 3(B) shows a word cloud of all the responses. Among the concepts identified, participants mention the credibility of sources as an important factor. Other factors mentioned were reputation of the source, supporting evidence, information backed by facts or recognised sources such as research organisations and governments. While we will explore these responses in greater depth in the future, we highlight our broad findings as a part of our in-progress work.

Scenario-based Behavioural tasks(Section 3)

Behavioural Task 1

Figure 4 shows a pie chart on the top presenting a distribution of the level of agreement that the participants have with Behavioural Task 1 (that COVID-19 will be a yearly vaccine). Overall, 435 (42.9%) of participants agreed with this statement, and 373 (36.79%) participants disagreed with this statement, while 206 (20.32%) found it difficult to disagree/agree. We find this an interesting observation - the majority of our participants agreed with this misinformation. It is important to note that the reason why this statement is misinformation was, at the time there were discussions around regular COVID-19 vaccines being made available. However, this was not a statement that was confirmed by WHO. The lack of sources for such information is a further factor in this example, as highlighted by one of the participants: “The user should cite a source, but also not make a vague blanket statement with no regard to age. It's also not clear if this is the case yet, and only mentioning one vaccine is suspicious when Moderna, etc. would be the same requirement, if it were true.” We discuss this further in our later sections.

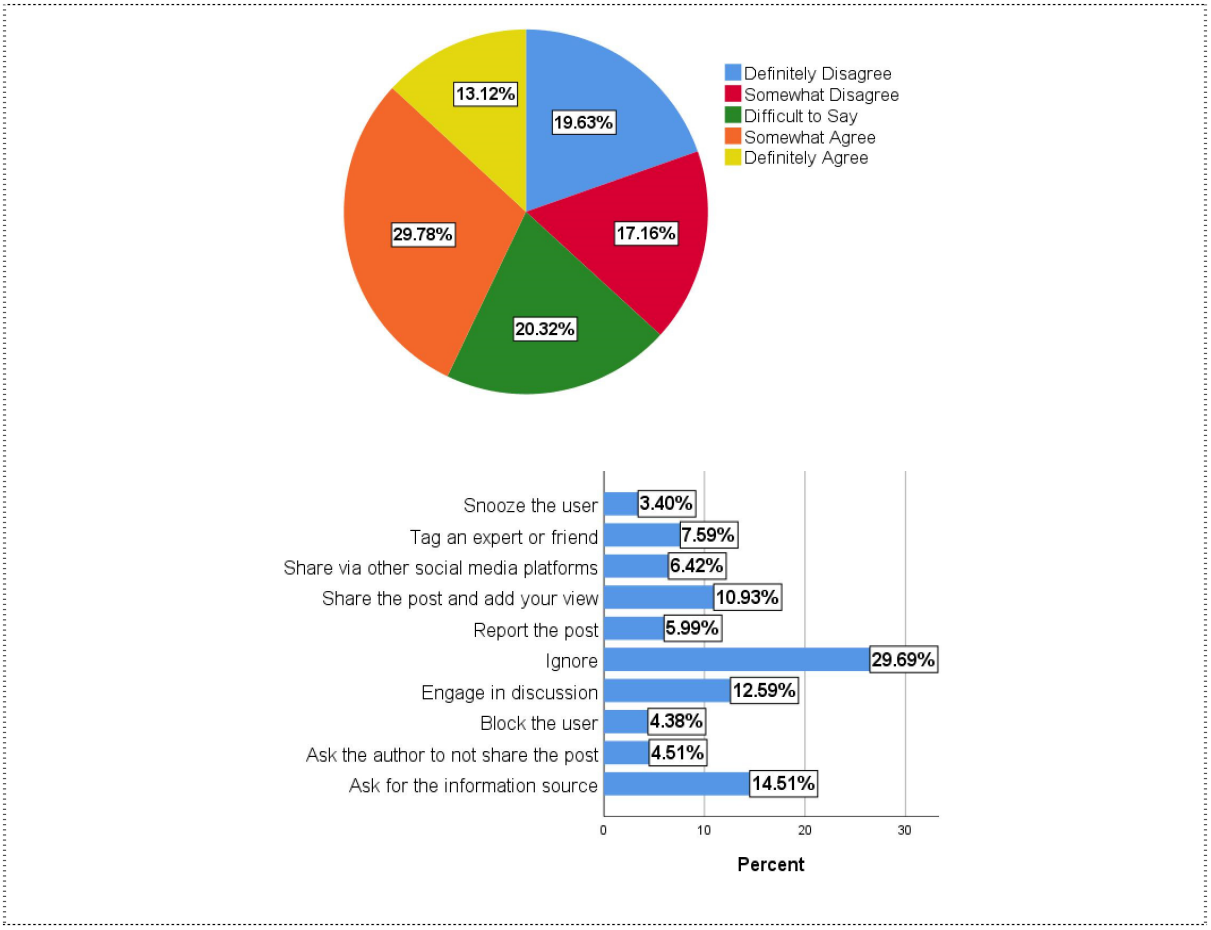


Figure 4, Top- The pie chart presents to what extent respondents agree with the post (Behavioural Task1); Bottom- The Bar chart shows respondents' reactions to encountering the misinformation (Behavioural Task1).

Figure 4 (bottom) shows a bar chart presenting how the participants would react if they happened to encounter this information on social media. As can be observed, a majority of participants would ignore the post (n=481; 29.69%), ask the author of the post for the information source (n = 235; 14.51%), engage in discussion with the author of the post (n = 204; 12.59%) or share the post and add their own view (n = 104; 10.93%).

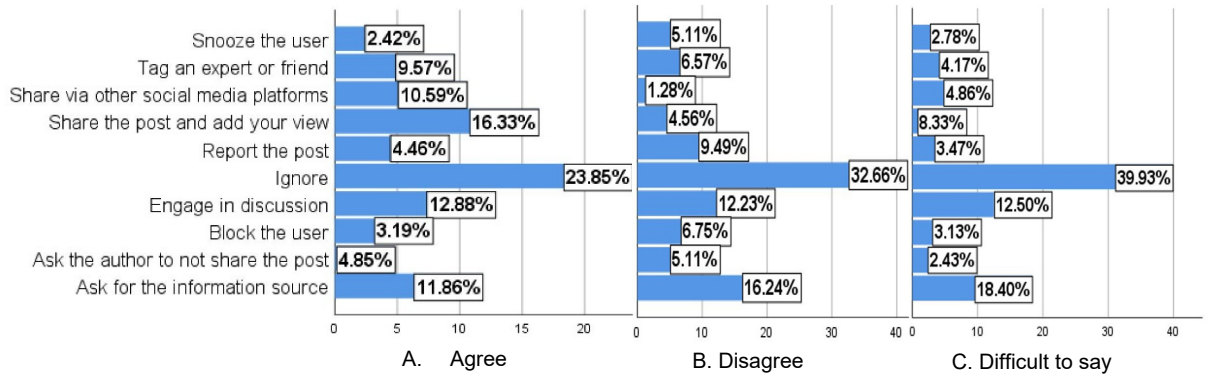


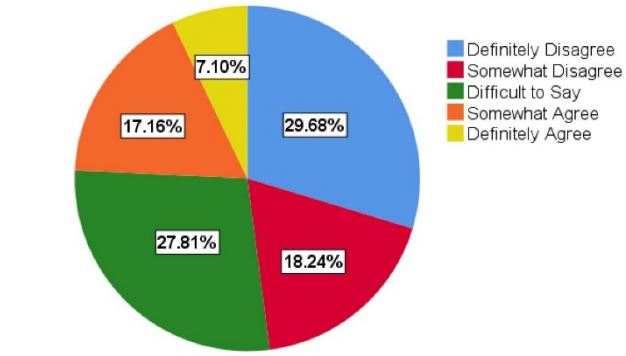
Figure 5: Bar charts presenting how the participants would react to Behavioural Task 1 (the Pfizer vaccine being a yearly vaccine). Distribution of behaviours for respondents who selected: A- "I definitely agree" or "somewhat agree"; B- "definitely disagree" or "I somewhat disagree"; C- "Difficult to say"

The bar chart in Figure 5 presents how the participants reacted to Behavioural Task 1, grouped by their level of agreement or hesitation. Overall, we observe that most people would ignore the post. Among the participants who agree with the misinformation, a considerable number would share the post and add their views, while a few would ask for the information source. Among participants who disagree with the post, several would ask for the information source, while a few participants would engage in discussion. For participants who would find it difficult to say, a majority would ask for the information source, while a few would engage in discussion.

Respondents seem to be more likely to ignore the post when they are hesitant or even disagree with the post and would consequently choose to ask the author for the source of the information. Our analysis also indicates that participants who agree with the post would share the post and add their own view, in comparison to those who hesitate or disagree with the post. Some respondents provided other reactions that they would likely have toward this post. Some of these responses were on researching the topic themselves, commenting with additional information or requesting the user to take down their post.

Behavioural Task 2

Figure 6 presents a distribution of the participants' level of agreement to Behavioural Task 2 (origin of COVID-19 as a lab accident). Overall, 486 (47.92%) participants disagreed with the statement, 246 (24.26%) participants agreed, while 282 (27.81%) participants were hesitant in agreeing/disagreeing. This task related to initial news about the origins of COVID-19 linked to bats, and that the virus was accidentally released from a lab. However, the reason this is misinformation is that at the time of writing, the origin of the virus was not confirmed. At the time, much discussion was around how the pandemic could be stopped, with less official investigations on the origin. One of the respondents mentioned: "It's possible someone knows where it originated and how, but those people aren't the ones posting it on social media. It also doesn't really matter how it originated to laymen all that matters is trying to stop it.".



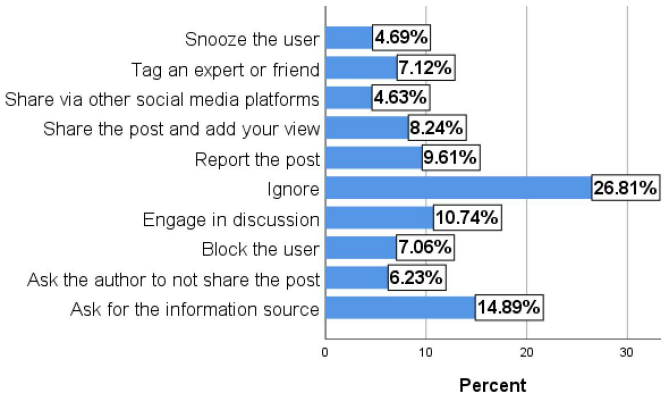


Figure 6. Top- A simple pie chart presents to what extent respondents agree with the post (Behavioural Task 2); Bottom- A simple Bar shows respondents' reactions to encountering the misinformation (Behavioural Task 2).

Figure 6 shows a bar chart on the right presenting how the participants would react if they were to encounter the information contained in Behavioural Task 2 in their social media channels. As can be observed (and similar to Task 1), a majority of participants would ignore the post (n = 452; 26.81%), ask the author of the post for the information source (n =251;14.89%) and/or engage in discussion with the author of the post (n = 181; 10.74%). Interestingly, some respondents explained why they would ignore the misinformation tweet: for example, one of the respondents mentioned “doing anything would just warrant further aggravation".

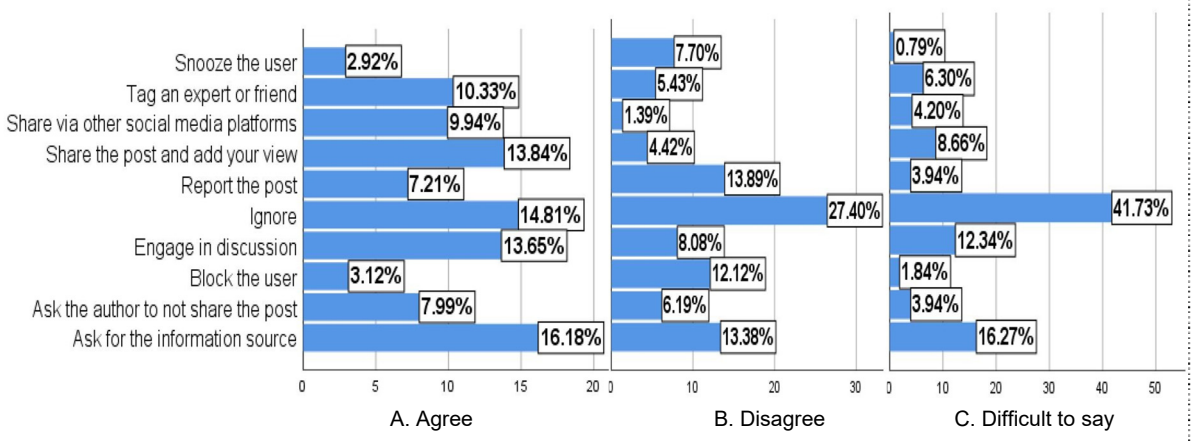


Figure 7: Bar charts presenting how the participants would react to Behavioural Task 2 (the origin of COVID-19 as a lab accident). Distribution of behaviours for respondents who selected: A- “I definitely agree” or “somewhat agree”; B- “definitely disagree” or "I somewhat disagree”; C- “Difficult to say”

The bar chart in Figure 7 shows participants’ reactions to Behavioural Task 2. Overall, among participants who disagree or hesitate with this misinformation, most would ignore it. However, for participants who agree, a majority would ask for information sources, while others would ignore or share the post with their own views. A few other participants who agree with the post would also engage in a discussion with the author. Interestingly, some participants who agree with the post would tag an expert or share the post on other platforms. Further analysing this, we note that respondents who are hesitant are less likely to report the post in comparison to those who agree or disagree with this. Participants who disagree would report the post or ask for information sources.

Some respondents provided other reactions that they would likely have toward this post. Some of these responses were on commenting to the post with reputable sources, unfollowing the user, questioning the user on their motivations for sharing misinformation, or discussing the post with their friends.

Behavioural Task 3

Figure 8 shows how participants reacted to Behavioural Task 3 (COVID-19 variants are planned). Overall, 704 (79.43%) participants disagreed with the statement, 176 (17.36%) participants agreed, while 134 (13.21%) participants were hesitant in agreeing/disagreeing.

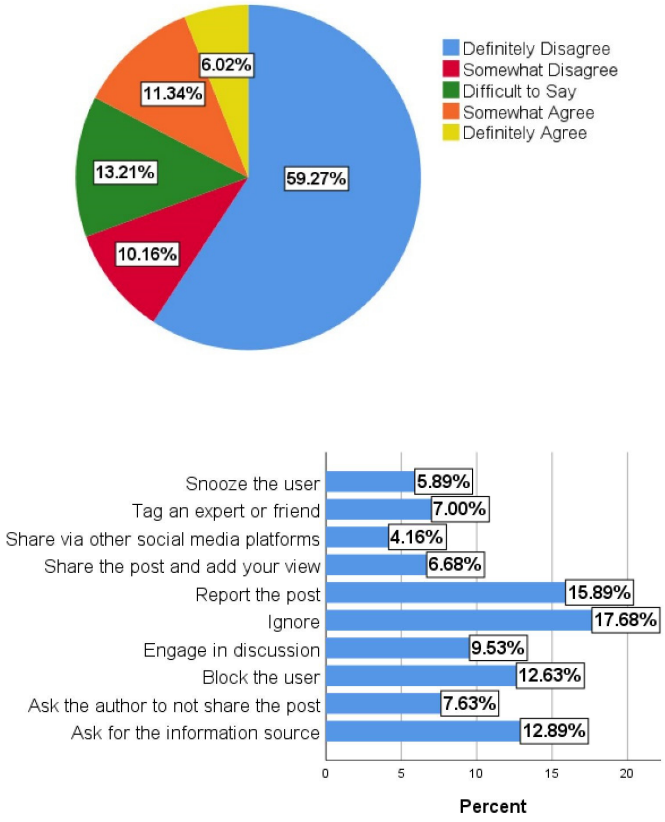


Figure 8. Top- A simple pie chart presents to what extent respondents agree with the post (Behavioural Task 3) ; Bottom- A simple Bar shows respondents' reactions to encountering the misinformation (Behavioural Task 3)

Figure 8 shows how the participants would react if they were to encounter the information in Task 3 while using their social media platform. As can be observed, a majority of participants would ignore the post (n = 363; 17,68

%), report the post to the social media platform (n = 302; 15.89%), ask the author of the post for the information source (n = 245;12.89%) and/or block the user who shared the post (n = 240; 12.63%).

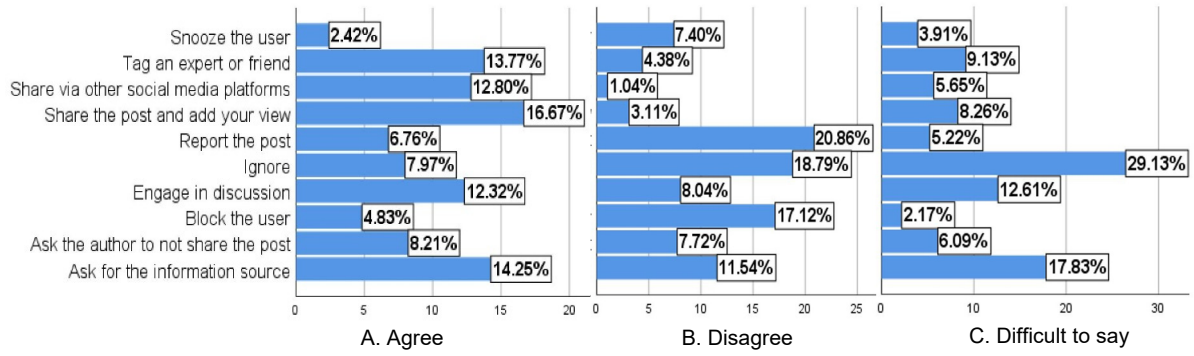


Figure 9: Bar charts presenting how the participants would react to Behavioural Task 2 (the origin of COVID-19 as a lab accident). Distribution of behaviours for respondents who selected: A- "I definitely agree" or "somewhat agree"; B- "definitely disagree" or "I somewhat disagree"; C- "Difficult to say"

Figure 9 shows how participants reacted to Behavioural Task 3. We note that among most participants who agree with the sentence, a majority would share the post and add their own views. Participants would also ask for the information source, while several would tag an expert or friend. Among the participants who would disagree with the statement, most would report the post, ignore it or block the user who posted the information. Among participants who were hesitant, a majority would ignore the post, ask for the information source or engage in discussion.

Some respondents provided other reactions that they would likely have toward this post. Some of these responses were on further researching the topic themselves, questioning why the user would share this information, or block the user.

DISCUSSIONS

We used the result from the three Behavioural Tasks 1, 2 and 3 to answer our research questions. In answering the RQ1, we observed that most respondents who choose to agree with the posts reacted with the following, respectively: (1) Share the post and add their view; (2) tag an expert or friend to make them aware of the post; (3) ask the author of the post for the information source; (4) share the post via other social media platforms. Interestingly, respondents who agreed with posts 1, 2 and 3 had similar reactions since they were willing to share the post and add their views. While it is difficult to assess why they would choose to share the posts and add their views, tag experts, or ask for an information source, we believe this could be because the participants would like further evidence or support to these statements while engaging in discussions.

We also observed that most respondents who disagree with the misinformation posts react with the following reactions, respectively: (1) Ignore the post; (2) ask the author for the information source; (3) block the user who shared the misinformation post; (4) report the post to the social media platform; (5) provide their comments and give the source that supports them; (6) interact with the author of the post to remove the post; (7) interact with the author of the post to question the person who posted it; (8) share it with their friends if it is outrageous and bizarre. Some of these observations are also reported in previous research. For example, Geeng et al, (2020) note that users making other views share misinformation (observation 8, 5). Studies such as Tandoc et al., 2020, p.12 also note how users correct misinformation if the post is created by themselves or by people they know (observation 8). Users also are likely to inquire about the misinformation should they encounter it (observation 2,5,6,7). For example, Geeng et al. (2020) found users interact with misinformation in seven different manners which, include making other views, sharing or liking and misinterpreting misinformation. Another study found that 45% of users question misinformation when they have doubts (Ng and Loke, 2020, p. 4).

However, we believe it is difficult to generalise these behaviours as we noted a different set of behaviour based on how obvious a piece of misinformation is. As such, we contextualise our findings on the basis of the three tasks, answering the RQ2. Interestingly, respondents who disagreed with the misinformation posts 1 and 2 had similar reactions since they ignored when they experienced the misinformation posts 1 and 2. This is a finding that is also evidenced in the literature - most users ignore misinformation when they encounter it (Geeng et al., 2020; Tandoc et al., 2020, p. 12). Respondents also had identical responses since they were willing to block users who shared the misinformation post when they encountered misinformation posts 2 and 3. Respondents also had similar reactions since they were willing to report the misinformation post to the social media platform when they experienced the misinformation tasks 2 and 3. Our findings are aligned slightly with Al-Zaman (2021), who found users can identify, deny, and doubt political misinformation than other misinformation. Therefore, we noted that misinformation posts 2 and 3 have a slightly political side than misinformation post 1. As result, we noted that misinformation posts 2 and 3 have the most disagree rate respectively (29.68%, 59.27%) in comparison to the misinformation post 1(19.63%).

Task	**Agreed**	**Hesitant**	**Disagreed**
Task 1 - Pfizer Vaccine to be a yearly vaccine	435 (42.9%)	206 (20.32%)	373 (36.79%)
Task 2 - Covid origin from unsuccessful experiment in a lab	246 (24.26%)	282 (27.81%)	486 (47.92%)
Task 3 - Covid and Subsequent variants are planned	176 (17.36%)	134 (13.21%)	704 (79.43%)

Table 1: Participant levels of agreement for the three tasks. While most participants disagreed with the misinformation in Task 2 and 3, a majority agreed with the post for Task 1.

The choice of the three tasks (misinformation) also provided us with some insight on how participants assessed their levels of agreement - for example, more participants agreed to the misinformation shared in task 1, while most participants disagreed with the posts in Tasks 2 and 3. The misinformation aspect of task 1 was primarily the 'confirmed by WHO' component, which, we believe, was either missed by the participants or assumed to be true. At the time of the survey, much of the discussion in the media was around the possibility of COVID-19 vaccines becoming a yearly vaccination. Tasks 2 and 3 had more obvious misinformation, which led to more participants disagreeing with them.

This research helps develop a broader understanding of the overarching topic of reactions towards misinformation. Therefore, this research contributes to future studies that focus on developing models for misinformation detection in social media.

CONCLUSION

In conclusion, our preliminary study explored the different ways people react when they encounter health-related misinformation. The findings reveal that respondents have different reactions when they agree, hesitate, and disagree. Respondents generally encounter misinformation by ignoring, requesting sources, blocking, reporting to the social media platforms, commenting with evidence sources, requesting the author to remove the post, and sharing with their friends if it is questionable. There are fewer insights on how people react to misinformation and why misinformation is spread. This study is limited to the context of English speaking countries since the majority of participants are from the US (95%). Furthermore, this study is limited in participant demographics since most participants are MTurk workers who work on many tasks daily, and might be more familiar than the average person with online information. Although this is a work-in-progress paper, future work will look at correlations between participant reactions and their preferred information sources, as well as understand how this varies across the different tasks.

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