
# Factors predicting the sharing of Covid 19 misinformation among social media users in Ireland.

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# Submission of Thesis and Dissertation

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**Abstract**

Social media has become widely used for the dissemination of information, more specifically Covid 19 information during the current pandemic. Not all of the information being shared is factual or verified, in fact it is estimated that more misinformation is shared than information that has been verified as factually correct. Using constructs from the Uses and Gratification theory framework, the current study aimed to examine the predictors of unverified information sharing in the context of social media users living in Ireland. The study was a cross sectional design and quantitative in nature and data was collected from a sample of social media users living in Ireland by way of an online questionnaire ($n$=141). Results found that altruism was the most significant factor predicting unverified information sharing in the context of Covid 19. Education was also found to be negatively associated with unverified information sharing. In contrast no relationship was found between unverified information sharing and information overload, online information trust, perceived susceptibility and severity, cyberchondria or age. There was also found to be no difference in scores of unverified information sharing between sexes. Practical implications for findings as well as limitations of the study and suggested further research are also discussed.

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## Introduction

According to Tankovska (2021), the use of the internet is seen as the ultimate wonder of modern-day society, and with social media connecting the world on many levels, there are no shortage of different platforms to share news, thoughts, photos and videos. From blogs, forums and photo sharing apps to business networks, chat apps and social networks, there are an estimated 4.55 billion people using these platforms to connect worldwide as of October 2021, an increase of more than 400 million on the previous year (Kemp, 2021). As of 2021, there were 3.79 million social media users in Ireland which equates to approximately 76.4% of the total population (Social Media Dublin 2022, 2021). Worldwide in 2012, a person spent on average, 90 minutes engaging with social media, which rose to 136 minutes by 2018 (Whelan et al., 2020). As of 2021, global statistics put an average person's daily consumption of social media at 145 minutes per day, however it is also noted that since the pandemic began and many countries went into lockdown, 43% of consumers have reported spending longer on social media than they would have pre-pandemic (Chaffey, 2021). This can have a significant impact on people's exposure to fake news or misinformation. This literature review will address the concept of fake news and the impact it is having on society. Firstly, an overview of misinformation and its origins will be provided, followed by an overview of the implications that the dissemination of misinformation may have during the current Covid 19 pandemic. Subsequently, factors that may predict the spread of misinformation will be examined referencing previous research carried out in this area, concluding with the purpose of the current study and the hypotheses it aims to explore.

Fake news can be described as information that may be missing facts and truth or where facts and truth are twisted or misrepresented (Sonnet Ireland, 2018). This is not a new phenomenon and is just a new name for misinformation that has been talked about in

mainstream media since the 19th century when news editors would employ local news reporters and make it seem as though they were reporting on news stories from other countries when in fact they never travelled to the country they were supposedly reporting from (McGillan, 2017). Fake news has become such an issue in the current climate that the World Health Organisation (WHO) director, Dr Tedros Adhanom Ghebreyesus, noted that Covid 19 was not only a pandemic but also an 'infodemic' because of all the misinformation circulating on the subject (Laato et al., 2020; Zarocostas, 2020). Fake news initially became very prominent worldwide during the US presidential election where campaigns to spread misinformation and try and influence the election results flooded social media platforms (Kim et al., 2019). This sparked a new wave of fake news campaigns and it is estimated that more fake news articles are shared on social media now than verified news articles (Vosoughi et al., 2018; Talwar et al., 2019). This kind of misinformation spread can have major health implications especially during a worldwide health crisis such as a pandemic (Naeem et al., 2020). There are indications that, in a global health crisis such as the Covid 19 pandemic, belief in misinformation can lead to distrust in government bodies and global health advice and as such can further lead to noncompliance in preventative spread measures such as hand washing and social distancing (Uscinski et al., 2020). In Ireland, Carswell (2021) wrote a news article for the Irish Times in which he quoted the current interim general secretary for the Department of Health, Robert Watt, describing the 'absolutely astounding' abuse of social media at a recent health conference. The article detailed how Mr Watt advised health managers that while social media was a very powerful tool to relay information, they should use it to get information out to the public and not read or engage with the comments as they can be extremely damaging to a person's mental health.

Trying to answer the question of what drives people to share fake news has gained popularity since the start of the pandemic with many studies using a modified version of the

Uses and Gratification (U&G) scale, a measurement that is based on a concept first theorised by Katz et al (1973). The idea of the U&G theory moves away from the traditional idea that behaviours adjust when one is merely exposed to a certain type of media, sometimes unconsciously to the user (Matei, 2020). Rather, the U&G theory proposes that a user is actively involved in the media consumption process and seeks out certain media content to satisfy their own needs (Baxter et al., 2008). This theory also relies on the fact that there is alternative content available that the user can choose from (Korhan & Ersoy, 2015). The U&G theory places the consumer as an active participant in the media acquiring process and contradicts the 'Hypodermic Needle Theory' which is the idea that the media has complete control of the narrative and transmits a message to a passive audience which is consumed without question (Mehrad et al., 2020).

When people are engaging in many forms of social media, all with the capacity to send alerts or notifications at the same time, this can overpower a person's cognitive ability to process such information (Whelan et al., 2020; Islam et al., 2020). If this information overload happens, it can have the potential to severely hamper a person's ability to judge whether the information being consumed is from a verified source or not (Laato et al., 2020). Studies show that higher levels of information overload are associated with increased levels of unverified information sharing (Bermes, 2021; Laato et al., 2020).

A study by Farooq et al (2020) showed that in the context of the Covid 19 pandemic, the perception of how severe the situation was had a significant impact on people's intention to self-isolate. When there is a threat of imminent danger, people feel an increased level of susceptibility and severity, and when advised to remove themselves from a situation they have not experienced before, they tend to abide by the recommended actions (Ling et al., 2019). With people being advised to reduce non-essential travel and work from home, this led to more time for people to be online. Studies have shown that social media use during the

Covid 19 pandemic was linked to mental health issues which would put an extra pressure on those who use social media. This extra pressure reduces a person's ability to rationally verify all of the information that they come across relating to Covid 19, however research findings suggest that there was no significant link between perceived susceptibility and severity and the sharing of misinformation (Laato et al, 2020).

Cyberchondria can be described as the heightened feelings of anxiety or stress related to searching for health-related information online (Laato et al, 2020). Previous research suggests that cyberchondria is closely linked to anxiety (Islam et al., 2020). Given the unprecedented situation that was caused by the pandemic, such as people being told to restrict movements and lockdowns being imposed, more people were trying to get information on Covid 19 from online searches (Liu et al., 2021). The findings of the very limited research carried out were that cyberchondria did not have a direct impact on the sharing of Covid 19 misinformation (Laato et al, 2020).

The level of trust in journalism has declined in recent decades (Laato et al, 2020). This could be as a result of online activity where people can seek out information that echoes their existing beliefs regardless of whether these beliefs are rooted in factual information or not (Apuke & Omar, 2020b). This is further impacted by the fact that most social networking sites have created algorithms that will only show information that is in keeping with a person's beliefs or ideas, creating further confirmation biases (Bakshy et al., 2015). These biases create a situation where people are less likely to be open to hearing opposing views. It has been reported that misinformation sharing online has, at times, been shared more frequently than verified news (Nguyen et al., 2020). Studies report that those who have a high level of trust in online information, even if it has not been verified, are more likely to share that information with others (Talwar et al., 2019; Laato et al., 2020; Apuke & Omar, 2021b).

According to Apuke and Omar (2020b) altruism is the concept of giving to others and expecting nothing in return. In the context of information sharing, it can be described as spreading news or information without seeking any type of reward for doing so (Xia et al., 2021). Previous studies carried out in the area of news sharing and altruism found that they were positively associated (Apuke & Omar, 2021a; Balakrishnan et al., 2021; Apuke & Omar, 2021a; Xia et al., 2021). It was also found that there is evidence that in wanting to help others, the consideration as to whether the information is factually correct or not was not considered when sharing this information (Apuke & Omar, 2020b; Balakrishnan et al., 2021; Apuke & Omar, 2021a). In contrast to this, a study into the sharing of Covid 19 information, found there was a high correlation between altruism and the sharing of information that had been verified (Xia et al., 2021).

Additional factors that may contribute to people accepting misinformation around health include sex (Halpern et al., 2019; Pan et al., 2021; Chen et al., 2015), education (Pan et al., 2021; Pinheiro et al., 2020), and age (Lee et al., 2020; Vijaykumar et al., 2021; Guess et al., 2019; Pinheiro et al., 2020). Two studies found that those with higher the levels of education (Pan et al., 2021; Pinheiro et al., 2020) and income (Pan et al., 2021) were less accepting of health misinformation than those who were in lower socio-economic groups. Two additional studies noted that exposure to misinformation was significantly higher in younger age groups (Lee et al., 2020; Vijaykumar et al., 2021). It is mentioned in one study that this is potentially down to the fact that this age group self-reported that they preferred to get their Covid 19 information from online sources and although they perceived their digital literacy skills to be high, their skills in information gathering and making informed decisions were lower than those in older age groups (Lee et al., 2020). Similarly, Vijaykumar et al. (2021) attributed higher levels of fake news sharing to younger age groups, which may be down to the fact that those in the older age groups are able to use their more extensive

general knowledge to differentiate between accurate and misleading information. Conversely, two studies found that on average, participants in older age categories shared three to four times more fake news stories than those in the younger age categories (Guess et al., 2019; Pinheiro et al., 2020). Sex has also been noted as an influencing factor on the sharing of misinformation with some research showing that females were more likely than males to trust and share health misinformation (Halpern et al., 2019; Pan et al., 2021; Chen et al., 2015a), while another study found the opposite to be the case (Laato et al., 2020).

It is important to get a viewpoint on the motivations behind misinformation sharing worldwide as social media platforms are freely available across the globe. Some social media platforms have implemented some measures to address the rapid sharing of misinformation such as WhatsApp who have limited users in India from forwarding messages to more than five groups at a time (Talwar et al 2019) and Facebook and Google who have proposed algorithm-based solutions to highlight misinformation to users (Zollo & Quattrociocchi, 2018). Understanding the motivations behind why people share misinformation may assist in creating a more rounded solution that will help to educate people in identifying false information and thus stop its dissemination by the user rather than by computer algorithms (Bermes, 2021). Considering this issue from a health perspective, it has been noted by Ling et al (2019) that fake or unverified information can have a serious impact on people's health and can lead to vaccine scepticism. We can see the effect of this on the current pandemic situation when we look at the global figures around the Covid 19 vaccine uptake (Ritchie, 2020).

A number of studies have been carried out on the predictors of fake news sharing on social media using different predictor models following the U&G scale (Talwar et al., 2019; Laato et al, 2020; Islam et al, 2020; Farooq et al, 2020; Apuke & Omar, 2020a) across different parts of the world including Pakistan, Nigeria, Bangladesh & Malaysia, however

some limitations noted in this research points to the fact that these studies in some instances may not be generalisable to the population because of cultural differences (Talwar et al., 2019; Apuke & Omar, 2021a). Other research noted that their participants were recruited from universities and as such may not be representative of the overall population (Laato et al., 2020).

It is for these reasons that this study will seek to gain further information on the motivations behind the spreading of unverified Covid 19 information using the U&G constructs noted above, on a sample of social media users in Ireland with varied levels of education. This could also provide useful information for Irish health services such as the Health Service Executive (HSE) who have a dedicated page on dealing with fake health news which includes a listing of some of the reasons why people might share health misinformation (Challenor, 2021).

**Current Study**

The aim of the current study is to provide a greater understanding of the predictors of misinformation sharing and to further previous research by using a sample of social media users in Ireland. U&G constructs of information overload, perceived susceptibility, perceived severity, cyberchondria, online trust and altruism will be used as predictor variables to measure against a criterion variable, unverified information sharing. Demographic information will also be measured against unverified information sharing to see if there are correlations in the scores of unverified information sharing when measured against age and education. Finally, the study will look to see if there are differences in the unverified information sharing scores between sexes.

Research Question 1: Is there a relationship between age, education or sex and unverified information sharing. The associated hypothesis for research question 1: H1: There is a relationship between age, education or sex and unverified information sharing. This

means that there will be a significant correlation between age, education and sex, and levels of unverified information sharing.

Research Question 2: Is there a relationship between information overload and unverified information sharing. The associated hypothesis for research question 2: H2: There is a relationship between information overload and unverified information sharing. This means that there will a significant correlation between information overload and unverified information sharing.

Research Question 3: Is there a relationship between perceived susceptibility and perceived severity and unverified information sharing. The associated hypothesis for research question 3: H3: There is no relationship between perceived susceptibility and perceived severity and unverified information sharing. This means that there will be no significant correlation between perceived susceptibility and perceived severity and unverified information sharing.

Research Question 4: Is there a relationship between cyberchondria and unverified information sharing. The associated hypothesis for research question 4: H4: There is no relationship between cyberchondria and unverified information sharing. This means that there will be no significant correlation between cyberchondria and unverified information sharing.

Research Question 5: Is there a relationship between online information trust and unverified information sharing. The associated hypothesis for research question 5: H5: There is a relationship between online information trust and unverified information sharing. This means that there will be a significant correlation between online information trust and unverified information sharing.

Research Question 6: Is there a relationship between altruism and unverified information sharing. The associated hypothesis for research question 6: H6: There is a

relationship between altruism and unverified information sharing. This means that there will be a significant correlation between altruism and unverified information sharing.

# Methodology

## Participants

The sample for the current study consisted of 141 (Males: $n = 48$; Females: $n = 93$) adults over the age of 18. Initially, 182 participants responses were recorded, however due to several Likert scale questions being submitted with multiple answers, 41 responses were omitted from the study. One participant declined to consent to complete the questionnaire therefore the questionnaire was not presented to them and no further data was recorded. The minimum sample size required for multiple regression analysis was calculated using the Tabachnick and Fidell (2013) formula which is as follows: ($N > 50 + 8m$) $n$ = number of participants and $m$ = number of predictor variables, therefore the minimum sample size for this study had to be $n = 114$. Participants were all recruited from the island of Ireland, 50 from Dublin (35.5%) followed closely by 42 from Louth (29.8%) with the remaining 49 (34.7%) participants residing in 16 other counties in Ireland including Meath, Wicklow and Kildare. Participants ranged in age from 20 to 77 years, with an average age of 46 ($M = 46.37$, $SD = 12.04$). Of the participants recruited; 97 (68.8%) were full time employees, either working at their place of employment, from home or a hybrid of the two, 16 (11.3%) were employed part time, either working at their place of employment, from home or a hybrid of the two, 16 (11.3%) were retired, 4 (2.8%) were students and 8 (5.7%) were unemployed. Participants had varying degrees of education with the majority having completed a college degree (33.3%), followed by college diploma (20.6%), secondary school (19.1%), masters (12.1%), college certification (12.1%) Ph.D. (1.4%) and other (1.4%).

The most popular social media platforms among participants were WhatsApp (85.8%), Facebook (78%), Instagram (60.3%) and YouTube (48.2%) followed by Twitter, LinkedIn, Snapchat, TikTok, Pinterest and Other. The majority of participants reported

that they check their social media daily (74.5%) or every hour (24.1%) with less than 2% of people reporting that they check social media every other day (0.7%) or once a week (0.7%). 123 participants (87.2%) reported that they lived with a spouse/partner, family or unrelated people, with 17 people (12.1%) reported living alone and 1 (0.7%) reported that their living situation was one other than the listed options.

This study used both a convenience and snowball sampling strategy to recruit participants as the questionnaire was made available online and via chat apps and was reliant on participants willingness to submit their data and take part in the study. Participants were also encouraged to share the questionnaire with those that would be suitable to take part. There was no reward offered to participate in the study.

**Materials**

The study questionnaire was comprised of demographic questions and 24 likert scale questions representing 7 constructs and was designed using Google Forms. The demographic questions were administered to gain an overall profile of the participants in this study. Questions regarding their sex, age, county of residence, employment status, education level, living situation and social media usage were included in this section. The questionnaire was delivered by way of a google forms link and participants were asked to read the information sheet and consent form and tick a box of consent before being brought to the questionnaire (See appendix I).. There was no issue with missing data as participants were required to answer all questions.

**Information Overload**: ($\alpha = .88$) (Whelan et al., 2020; Laato et al., 2020; Apuke & Omar, 2021b) is a 3-item scale designed to measure an individuals' perception of their capacity to consume Covid 19 information on social media. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate more

cognitive overload when consuming Covid 19 information on social media. The highest possible score is 15 and the lowest is 3 (see appendix II). The Cronbach's alpha was (α = .88) which indicates a high level of internal consistency for the scale with this specific sample.

**Perceived Susceptibility**; (α = .73) (Farooq et al., 2020; Laato et al.,2020; Ling et al., 2019) is a 3-item scale designed to measure an individuals' perception of their susceptibility to contracting the Covid 19 infection. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate a higher perception of susceptibility to contracting the Covid 19 infection. The highest possible score is 15 and the lowest is 3 (see appendix II). The Cronbach's alpha was (α = .73) which indicates a high level of internal consistency for the scale with this specific sample.

**Perceived Severity** (α = .56) (Farooq et al., 2020; Laato et al.,2020; Ling et al., 2019) is a 3-item scale designed to measure an individuals' perception of the severity of the effects of contracting the Covid 19 infection. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate a higher perception of severity of the effects of contracting the Covid 19 infection. The highest possible score is 15 and the lowest is 3 (see appendix II). The Cronbach's alpha was (α = .56) which indicates a lower level of internal consistency for the scale with this specific sample.

**Cyberchondria** (α = .75) Laato et al. (2020) is a 4-item scale designed to measure an individuals' levels of amplified anxiety when consuming Covid 19 information on social media. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate higher levels of anxiety when consuming Covid 19 information on social media. The highest possible score is 20 and the lowest is 4 (see appendix II). The Cronbach's alpha was (α = .75) which indicates a high level of internal consistency for the scale with this specific sample.

**Online Trust** (α = .76) (Talwar et al., 2019; Apuke & Omar, 2021b; Laato et al., 2020) is a 2-item scale designed to measure an individuals' trust in the Covid 19 information and news that they consume on social media. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate higher levels of trust in Covid 19 information and news that is consumed on social media. The highest possible score is 10 and the lowest is 2 (see Appendix II). The Cronbach's alpha was (α = .76) which indicates a high level of internal consistency for the scale with this specific sample.

**Altruism** (α = .96) (Apuke & Omar, 2020b) is a 5-item scale designed to measure an individuals' likelihood to share Covid 19 information on social media without thinking of the return benefits. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all three items. Higher scores indicate more cognitive overload when consuming Covid 19 information on social media. The highest possible score is 25 and

the lowest is 5 (see appendix II). The Cronbach's alpha was (α = .96) which indicates a high level of internal consistency for the scale with this specific sample.

**Unverified Information Sharing** (α = .96) (Islam et al., 2020; Laato et al., 2020) is a 4-item scale designed to measure an individuals' propensity to share Covid 19 information on social media without verifying its authenticity. Each item is measured using 5 response anchors ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Each score can be computed by adding up the answers to all four items. Higher scores indicate a higher likelihood of sharing Covid 19 information on social media without verifying that it is factual. The highest possible score is 20 and the lowest is 4 (see appendix II). The Cronbach's alpha was (α = .96) which indicates a high level of internal consistency for the scale with this specific sample.

## Design

The study was qualitative in nature and adopted a non-experimental cross-sectional research design as data was collected from a specific time point. There were 8 predictor variables (PVs) which were as follows: age, education, information overload, perceived susceptibility, perceived severity, cyberchondria, online information trust and altruism. The Criterion variable (CV) was unverified information sharing.

## Procedure

Participants were recruited through social media platforms and chat apps. The questionnaire was uploaded to Facebook and Twitter and sent out in group chats in both WhatsApp and Microsoft Teams. The link included a note to encourage participants to share on the link to anyone who met the criteria and might like to also participate. In this information sheet, a brief description of the study along with the main aims and an estimate of how long it would take to complete the survey (approx. 15 minutes) were noted. It was

also noted that participants must be over 18 for ethical reasons and must use at least one form of social media to meet the criteria for taking part in the study. Participants were also advised that they could withdraw at any point before submitting the questionnaire and that no data would be recorded and there would be no penalty for not participating. Consent was obtained by way of a Yes or No tick box at the end of the information sheet that was presented to the participant before they could view the questionnaire (see appendix I). If participants ticked the 'Yes' box they were brought through the questionnaire. A submit button was presented at the end of the questionnaire and once pressed, a debrief sheet was presented to the participant thanking them for their contribution to the study and listing contact details for the researcher and the research supervisor along with helpline numbers in the event that any details in the questionnaire caused any participants distress or discomfort (see appendix III).

**Ethical considerations**

All data was collected in accordance with the ethical guidelines issued by NCI. All benefits and risks for partaking in the study were clearly stated in the information sheet and it was outlined that there was no incentive being given to take part. All participants were required to provide informed consent before being given access to the questionnaire. Helpline information, such as The Samaritans, Pieta House and Mental Health Ireland were provided in the debrief form for those that felt discomfort or distress as a result of taking part in the study. The email addresses of both the researcher and the research supervisor were also provided in the debrief sheet for participants who may have further queries regarding the nature of the study or the questionnaire itself. (see appendix III).

# Results

## Descriptive Statistics

The current data shown is taken from a sample of 141 participants ($n$ = 141). Of the participants 34% were male ($n$ = 48) and 66% were female ($n$ = 93). Participants ranged in age from 20 to 77 years, with an average age of 46 ($M$ = 46.37, $SD$ = 12.04) see Table 1. 79.5% ($n$ = 112) of participants reported having a college level certification or higher. A total of 80.1% ($n$ = 113) of participants were employed either full time or part time, 2.8% ($n$ = 4) were students, 11.3% ($n$ = 16) were retired and 5.7% ($n$ = 8) were unemployed. The majority of participants used social media every day; 74.5% ($n$ = 105) with 24.1% ($n$ = 34) reporting to engage every hour, see table 1 below for full details.

Table 1.

*Demographic information for participants (n = 141)*

| Variable | Frequency | Valid % |
|---|---|---|
| ***Sex*** | | |
| Male | 48 | 34 |
| Female | 93 | 66 |
| ***Education*** | | |
| Other | 2 | 1.4 |
| Secondary School | 27 | 19.1 |
| College level Certification | 17 | 12.1 |
| College level Diploma | 29 | 20.6 |
| College level Degree | 47 | 33.3 |
| Master's Degree | 17 | 12.1 |
| Ph.D. or higher | 2 | 1.4 |

| | | |
|---|---|---|
| ***Employment*** | | |
| Employed Full Time (at place of work) | 44 | 31.2 |
| Employed Full Time (working from home) | 32 | 22.7 |
| Employed Full Time (hybrid of home / office) | 21 | 14.9 |
| Employed Part Time (at place of work) | 11 | 7.8 |
| Employed Part Time (working from home) | 3 | 2.1 |
| Employed Part Time (hybrid of home / office) | 2 | 1.4 |
| Student | 4 | 2.8 |
| Retired | 16 | 11.3 |
| Unemployed | 8 | 5.7 |
| ***Living Situation*** | | |
| Alone | 17 | 12.1 |
| With spouse/partner | 52 | 36.9 |
| With family | 68 | 48.2 |
| With unrelated persons | 3 | 2.1 |
| None of the above | 1 | 0.7 |
| ***Social Media Usage*** | | |
| Every hour | 34 | 24.1 |
| Daily | 105 | 74.5 |
| Every other day | 1 | 0.7 |
| Once a week | 1 | 0.7 |

Mean, standard deviation, minimum and maximum scores are displayed for 8 continuous variables, Age, Information Overload, Perceived Susceptibility, Perceived Severity, Cyberchondria, Online Information Trust, Altruism and Unverified Information Sharing, see table 2 below.

Table 2.

*Descriptive statistics for continuous variables (n = 141)*

| Variable | *M* [95% CI] | *Median* | *SD* | Range |
|---|---|---|---|---|
| Age | 46.37 [44.36 – 48.37] | 45 | 12.04 | 20 - 77 |
| Information Overload | 8.50 [7.96 – 9.03] | 8 | 3.24 | 3 - 15 |
| Perceived Susceptibility | 10.28 [9.83 – 10.72] | 10 | 2.68 | 3 - 15 |
| Perceived Severity | 11.47 [11.14 – 11.81] | 11 | 2.03 | 3 - 15 |
| Cyberchondria | 11.33 [10.83 – 11.83] | 11 | 3.00 | 6 - 20 |
| Online Information Trust | 4.15 [3.90 – 4.41] | 4 | 1.53 | 2 - 8 |
| Altruism | 9.77 [9.00 – 10.54] | 10 | 4.62 | 5 - 20 |
| Unverified Information Sharing | 6.19 [5.68 – 6.70] | 4 | 3.07 | 4 - 18 |

**Inferential Statistics**

Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. It was found that the following scales were not normally distributed; predictor variables (6) information overload, perceived susceptibility, perceived severity, cyberchondria, online information trust, altruism and criterion variable unverified information sharing. Therefore, a nonparametric Spearman correlation coefficient was computed instead of Pearson correlation coefficient to assess the relationship between the variables noted above. There was a small, significant negative correlation between

education and unverified information sharing ($r$ = -.17, $n$ = 141, $p$ < .05). Results suggest that higher levels of education are associated with lower levels of unverified information sharing.

There was a moderate, significant, positive correlation between altruism and unverified information sharing (r = .58, n = 141, p < .01). Results indicate that higher levels of altruistic tendencies are associated with higher levels unverified information sharing. There were no significant correlations between the other predictor variables (age, information overload, perceived susceptibility, perceived severity, cyberchondria and online information trust) and unverified information sharing (see table 3 below for full details).

Table 3.

*Spearmans rho correlation between variables*

| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 1 | | | | | | | | |
| 2. Education | -.20* | 1 | | | | | | | |
| 3. Information Overload | -.18* | -.07 | 1 | | | | | | |
| 4. Perceived Susceptibility | .06 | .15 | .05 | 1 | | | | | |
| 5. Perceived Severity | .06 | .09 | .04 | .42** | 1 | | | | |
| 6. Cyberchondria | -.20* | .06 | .58** | .18* | .22** | 1 | | | |
| 7. Online Information Trust | -.01 | .12 | .03 | .00 | -.03 | .11 | 1 | | |
| 8. Altruism | .07 | -.01 | .11 | .91 | -.03 | .03 | .34 | 1 | |
| 9. Unverified Information Sharing | .05 | -.17* | .09 | -.08 | -.11 | -.10 | .08 | .58** | |

*Note*: N = 141; Statistical significance: *p < .05 ** p < .01

Multiple regression analysis was performed to determine how well unverified information sharing scores could be explained by seven variables: age, education, information overload, perceived susceptibility, perceived severity, cyberchondria, online information trust, and altruism. Tests for multicollinearity indicated that all Tolerance and VIF values were in an acceptable range. These results indicate that there was no violation of the assumption of multicollinearity and therefore the data was suitable for examination through multiple regression analysis.

Since no a priori hypotheses had been made to determine the order of entry of the predictor variables, a direct method was used for the analysis. The results from table 4 show that the model explained 38.5% of the variance in unverified information sharing scores ($F(8, 132) = 10.39$, $p < .001$). Out of the eight predictor variables, two were found to significantly predict unverified information sharing scores. These were education ($\beta = -.15$, $p < .05$) and more significantly altruism ($\beta = .59$, $p < .001$), full details are displayed in table 4 below.

Table 4

*Standard multiple regression model predicting unverified information sharing total score*

| Variable | $R^2$ | B | SE | β | *t* | *p* |
|---|---|---|---|---|---|---|
| **Model** | .39*** | | | | | .000 |
| Age | | -.01 | .02 | -.5 | -.63 | .530 |
| Education | | -.32 | .15* | -.15 | -2.07 | .040 |
| Information Overload | | .13 | .08 | .13 | 1.53 | .129 |
| Perceived Susceptibility | | .09 | .09 | .07 | 1.00 | .319 |
| Perceived Severity | | -.06 | .11 | -.04 | -.51 | .610 |
| Cyberchondria | | -.15 | .09 | -.15 | -1.66 | .099 |
| Online Information Trust | | -.09 | .15 | -.05 | -.63 | .532 |
| Altruism | | .39 | .05 | .59*** | 8.01 | .000 |

*Note*: $R^2$ = R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B; N = 141; Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

As the criterion variable was not normally distributed, a Mann -Whitney U test was performed to gauge if there were differences in the Unverified Information Sharing scores between males and females. The test indicated that scores were slightly lower for males ($M$ = 68.67, $n$ = 48) than females ($M$ = 72.2, $n$ = 93), $U$ = 2120, $z$ = -.54, $p$ = .587, however the results were not significant.

## Discussion

The current study's aim was to examine the relationship between age, education, information overload, perceived susceptibility, perceived severity, cyberchondria, online information trust, altruism and unverified information sharing. It also sought to identify if there were differences in sex on unverified information sharing scores. Each of the hypotheses were formulated based on the findings of previous research.

From previous research it was hypothesised (H1) that there would be a relationship between age, education and sex and unverified information sharing. With regard to age, this study found that there was no relationship with unverified misinformation sharing. This contrasts with previous research, which in some instances reported that younger age groups were more likely than older age groups to share unverified information (Lee et al., 2020; Vijaykumar et al., 2021) and in other instances found that it was in fact older age groups who were more likely to share misinformation (Guess et al., 2019; Pinheiro et al., 2020). It was observed in this study that there was a negative correlation between education and unverified information sharing, meaning that higher levels of education suggest a lower tendency to share unverified information. This is consistent with previous research which also found a negative association between education and misinformation sharing (Pan et al., 2021; Pinheiro et al., 2020). This study also found no significant difference in unverified information sharing scores between males and females which also contrasts with previous research however previous results have been inconsistent with some studies finding that females were more likely to share unverified information (Halpern et al., 2019; Pan et al., 2021; Chen et al., 2015a) and some finding that females were less likely to share unverified information (Laato et al., 2020). Based on these findings, hypothesis 1 (H1) can be partially rejected however more investigation is needed to explore inconsistences in results.

In accordance with previous research, hypothesis 2 (H2) stated that there would be a relationship between information overload and unverified information sharing. The results suggest no correlation between the variables which contrasts the findings from previous research which suggest that higher information overload scores were related to higher scores in unverified information sharing (Laato et al., 2020). Based on the findings of this study, H2 can be rejected.

In relation to hypothesis 3 (H3) it was proposed based on previous studies that there would not be a relationship between perceived susceptibility and severity of Covid 19 and unverified information sharing. Results are consistent with previous findings that there was no significant correlation between the two measures. Therefore, H3 can be accepted.

Hypothesis 4 (H4) proposed that there would not be a relationship between cyberchondria and unverified information sharing and results indicate no significant correlation between the two. This is in line with previous limited research (Laato et al., 2020) however previous research also noted that information overload had a strong positive correlation with cyberchondria (Farooq et al., 2020; Laato et al., 2020) which is echoed in the results of this study. Based on findings, H4 can be accepted.

With regard to hypothesis 5 (H5) it was proposed, based on previous studies, that there would be a relationship between online trust and unverified information sharing. The results of this study found no significant correlation between the variables. This is contradictory to previous research results which suggest that those who had high levels of trust in online information were more likely to share it without verifying its authenticity (Talwar et al., 2019; Laato et al., 2020; Apuke & Omar, 2021b). H5 can be rejected based on the findings in this study.

Finally, hypothesis 6 (H6) proposed that there would be a relationship between altruism and unverified information sharing. Results show a moderate positive correlation

between the variables which indicate that those who wish to help others for no gain or reward are more likely to share unverified information. These findings are in line with the results of previous research which also showed strong positive correlations between Altruism and unverified information sharing (Apuke & Omar, 2020b; Apuke & Omar, 2021a; Balakrishnan et al., 2021). H6 can be accepted based on the findings of this study.

**Limitations and Future Research**

One major challenge was that this was a cross sectional design study and therefore could not take into account any changes in behaviour over time. The measures that were used for the U&G scales were self-report. This may be problematic, especially in relation to the unverified information sharing aspect because participants may not realise or believe that information around Covid 19 that they share on social media could be misinformation and therefore may not feel that it warrants verifying. Further research could potentially include another type of questionnaire that consists of news headlines for participants to rate as real or fake, similar to research carried out by Green & Murphy (2020).

It is possible that the reason why this study found no correlation between information overload and unverified information sharing is because this study was conducted as Ireland was emerging out of pandemic and life was returning to a more pre pandemic structure. This might suggest that there is less Covid 19 information being circulated online to become overloaded with.

When looking at perceived susceptibility and severity as a predictor for the sharing of unverified Covid 19 information, political perceptions were not taken into consideration in this study. During the early days of the pandemic, the narrative that came from the US leadership appeared to downplay how severe the virus was and this perception was carried through to republican supporters who believed that mainstream media were exaggerating the severity of the virus (Calvillo et al., 2020). It is therefore possible to conceive that if a

government party is highlighting the severity of the virus and imposing severe restrictions to try and contain the spread of the virus that those who oppose the party beliefs will also oppose the narrative being presented about the virus. Further research could explore if political ideology could influence perceived susceptibility or severity in the context of Covid 19 which may therefore have an effect on the dissemination of misinformation. An additional limitation with regard to the perceived severity measure used, was that the Cronbach Alpha was significantly lower in this study than was reported in previous studies (Farooq et al., 2020; Laato et al., 2020). Furthermore, the levels of perceived severity and susceptibility may be influenced by whether or not an individual has contracted, or who knows someone who has contracted, Covid 19, and this data was not captured in this study.

Although the majority of participants reported checking social media at least every day, there was no follow up questions around how long they spent using social media. Perhaps future research could include this detail to assess if scores varied between those who spent long periods of time on social media and those who didn't.

**Conclusion**

Using a selection of U&G constructs this study provided some evidence of predictors of unverified information sharing. Based on the outcome, it is clear that altruism was the most significant predictor of unverified information sharing among social media users in Ireland. Although the results support research into altruism predicting unverified information sharing (Apuke & Omar, 2020b; Apuke & Omar, 2021a; Balakrishnan et al., 2021), there is also research that highlights altruism as a strong predictor for verified information sharing (Xia et al., 2021). This suggests that if those sharing the information for the purpose of helping others were alerted to check its authenticity before sharing, it might reduce the amount of misinformation in circulation.

Education also emerged as having a negative correlation with unverified information sharing, suggesting that those with higher levels of education are less likely to share information that has not been verified. This is an important finding as it suggests that providing more information around how to recognise fake news could allow social media users to regulate their own behaviour around information sharing on social media. Currently, Twitter is trialling a new initiative on their platform whereby users will be allowed to flag news articles and information that they believe are fake (Clayton, 2021). Educating people on how to identify fake news, could ensure that this feature is used to its full potential.

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## Appendix I

**Information and Consent form:**

### Participant Information Leaflet

**Factors predicting the sharing of covid 19 misinformation among Irish social media users.**

You are being invited to take part in a research study. Before deciding whether to take part, please take the time to read this document, which explains why the research is being done and what it would involve for you. If you have any questions about the information provided, please do not hesitate to contact me using the details at the end of this sheet.

**What is this study about?**

I am a final year student in the BA in Psychology programme at National College of Ireland. As part of our degree, we must carry out an independent research project. The aim of the study is to investigate the factors that may predict the sharing of Covid 19 misinformation online among social media users living in Ireland. The questionnaire consists of some basic demographic information and social media usage, along with some questions on your feelings towards Coronavirus (Covid 19) and the information you read about Covid 19 online. The questionnaire should take no longer than 10-15 mins to complete. This research project is being supervised by Dr Michelle Kelly.

**Consent Form**

**What will taking part in the study involve?**

If you decide to take part in this research, you will be asked to complete a questionnaire consisting of 32 questions. The first set of questions will involve general demographic information as well as some questions around your use of social media. In the subsequent questions, you will be presented with certain statements pertaining to Coronavirus (Covid 19) and you will be asked to give your feelings on each, from strongly disagree to strongly agree. The entire study will take no longer than 10-15 minutes to complete.

**Who can take part?**

You can take part in this study if you are aged over 18, reside in any of the 32 counties of Ireland and use at least one of the following forms of social media that allows you to share content and interact with others. Below is a sample, but not an exhaustive list:

- Facebook
- Instagram
- Snapchat
- Twitter
- TikTok
- Whatsapp
- YouTube
- LinkedIn

**Do I have to take part?**

Participation in this research is voluntary; you do not have to take part, and a decision not to take part will have no consequences for you. If you do decide to take part, you can withdraw from participation at any time before you submit your data and there will be no penalty for doing so. If you choose to withdraw during the survey, all of the answers you had given will be deleted and will not be included in the research. One you have submitted your

questionnaire, it will not be possible to withdraw your data from the study, because the questionnaire is anonymous and individual responses cannot be identified.

**What are the possible risks and benefits of taking part?**

There are no direct benefits to you for taking part in this research. However, the information gathered will contribute to research that helps us to understand the factors that may contribute to the spread of Covid 19 misinformation among social media users in Ireland. There is a small risk that some of the questions contained within this survey may cause minor distress for some participants. If you experience this, you are free to discontinue participation and exit the questionnaire. Contact information for relevant support services are also provided at the end of the questionnaire.

**Will taking part be confidential and what will happen to my data?**

The questionnaire is anonymous, it is not possible to identify a participant based on their responses to the questionnaire. All data collected for the study will be treated in the strictest confidence. Only the researcher and academic supervisor will have access to the data collected. Responses to the questionnaire will be stored securely in a password protected/encrypted file on the researcher's computer. Only the researcher and their supervisor will have access to the data. Data will be retained for 5 years in accordance with the NCI data retention policy.

**What will happen to the results of the study?**

The results of this study will be presented in my final dissertation, which will be submitted to National College of Ireland.

**Who should you contact for further information?**

Michelle O'Connor (Researcher): x18113141@student.ncirl.ie

Dr Michelle Kelly (Supervisor): Michelle.Kelly@ncirl.ie

**Support Services**

In the event that participating in this study has caused you any discomfort or distress, please find a list of support service phone numbers below:

Samaritans – 116 123

Pieta House – 1800 247 247

Mental Health Ireland – 01 2841166

In order to proceed to the questionnaire, please indicate whether you have read and understood the consent form?

- ☐ Yes
- ☐ No

# Appendix II

## Likert Scale Questions – U&G Constructs

| Construct | ID Number | Statement | Response Options | | | | |
|---|---|---|---|---|---|---|---|
| | | | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
| **Information Overload** | IO1 | I am often distracted by the excessive amount of information on social media about Coronavirus (COVID-19) | 1 | 2 | 3 | 4 | 5 |
| | IO2 | I find that I am overwhelmed by the amount of information that I process on a daily basis from social media about Coronavirus (COVID-19) | 1 | 2 | 3 | 4 | 5 |
| | IO3 | I receive too much information regarding the Coronavirus (COVID-19) pandemic to form a coherent picture of what's happening | 1 | 2 | 3 | 4 | 5 |
| **Perceived Susceptibility** | PSUS1 | I am vulnerable to contracting Coronavirus (COVID-19) in given circumstances | 1 | 2 | 3 | 4 | 5 |
| | PSUS2 | I don't think I am likely to get the Coronavirus (COVID-19) - *reverse scored in (Farooq et al., 2020)* | 5 | 4 | 3 | 2 | 1 |
| | PSUS3 | I am at risk of catching the Coronavirus (COVID-19) | 1 | 2 | 3 | 4 | 5 |
| **Perceived Severity** | PSEV1 | The negative impact of Coronavirus (COVID-19) is very high | 1 | 2 | 3 | 4 | 5 |
| | PSEV2 | Coronavirus (COVID-19) can be life-threatening | 1 | 2 | 3 | 4 | 5 |
| | PSEV3 | The Coronavirus (COVID-19) is a serious threat for someone like me | 1 | 2 | 3 | 4 | 5 |
| **Cyberchondria** | CYBER1 | After reading information about Coronavirus (COVID-19) online, I feel confused | 1 | 2 | 3 | 4 | 5 |
| | CYBER2 | I feel frightened after reading information about Coronavirus (COVID-19) online | 1 | 2 | 3 | 4 | 5 |
| | CYBER3 | I feel frustrated after reading information about Coronavirus (COVID-19) online | 1 | 2 | 3 | 4 | 5 |
| | CYBER4 | Once I start reading information about Coronavirus (COVID-19) online, it is hard for me to stop | 1 | 2 | 3 | 4 | 5 |
| **Online Trust** | OT1 | I trust the information that is shared on social media | 1 | 2 | 3 | 4 | 5 |
| | OT2 | I trust the news that is shared on social media | 1 | 2 | 3 | 4 | 5 |
| **Altruism** | ALT1 | I share content related to COVID-19 on social media because I love assisting others | 1 | 2 | 3 | 4 | 5 |
| | ALT2 | I share content related to COVID-19 on social because it feels right to assist others to resolve their issues | 1 | 2 | 3 | 4 | 5 |
| | ALT3 | I share content related to COVID-19 on social media because I want motivate and inspire others | 1 | 2 | 3 | 4 | 5 |
| | ALT4 | I share content related to COVID-19 on social media because I want to offer information to others | 1 | 2 | 3 | 4 | 5 |
| | ALT5 | I share content related to COVID-19 on social media because I want to admonish others | 1 | 2 | 3 | 4 | 5 |
| **Unverified Information Sharing** | MISS1 | I often share information or news on COVID-19 without checking its authenticity | 1 | 2 | 3 | 4 | 5 |
| | MISS2 | I share information or news on COVID-19 without checking facts through trusted sources | 1 | 2 | 3 | 4 | 5 |
| | MISS3 | I share information or news on COVID-19 without verifying it | 1 | 2 | 3 | 4 | 5 |
| | MISS4 | I share information or news on COVID-19 even if sometimes I feel the information may not be correct | 1 | 2 | 3 | 4 | 5 |

# Appendix III

## Debrief Sheet


### Debriefing Sheet

I would like to sincerely thank you for taking the time to participate in this study. The aim of the study is to investigate the most common factors that may predict the spread of misinformation online in relation to Covid 19. Due to the anonymous nature of this study, it is not possible to withdraw data that has been submitted as your answers cannot be identified by the researcher.

Your data will be solely used as part of this research paper and will only be accessible to the researcher and supervisor.

### Contact Information

If you have any queries about the questionnaire, please feel free to contact:

Michelle O'Connor (Researcher): x18113141@student.ncirl.ie

Dr Michelle Kelly (Supervisor): michelle.kelly@ncirl.ie

In the event that participating in this study has caused you any discomfort or distress, please find a list of support service numbers below:

**Support Service Numbers:**

Samaritans – 116 123

Pieta House – 1800 247 247

Mental Health Ireland – 01 2841166