Fear, social isolation and compulsive buying in response to COVID-19 in a religiously diverse UK sample

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Abstract

This study examines differences between Christians, Muslims and non-religious people on three key psychological variables in relation to COVID-19: fear, social isolation, and compulsive buying. A representative sample of 411 participants in the United Kingdom (UK) completed a survey consisting of measures of political trust, social isolation, compulsive buying behaviours, fear of COVID-19 and their preferred source of information regarding COVID-19. Independent samples t-tests showed that both Christians reported a stronger social network, more political trust but more fear of COVID-19 than non-religious people, and that Muslims reported more fear of COVID-19 and more compulsive buying than non-religious people. Non-religious people accessed more varied sources of information regarding COVID-19 than Christians and Muslims. Finally, source of information regarding COVID-19 had an impact on levels of political trust, fear of COVID-19, social isolation and compulsive buying behaviours. The results suggest that religious groups in the UK vary in the extent to which they experience fear, social isolation and compulsive buying in relation to the pandemic. Public health messaging and awareness-raising campaigns tailored to particular religious groups may be effective in reducing the psychological burden of COVID-19 in the UK.

Keywords
COVID-19, fear, social isolation, compulsive buying, religion

Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by SARS-CoV-2. It was first identified in Wuhan, Hubei province, China in December 2019 and has rapidly spread to most major cities and towns in the world, resulting in its designation as a global pandemic. As of 10 June 2020, there were 290,143 lab-confirmed cases of the virus in the United Kingdom (UK) and 41,128 COVID-19 patients (14.2% of those who tested positive) have died.[1]

On 23 March, the UK announced a nationwide lock-down, with many businesses temporarily closing and mass gatherings of people being prohibited, in order to curb the spread of the virus. Moreover, an official policy of 'social distancing' was introduced on 1 May, which required people to stay at home and to avoid all physical contact with people outside of one's household (UK Government, 2020). When the data for this study were collected, the UK had a policy of testing only those patients who required hospital treatment for symptoms of COVID-19 and, thus, the actual prevalence of the condition in the general population was unknown and there was uncertainty in the general population as well as in the scientific

community. Patients with mild symptoms were advised to self-isolate and to recuperate from the condition at home.

COVID-19 has significant implications for psychological health and the pandemic has given rise to additional public health challenges. These include fear, which can cause distress (Schultz et al., 2016); social isolation, which is associated with poor mental health outcomes (Wang et al., 2017); and compulsive buying, which is characterised by excessive cognition and behaviour in relation to buying and in turn associated with distress and impairment (Kellett & Bolton, 2009). This study examines differences between religious groups in fear, social isolation, and compulsive buying in response to COVID-19 in a representative sample of adults in the UK. This is vital to understanding cognition, affect and behaviour in relation to the pandemic in the diverse UK population.

Psychological outcomes
Fear
Fear is an emotional and physiological reaction to a hazard (in this case, infection with COVID-19) and can be psychologically distressing (Schultz et al., 2016). Fear is manifested in individual thought and action and have a 'contagion effect' on others (Lara et al., 2012; Towers et al., 2015). Fear has been observed in response to various outbreaks of disease including Ebola, HIV/AIDS and now COVID-19 (Ahorsu et al., 2020; Towers et al., 2015). Although distressing, fear can lead people to adopt preventive behaviours but, when excessive, it can also lead to inertia and engagement in risk behaviours, which can increase the incidence of infection (Witte & Allen, 2000). Fear-inducing stimuli include news reporting which specify the hazard without clearly articulating realistic action that can be undertaken in order to limit risk, 'alarmist' views articulated on social media and mortality salience, that is, the emphasis of a connection between infection and mortality (O'Neill & Nicholson-Cole, 2009). As a psychological variable, fear is experienced differently by people and must therefore be examined in various groups at risk of COVID-19 in the UK.

Social isolation
Although social distancing is a necessary tool to combat COVID-19, it comes with significant costs to both psychological and physical health (Courtin & Knapp, 2017). It is possible to self-isolate physically without becoming socially isolated since one can use non-physical methods of communication. Social isolation is a well-documented risk factor for poor mental and physical health, and increased morality (Cacioppo & Hawkley, 2003). Incidentally, individuals in the high-risk groups, such as older people and those with underlying health conditions, are also at higher risk of poor health outcomes due to social isolation because they tend to be in greater need of social support – a negative correlate of social isolation. Social isolation may exacerbate feelings of loneliness, that is, the subjective perception of being disconnected and isolated. Depressive symptomatology is the most significant psychological consequence of social isolation (Santini et al., 2020). It is noteworthy that, given that social isolation precludes the derivation of social support through engagement with other people, it may lead individuals to rely on maladaptive strategies for coping with adversity, such as the COVID-19 pandemic. One such maladaptive strategy may be compulsive buying.

Compulsive buying

Compulsive buying constitutes an extreme and maladaptive cognition and behaviour which results in uncontrollable retail activity – often in response to threatening societal challenges (Kellet & Bolton, 2009). Indeed, pandemics do appear to constitute a significant trigger for compulsive buying (which is also referred to as 'panic buying'), which has been noted in the UK and elsewhere in the COVID-19 pandemic (e.g. Hall, 2020). This is clearly construed as a self-protective measure in the face of fear and uncertainty associated with the pandemic.

On the one hand, compulsive buying can give rise to personal difficulties, such as financial problems, guilt, remorse and anxiety, and relationship problems (Kellet & Bolton, 2009). Moreover, compulsive buyers are more likely to engage in secrecy and concealment, potentially perpetuating social isolation (Weinstein et al., 2016). On the other hand, compulsive buying can engender significant public health challenges, resulting in increased anxiety in society, a shortage of vital goods, and a disproportionate impact on more vulnerable groups in society, such as older people (Carrick, 2020).

While compulsive buying is not very prevalent in the general population (Black, 2007), it can increase in situations of uncertainty, such as the COVID-19 outbreak. Indeed, in response to this pandemic, people began to engage in compulsive buying, targeting packs of antibacterial wipes and hand sanitisers, in particular (Hall, 2020). It is noteworthy that, in the context of a pandemic, compulsive buying can increase not only fear and anxiety but also the risk of infection given the number of individuals frequenting relatively small spaces, such as supermarkets.

Religion and society in the UK
The UK is an ethnically and religiously diverse society. Religion can be defined in terms of a social group membership with which individuals self-identify regardless of the extent to which they actively practice the religion. As a group membership, religion can provide social support, a sense of connection and, crucially, exposure to social norms associated with the group membership (Ysseldyk, Matheson & Anisman, 2010). These social norms may include beliefs, attitudes and practices which are deemed to be 'appropriate' and will be shared to varying degrees by members of the religious group. These norms can shape both understanding of COVID-19 but also coping strategies in response to psychological stress.

As Pargament (1997) has noted, in the face of potentially fatal disease (as COVID-19 has proven to be) people may begin to cope spiritually when religion is available and thus derive respite from the psychological stress associated with the hazard (see Lopes & Jaspal, 2020). Furthermore, as themes of healing are central to many religious traditions, being involved in one's religious group can potentially promote effective coping (Ellison, 1994). This has been shown in the context of coping with HIV (e.g. Pargament et al., 2004). In times of uncertainty and crisis, individuals may develop a closer relationship to their respective religious groups, viewing them as a source of guidance (Balcacchino & Draper, 2001; Stone et al., 2003).

It is possible that a religious group shares a particular perception of COVID-19, a view on how it should be counteracted, and a common level of trust in the authorities who provide information about the pandemic. Political trust is a significant construct that determines how people will behave in response to a pandemic given that this will shape the extent to which individuals endorse guidance issued by the authorities. However, religious groups differ in their levels of political trust, which can depend on several factors, including perceived treatment by political institutions

in the past (Maxwell, 2010). Drawing on the minority stress theory (Meyer, 2003), which posits that stressors related to one's minority status (e.g. as a Muslim in a context in which this identity is stigmatised) can undermine psychological wellbeing (e.g. excessive fear) and potentially prompt maladaptive coping behaviours (e.g. compulsive fear). Due to minority stress, it is possible that there will be an element of mistrust towards political institutions in religious minority communities (Maxwell, 2010). Furthermore, they may be less likely to trust mainstream media outlets due to this general institutional mistrust (Jaspal, 2014). This may be applicable to public responses to the COVID-19 pandemic.

According to the 2011 Census, which provides the most recent data on religious group identification in England and Wales, 31,479,876 respondents (59.4%) self-identified as Christian, 13,114,232 (24.7%) as having no religion[2], and 2,660,116 (5%) as Muslim. It is important to understand how these three significant groups in the UK perceive and react to COVID-19. They may share sets of norms concerning the perception and response to the pandemic, which must be investigated in order to understand the specific types of psychological burden in these communities, how to reach individuals in them and, ultimately, to plan an effective national response to the pandemic.

Hypotheses

Drawing largely on the minority stress theory (Meyer, 2003), which posits that (religious) minorities are more susceptible to stressors and thus potentially to decreased institutional trust and poorer psychological outcomes, the following hypotheses are tested:

1. There are statistically significant differences between religious groups in their levels of political trust, social isolation, fear of COVID-19 and compulsive buying.
2. There are differences between religious groups in their sources of information regarding COVID-19.
3. There are main effects of sources of information about COVID-19 on fear of COVID-19, political trust, length of self-isolation, and compulsive buying.

Method

Participants

A representative sample of 411 individuals in the UK was recruited using *Prolific*, an online recruitment platform, to participate in a survey concerning COVID-19, social isolation and compulsive buying. All participants resided in the UK. Participants were aged between 18 and 76 (*M*=44.85, *SD*=15.38). There was an even distribution of men (*N*=202, 49%) and women (*N*=206, 50%). Most participants reported White British ethnicity (*N*=301, 73.2%) and British citizenship (N=375, 91.2%). The three largest religious groups were: non-religious people (*N*=240, 58.4%); Christians (*N*=133, 32.4%); and Muslims (*N*=18, 4.4%). See Table 1 for a description of the participant sample.

Table 1

Measures

Political trust was measured using both the Trust in Politicians and the Trust in the Political System Scales (Mutz & Reeves, 2005), which included items, such as "Politicians generally have good intentions" and "At present I feel very critical of our

political system". The items were adapted to the UK context. Items were scored on a five-point Likert scale (α=.93). ***Social network and self-isolation*** were measured as follows: first, participants whether or not they were self-isolating and, if so, the length of time that they had been doing so on a Likert scale (1=less than a week to 6=more than 4 weeks); and second, the Lubben Social Network Scale (Lubben et al., 2006) was used to measure strength of social network and social support, including items, such as "How many relatives do you see or hear from at least once a month." It is measured on a five-point scale (0=never to 5=nine or more) (α=.82). ***Compulsive buying behaviour*** was measured as follows: first, participants indicated the frequency of going to the supermarket on a Likert scale (1=Once a week to 5=Five times or more a week); and second, they indicated the number of packs of toilet roll paper, antibacterial wipes and bottles of hand sanitiser that they purchased during each visit on a Likert scale (1=None to 7=5 or more). Third, the Compulsive Buying Behavior Scale (Edwards, 1993) was adapted to measure compulsive behaviour in relation to the COVID-19 outbreak. The scale includes items such as "I buy things when I do not need anything", which are measured on a five-point Likert scale (1=not at all to 5= totally applies) (α=.92). ***Fear of COVID-19*** was measured using the Fear of COVID-19 Scale (Ahorsu et al., 2020), which included items such as "I am most afraid of COVID-19". It was measured on a five-point Likert scale (1=strongly disagree to 5=strongly agree) (α=.86). ***Sources of information regarding COVID-19*** were measured using a single item. ***Frequency of watching/reading news about COVID-19 and thinking/talking about COVID-19 in a day*** were measured using a Likert scale (1=Not at all to 4=More than 5 times a day).

Results

Descriptive statistics for key variables

The mean scores for key variables were as follows: strength of social network (*M*=21.89, *SD*=6.61), suggesting moderate social isolation; fear of COVID-19 (*M*=25.66, *SD*=7.55), indicating moderate to high levels of fear; political trust (*M*=36.33, *SD*=8.89), suggesting moderate political trust; compulsive buying (*M*=38.94, *SD*=14.91), showing relatively low compulsive buying; length of self-isolation (*M*=1.81, *SD*=.98), indicating that on average people have been in self-isolation for one week; and length of time working from home (M=1.83, SD= 1.21), suggesting that on average people had been working from home for one week (see Table 2)

Table 2

Self-isolation

The vast majority of participants (*N*=370, 90%) reported being in self-isolation due to COVID-19 while 44 (10%) were reportedly not. The majority reported self-isolating for less than 1 week (*N*=192, 47.2%); 129 (31.4%) for 1 week; followed by 2 weeks (*N*=70, 17.2%); 3 weeks (*N*=9, 2.2%); more than 4 weeks (*N*=6, 1.5%); and only one person reported being in self-isolation for 4 weeks (*N*=1, .2%).

There was an even distribution of those working from home due to the outbreak (*N*=205, 49.9%) and those not working from home (*N*=206, 50%). The majority of people who had been working from home reported doing so for less than 1 week (*N*=231, 56.2%); 81 for 1 week (19.7%); 71 for 2 weeks (17.3%); 11 for three weeks (2.7%); and 16 for more than 4 weeks (3.9%); while only 1 (.2%) had been working from home for 4 weeks.

Sources of information about COVID-19

The majority of participants reported accessing information about COVID-19 through television news channels like the BBC (*N*=236, 57.4%), followed by Other (e.g. radio news, Reddit) (*N*=39, 9.5%), social media (e.g. Facebook) (*N*=38, 9.2%), UK government websites (N=38, 9.2%), newspapers (*N*=35, 8.5%), and the National Health Service website (*N*=17, 4.1%). Only 8 participants accessed the World Health Organization website (1.9%).

Frequency of watching/reading news, and thinking and talking about COVID-19 in a day

The mean for frequency of watching/reading news about COVID-19 in a day was 2.77 (*SD*=.84), which suggested that, on average, people in the UK watch/read news about COVID-19 3-5 times a day. The mean for the frequency of thinking about COVID-19 was 3.24 (*SD*=.84), which indicated that, on average, people in the UK think about COVID-19 at least 3-5 times a day. Moreover, 205 participants (49.8%) think about COVID-19 more than 5 times a day. The mean for the frequency of talking about COVID-19 in a day was 2.94 (*SD*=.88), suggesting that, on average, people in the UK talk about COVID-19 3-5 times a day.

Frequency of going to the supermarket

The mean frequency of going to the supermarket was 1.68 (*SD*=.91), suggesting that on average people in the UK go shopping for groceries once or twice a week. The mean frequencies of purchasing packs of toilet paper, antibacterial wipes and bottles of hand sanitiser during each supermarket visit were 1.93, *SD*=.89; 1.47, *SD*=.78; and 1.32, *SD*=.67, respectively. On average, people in the UK reported purchasing one pack of toilet paper and one pack of antibacterial wipes and no hand sanitiser during each supermarket visit.

Normality Checks

Kolmogorov-Smirnov tests showed that all variables were normally distributed except for compulsive buying [*D*(411)=4.29, *p*<.001]. Transformations were applied to correct this issue, resulting in a normal distribution.

Effects of religion on the key variables

Independent samples t-tests bootstrapped at 1000 samples were conducted and showed statistically significant differences between the most evenly represented religious groups (non-religious and Christians) for strength of social network [*t*(367)=-2.034, *p*=.043], *d*=0.3; 95% CIs (-2.78660, -.10262); political trust [*t*(367)=-3,825, *p*<001], *d*= 0.4; 95% CIs (-5.63266, -1.91438); fear of COVID-19 [*t*(367)=-3.251, *p*=.001], *d*=0.4; 95% CIs (-4.31736, -1.07498); number of antibacterial wipes purchased during each supermarket trip [t(367)=-2.490,p=.013)], *d*=0.3; 95% CIs (-.26903, -.03201) and number of bottles of hand sanitiser purchased during each supermarket trip [*t*(367)=-2.665, p=.008], *d*=0.3; 95% CIs (-.22838, -.03127).

Christians reported a stronger social network (*M*=22.72, *SD*=6.17), more political trust (*M*=38.95, *SD*=8.27) and more fear of COVID-19 (*M*=27.27, *SD*=8.16) than non-religious people (*M*=21.27, *SD*=6.79 for strength of social network; *M*=35.26, *SD*=9.19 for political trust and *M*=24.56, *SD*=6.77 for fear of COVID-19, respectively). Christians also reported purchasing much more antibacterial wipes (*M*=1.57, *SD*=.60) and more bottles of hand sanitiser (*M*=1.41, *SD*=.49) than non-religious people (*M*=1.42, *SD*=.50 for number of antibacterial wipes and *M*=1.28, *SD*=.38 for number of bottles of hand sanitiser, respectively).

There were also statistically significant differences between non-religious people and the second largest religious group in the sample, Muslims, for fear of COVID-19 [$t(253)$=-.3.034, p=.003], d=0.6; 95% CIs (-9.35626,-.95996); compulsive buying [$t(253)$=-2.434, p=.016], d=0.6; 95% CIs (-16.63319, -1.23377); number of antibacterial wipes purchased during each supermarket trip [$t(253)$=-2.973, p=.008]; d=0.9; 95% CIs (-1.00815, -.19888); number of bottles of hand sanitisers purchased during each supermarket trip [$t(253)$=-2.900, p=.010], d=0.9; 95% CIs (-.89716, -.16523) and length of self-isolation [$t(253)$=-2.338,p=.020], d=0.6; 95% CIs (-.92135, -.02856).

Muslims exhibited much more fear of COVID-19 (M=29.72, SD=9.23) and more compulsive buying due to COVID-19 (M=46.73, SD=15.73), and purchased more antibacterial wipes and hand sanitisers (M=2.02, SD=.85 and M=1.82, SD=.77) than non-religious people (M=24.56, SD=6.77 for fear of COVID-19; M=37.85, SD=15.40 for compulsive buying; M=1.42, SD=.50 for number of antibacterial wipes and M=1.28, SD=.38 for number of bottles of hand sanitiser, respectively). Muslims (M=1.86, SD=.77) also have been in self-isolation for a longer period than non-religious people (M=1.80, SD=.83).

Concerning the comparison between Christians and Muslims, there were statistically significant differences between those two groups for political trust [$t(148)$=2.254, p=.026], d=0.6; 95% CIs (.73730, 8.66839); compulsive buying [$t(148)$=-2.200, p=.029], d=0.5; 95% CIs (-14.84489, .58772); number of antibacterial wipes purchased during each supermarket visit [$t(148)$=-2.168, SD=.043], d=0.6; 95% CIs (-.87633, -.02278); number of bottles of hand sanitiser purchased during each supermarket visit [$t(148)$=-2.142, p=.045], d=0.6; 95% CIs (-.79227, -.04336) and length of self-isolation [$t(148)$=-2.333, p=.021], d=0.5; 95% CIs (-.87766, .00029).

On the one hand, Christians exhibited much more political trust (M=38.95, SD=8.27) than Muslims (M=34.28, SD=8.04). On the other hand, Muslims exhibited much more compulsive buying (M=46.73, SD=15.73), purchased more antibacterial wipes and hand sanitiser bottles (M=2.02, SD=.85 and M=1.82, SD=.77) and had been in self-isolation (M=2.28, SD=.90) for a longer period than Christians (M=39.67, SD=12.97 for compulsive buying; M=1.57, SD=.60 for number of antibacterial wipes and M=1.41, SD=.49 for number of bottles of hand sanitiser and M=1.85, SD=.72 for length of self-isolation, respectively). These results support hypothesis 1.

Table 3

Effects of religion on sources of information regarding COVID-19
A chi-squared test with a bootstrap at 1000 samples was performed to analyse relationships between religious groups and key sources of information regarding COVID-19. The chi-squared test was statistically significant χ2(1,42)=73.51, p=.002, V=.73, p=.002.

Generally, more non-religious people use social media to keep informed about COVID-19 (N=24, 63.2%) than both Christians (N=7, 18.4%) and Muslims (N=4, 10.5%). They also are more likely to use other sources of information (e.g. Reddit) (N=33, 84.6%) than both Christians (N=2, 10.3%) and Muslims that do not use other sources of information (N=0, 0%). They are also more likely to access the NHS website (N=12, 70.6%) than Christians (N=5, 29.4%) and Muslims who do not access it (N=0, 0%). Finally, non-religious people also are more likely to access the UK government website to keep informed about COVID-19 (N=23, 60.5%) than Christians (N=13, 9.8%) and Muslims (N=1, 5.6%). This suggests that non-religious

people are more informed about COVID-19 and access a greater variety of sources of information about COVID-19 than Christians and Muslims. These results support hypothesis 2.

Effects of sources of information regarding COVID-19 on the key variables
There were statistically significant main effects of sources of information regarding COVID-19 on political trust [$F(6,403)=2.502$, $p=.022$]; fear of COVID-19 [$F(6,403)=4.222$, $p<.001$]; on compulsive buying [$F(6, 403)=3.438$, $p=.003$] and also on the number of antibacterial wipes purchased during each supermarket trip [$F(6,403)=5.486$, $p<.001$] and on the number of bottles of hand sanitiser purchased during each supermarket trip [$F(6,406)=3.492$, $p=.002$].

LSD tests showed that people who use social media to gain information about the COVID-19 show less political trust ($M=32.41$, $SD=1.44$) than people who watch TV news (e.g. BBC) ($M=37.20$, $SD=8.94$) and than people who access the UK government website ($M=38.71$, $SD=8.59$) [$t=-4.80$, $p=.002$; 95% CIs (-7.8788, -1.7191); $t=-6.31$, $p=.002$; 95% CIs (-10.3210,-2.2893)]. People who watch TV news exhibit much more fear of COVID-19 than people who access the NHS website and use other types of sources of information [$t=4.59$, $p=.013$; 95% CIs (.9614, 8.2156); $t=5.63$, $p<.001$; 95% CIs (3.1271, 8.1253). Furthermore, people who access the UK government website show much more fear of COVID-19 than those who use other sources of information [$t=4.66$, $p=.006$; 95% CIs (1.3752,7.9541). Moreover, people who read newspapers show much more fear of COVID-19 than people who use other sources of information [t=3.77, $p=.028$, 95% CIs (.4121,7.1322).

People who use social media also show much more compulsive buying ($M=44.68$, $SD=13.13$) than people who watch TV news (e.g. BBC) ($M=37.94$, $SD=14.74$) and than people who use other sources to gain information ($M=32.58$, $SD=16.14$) [$t=6.74$, $p=.008$, 95% CIs (1.7850, 11.6967); $t=12.10$, $p<.001$; 95% CIs (5.6826, 18.5246). People who watch TV news show much less compulsive buying than people who access the World Health Organization (WHO) website ($M=50.30$, $SD=13.75$) and much more compulsive buying than people who use other sources of information [$t=-12.36$, $p=.016$; 95% CIs (-22.4230,-2.2979); $t=5.36$, $p=.030$; 95% CIs (.5176, 10.2079). People who access the WHO website show much more compulsive buying than people who access the UK government website ($M=39.05$, $SD=9.74$) and other sources of information [$t=11.25$, $p=.043$; 95% CIs (.3665,22.1335); $t=17.72$, $p=.001$; 95% CIs (6.8639,28.5824). People who access the NHS website show much more compulsive buying ($M=41.08$, $SD=13.78$) than people who use other sources of information [$t=8.50$, $p=.040$; 95% CIs (.3699, 16.6327). People who access the UK government website show much more compulsive buying than people who use other sources of information [t=6.47, p=.047; 95% CIs (.0957, 12.8506) and finally people who read newspapers also show much more compulsive buying ($M=40.29$, $SD=13.99$) than people who use other sources of information [$t=7.66$, $p=.021$; 95% CIs (1.1475, 14.1764)].

Concerning the number of antibacterial wipes that people purchased during each supermarket visit, post-hoc LSD tests showed that people who use social media purchased more wipes ($M=1.53$, $SD=.59$) than people who access the NHS website ($M=1.18$, $SD=.23$) and use other sources of information ($M=1.17$, $SD=.21$) [$t=.35$, $p=.033$; 95% CIs (.0275,.6734); $t=.36$, $p=.006$; 95% CIs (.1048, .6106). People who watch TV news purchased many more antibacterial wipes ($M=1.60$, $SD=.62$) than people who access the NHS website and than people who access the UK government website ($M=1.4$, $SD=.44$) and use other sources of information [$t=.42$, $p=.003$; 95%

CIs (.1472, .7012); *t*=.20, *p*=.040; 95% CIs (.0095,.3955); *t*=.43, *p*<.001; 95% CIs (.2406,.6223)]. People who access the WHO website purchased many more antibacterial wipes (*M*=1.9, *SD*=.77) than people who access NHS website, and people who access UK government website and read newspapers (*M*=1.46, *SD*=.53) and use other sources of information [*t*=.76, *p*=.002; 95% CIs (.2873,1.2323); *t*=.54, *p*=.014; 95% CIs (.1094,.9668); *t*=.48, *p*=0.30; 95% CIs (.0457,.9095) and *t*=.77, *p*<.001; 95% CIs (.3393,1.1948). Finally, people who read newspapers also purchased many more antibacterial wipes than people who use other type of sources of information [t=.29, p=.027; 95% CIs (.0328,.5460).

Finally, concerning the number of bottles of hand sanitiser purchased during each supermarket visit, post-hoc LSD tests showed that people who access the WHO website purchased many more bottles of hand sanitiser (*M*=1.75, *SD*=.74) than people who use social media (*M*=1.29, *SD*=.42), those who watch TV news (*M*=1.42, *SD*=.50), those who access the NHS website (*M*=1.12, *SD*=.0) and those who access the UK government website (*M*=1.21, *SD*=.28), than people who read newspapers (*M*=1.33, *SD*=.44) and than those who use other sources of information (*M*=1.28, *SD*=.35) [*t*=.46, *p*=.009, 95% CIs (.1137, .8098); *t*=.34, *p*=.040, 95% CIs (.0150,.6571); *t*=.64, *p*=.001, 95% CIs (.2551,1.0206); *t*=.54, *p*=.002, 95% CIs (.1950, .8894); *t*=.43, *p*=.017, 95% CIs (.0759,.755) and *t*=.47, *p*=.007, 95% CIs (.1283,.8212). People who watch TV news purchased many more bottles of hand sanitiser than those who access the NHS website and the UK government website [*t*=.30, *p*=.009, 95% CIs (.0774,.5261) and *t*=.20, *p*=.010, 95% CIs (.0498, .3624), respectively]. These results support hypothesis 3.

Discussion

This study suggests that the vast majority of people in the UK are self-isolating as per the UK government requirement to do so, and that there is now moderate social isolation among participants. However, there are only moderate levels of political trust in the sample, and individuals are exhibiting medium to high levels of fear of COVID-19. There are relatively low levels of compulsive buying in the sample. The study reveals clear differences between Christians, Muslims and non-religious people in the UK and the potential pathways to poor mental health outcomes among individuals from these groups. Furthermore, it is shown that people use a wide range of sources to acquire information about COVID-19 which in turn impact on political trust, social isolation, fear, and compulsive buying behaviours. Given the significant impact that the pandemic has had on people's lives, including work, leisure and their ability to interact with others as well as the media's focus on the progression of the pandemic, people are frequently thinking, talking and informing themselves about the pandemic. In short, COVID-19 is at the psychological forefront of the general population and, thus, the psychological impact of the pandemic must constitute a focus of empirical research.

The study reveals important religious group differences in cognition and behaviour in relation to COVID-19. Despite the widely observed policy of social distancing and self-isolation (Glass et al., 2006), Christians appear to be less socially isolated and to exhibit higher levels of political trust than both Muslims and non-religious people. As a dominant majority in the UK, Christians may feel more supported and less suspicious of political institutions than Muslims who, as a religious minority group, are more likely to face prejudice, including Islamophobia (Jaspal & Cinnirella, 2010). Conversely, minority groups, such as Muslims, tend to perceive lower levels of institutional support, which in turn may decrease trust in political

institutions (Maxwell, 2010). This is consistent with minority stress theory (Meyer, 2003) which posits that individuals from stigmatised minority groups may be at risk of poorer psychological outcomes (e.g. fear) but also maladaptive coping behaviours in the absence of robust social support. Crucially, decreased political trust may in turn lead people to reject government guidance relating to COVID-19 and, conversely, to rely on maladaptive strategies, such as compulsive buying.

The results suggested that Muslims exhibit greater fear of COVID-19 than Christians and non-religious people and higher levels of compulsive buying behaviours, including the purchasing of more packs of antibacterial wipes and bottles of hand sanitiser than Christians and non-religious people. This may be attributed to lower levels of political trust among Muslims (Maxwell, 2010), which in turn is associated with decreased compliance with institutional guidance. Moreover, while some fear may promote positive action, high levels of fear about COVID-19 may be counterproductive, leading some individuals to disengage and to adopt risk behaviours (Witte & Allen, 2000). Although non-religious people experience the lowest levels of fear of COVID-19, they are more socially isolated than religious groups, highlighting the possibility that this lack of social network (potentially provided by a religious group membership) may culminate in poor mental health outcomes as the pandemic progresses.

Religion can buffer the effects of adverse events (including pandemics) on mental health by providing hope, optimism and self-efficacy (Stone et al., 2004) and promote post-traumatic growth in the face of adversity, such as COVID-19 (Baldacchino & Draper, 2001). Furthermore, as a significant group membership, involvement in religious community can provide social support from others who share their group memberships and create and enact collective strategies for coping with adversity (Jaspal & Nerlich, 2020). For instance, prayer can be either an individual or collective action with potentially benefit psychological outcomes in the face of adversity – it has been found to predict post-traumatic growth in Christians (Harris et al., 2010). This finding suggests that, in view of the ban on mass gatherings including those in religious settings, individuals of religious faith must be able to engage with fellow religious ingroup members through non-physical contact. For instance, they may continue to congregate and provide social support in online forums. Collective prayer may be conducted using virtual contact. Furthermore, non-religious individuals must be encouraged to make use of their social group memberships (e.g. Sani et al, 2012). The social distancing policy is vital but should not preclude social engagement in non-physical settings.

Non-religious people utilise a broader range of sources of information regarding COVID-19 than Christians and Muslims. Social media appear to constitute the preferred source of information for non-religious people, which provides access to a wider range of perceptions, perspectives and attitudes concerning COVID-19 and how it should be tackled. Yet, there is also a risk of exposure to erroneous information concerning the virus, the pandemic and appropriate action to be taken to reduce one's risk. Indeed, it has been noted that conspiracy theories and inaccurate information circulate, and can gain traction, on social media platforms (Sharma et al., 2017). The study shows that the use of social media as the primary source of information regarding COVID-19 is associated with less political trust and more compulsive buying. This may be attributed to the proliferation of conspiracy theories, criticism of the political response to the pandemic, and media reporting of widespread compulsive buying behaviours in the UK (Jolley & Lamberty, 2020). Indeed, the depiction of empty supermarket shelves up and down the country may understandably instil

greater fear in the general population, prompting them to replicate the very buying behaviours that cause this fear. In short, this may have a 'contagion effect' (Towers et al., 2015). Although mental health outcomes are not reported in this study, fear reflects negative affect and, when excessive and unabated, may culminate in poor mental health outcomes. It is therefore an important focus for researchers interested in the mental health burden associated with COVID-19 (Lopes & Jaspal, 2020).

It is vital that sources of information regarding COVID-19 frame public health messages in ways that resonate among individuals from distinct religious communities in order to ensure that the broadest range of people in the UK use them to acquire information about the pandemic and effective ways to tackling it. Furthermore, public health messaging should avoid alarmism but instead elucidate clear pathways of action so that individuals feel empowered to tackle the pandemic effectively. This may reduce the risk of engagement in compulsive buying behaviours, which appear to be more prevalent in some groups than in others. While compulsive buying behaviours may provide transient relief from the psychological distress associated with COVID-19 (Sneath, Lacey & Kennett-Hensel, 2009), they are unlikely to be an effective long-term coping strategy– compulsive buying may challenge both individual psychological wellbeing and public health outcomes (Kellet & Bolton, 2009). Religious minorities, such as Muslims, are already at increased risk of poor mental health due to stressors, such as discrimination, which may be further accentuated amid the COVID-19 outbreak, potentially leading to maladaptive coping patterns (Rippy & Newman, 2006). Culturally competent approaches to psychological support, such as cognitive behavioural therapy with components of mindfulness, could help manage fear levels among individuals of religious faith (Lopes & Jaspal, 2020).

Limitations

This study provides important preliminary insights into the impact of religious group membership on key psychological variables in relation to COVID-19. First, this cross-sectional study focuses mainly on group differences and does not examine causality. It would be beneficial to conduct further longitudinal research into the psychological impact of the social distancing policy as it continues as well as the antecedents of compulsive buying behaviours. Experimental methods would also be advantageous. Second, as this study included a representative sample, there were relatively few members of other religious groups in the UK. Future research ought to focus on other religious groups in the UK, including Hindus, Sikhs and Jewish minorities. Third, future research should include measures of key mental health variables, such as depression, psychological distress and suicidal ideation, in order to ascertain the long-term impact of social isolation and of COVID-19 more generally.

References

Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The Fear of COVID-19 Scale: Development and initial validation. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-020-00270-8

Baldacchino, D. & Draper, P. (2001). Spiritual coping strategies: a review of the nursing research literature. *Journal of Advanced Nursing*, *34*, 833-841

Black, D. W. (2007). A review of compulsive buying disorder. *World Psychiatry*, *6*, 14-18.

Cacioppo, J.T. & Hawkley, L.C. (2003). Social isolation and health, with an emphasis on underlying mechanisms. *Perspectives in Biology and Medicine*, *46*, S39–S52.

Carrick, A. (2020). Coronavirus: When are supermarket opening times for NHS and pensioners? *City AM.* 30 March 2020. https://www.cityam.com/coronavirus-when-are-supermarket-opening-times-for-nhs-and-pensioners/ Accessed 11 June 2020.

Courtin, E. & Knapp, M. (2017). Social isolation, loneliness and health in old age: a scoping review. *Health and Social Care in the Community*, *25*, 799-812.

Edwards, E.A. (1993). Development of a new scale for measuring compulsive buying behaviour. *Financial Counseling and Planning*, *4*, 67-85

Ellison, C.G. (1994). Religion, the life stress paradigm, and the study of depression. In J.S. Levin (Ed.), *Religion in Aging and Health: Theoretical Foundations and Methodological Frontiers* (pp. 79-121). Thousand Oaks, CA: Sage.

Glass, R., Glass, L., Beyeler, W. & Min, H. (2006). Targeted social distancing design for pandemic influenza. *Emerging Infectious Disease*, *12*, 1671–1681.

Hall, R. (2020). Coronavirus: Why people are panic buying toilet paper, according to a pandemic expert. *The Independent,* 15 March 2020. https://www.independent.co.uk/news/world/americas/coronavirus-toilet-paper-panic-buying-covid-19-uk-australia-a9403351.html Accessed 11 June 2020.

Harris, J.I., Erbes, C.R., Engdahl, B.E., Tedeschi, R.G., Olson, R.H., Winskowaki, A.M.M. & McMahill, J. (2010). Coping functions of prayer and posttraumatic growth. *The International Journal for the Psychology of Religion*, *20*(1), 26-38.

Jaspal, R. (2014). *Antisemitism and Anti-Zionism: Representation, Cognition and Everyday Talk*. Farnham: Ashgate.

Jaspal, R. & Cinnirella, M. (2010). Media representations of British Muslims and hybridised threats to identity. *Contemporary Islam: Dynamics of Muslim Life*, *4*(3), 289-310.

Jaspal, R. & Nerlich, B. (2020). Social representations, identity threat and coping amid COVID-19. *Psychological Trauma: Theory, Research and Policy*. http://dx.doi.org/10.1037/tra0000773

Jolley, D. & Lamberty, P. (2020). Coronavirus is a breeding ground for conspiracy theories – here's why that's a serious problem. *The Conversation*, 28 February 2020. https://theconversation.com/coronavirus-is-a-breeding-ground-for-conspiracy-theories-heres-why-thats-a-serious-problem-132489 Accessed 11 June 2020.
Kellett, S. & Bolton, J.V. (2009), Compulsive buying: A cognitive–behavioural model. *Clinical Psychology & Psychotherapy*, *16*, 83-99.

Lara, A., Crego, A. & Romero-Maroto, M. (2012), Emotional contagion of dental fear to children: the fathers' mediating role in parental transfer of fear. *International Journal of Paediatric Dentistry*, *22*, 324-330.

Lopes, B. & Jaspal, R. (2020). Understanding the mental health burden of COVID-19 in the United Kingdom. *Psychological Trauma: Theory, Research and Policy*. http://dx.doi.org/10.1037/tra0000632

Lubben, J., Blozik, E., Gillmann, G., Iliffe, S., von Renteln Kruse, W., Beck, J. C., & Stuck, A. E. (2006). Performance of an abbreviated version of the Lubben Social Network Scale among three European community-dwelling older adult populations. *The Gerontologist*, *46*(4), 503–513.

Maxwell, R. (2010). Trust in government among British Muslims: The importance of migration status. *Political Behavior*, *32*, 89–109

Meyer, I.H. (2003). Prejudice, social stress, and mental health in lesbian, gay and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*, 674-697.

Mutz, D. C., & Reeves, B. (2005). The new videomalaise: effects of televised incivility on political trust. *American Political Science Review, 99*(1), 1-15.

O'Neill, S., & Nicholson-Cole, S. (2009). "Fear Won't Do It": Promoting positive engagement with climate change through visual and iconic representations. *Science Communication*, *30*(3), 355–379.

Pargament, K.I. (1997). *The Psychology of Religion and Coping: Theory, Research, and Practice*. New York: Guilford.

Pargament, K.I., McCarthy, S., Shah, P., Ano, G., Tarakeshwar, N. & Wachholtz, A. (2004). Religion and HIV: a review of the literature and clinical implications. *Southern Medical Journal*, *97*(12), 1201-9.

Rippy, A. E., & Newman, E. (2006). Perceived religious discrimination and its relationship to anxiety and paranoia among Muslim Americans. *Journal of Muslim Mental Health*, *1*(1), 5–20.

Sani, F., Herrera, M., Wakefield, J.R.H., Boroch, O. & Gulyas, C. (2012). Comparing social contact and group identification as predictors of mental health. *British Journal of Social Psychology*, *51*, 781-790.

Santini, Z. I., Jose, P. E., York Cornwell, E., Koyanagi, A., Nielsen, L., … Koushede, V. (2020). Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *The Lancet. Public Health*, *5*(1), e62–e70.

Shultz, J.M., Althouse, B.M., Baingana, F., Cooper, J.L., Espinola, M., Greene, M.C., … Rechkemmer, A. (2016) Fear factor: the unseen perils of the Ebola outbreak. *Bulletin of the Atomic Scientists*, *72*, 5, 304-310.

Sharma, M., Yadav, K., Yadav, N., & Ferdinand, K. C. (2017). Zika virus pandemic – analysis of Facebook as a social media health information platform. *American Journal of Infection Control*, *45*(3), 301–302.

Sneath, J.Z., Lacey, R. & Kennett-Hensel, P.A. (2009). Coping with a natural disaster: Losses, emotions, and impulsive and compulsive buying. *Marketing Letters*, *20*, 45–60.

Stone, H. W., Cross, D. R., Purvis, K. B., & Young, M. J. (2003). A study of the benefit of social and religious support on church members during times of crisis. Pastoral Psychology, 51(4), 327–340.

Towers, S., Afzal, S., Bernal, G., Bliss, N., Brown, S., Espinoza, B., … Castillo-Chavez, C. (2015). Mass Media and the Contagion of Fear: The Case of Ebola in America. PloS *One*, *10*(6), e0129179. https://doi.org/10.1371/journal.pone.0129179

UK Government (2020). Guidance: Staying at home and away from others (social distancing). https://www.gov.uk/government/publications/full-guidance-on-staying-at-home-and-away-from-others/full-guidance-on-staying-at-home-and-away-from-others Accessed 20 May 2020.

Wang, J., Lloyd-Evans, B., Giacco, D., Forsyth, R., Nebo, C., Mann, F., & Johnson, S. (2017). Social isolation in mental health: a conceptual and methodological review. *Social Psychiatry and Psychiatric Epidemiology*, *52*(12), 1451–1461.

Weinstein, A., Maraz, A., Griffiths, M. D., Lejoyeux, M., & Demetrovics, Z. (2016). Compulsive buying—features and characteristics of addiction. In V. Preedy (Ed.) *Neuropathology of Drug Addictions and Substance Misuse* (pp. 993-1007). London: Elsevier.

Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education & Behavior*, *27*(5), 591–615.

Ysseldyk, R., Matheson, K., & Anisman, H. (2010). Religiosity as identity: Toward an understanding of religion from a social identity perspective. *Personality and Social Psychology Review*, *14*(1), 60–71.

Table 1. Socio-demographic characteristics of the participant sample

Ethnicity	White British	White Other	Any other Asian	African	Any other Mixed/Multiple background	White and Black Caribbean	Any other ethnic background	Pakistani	White and Asian	Caribbean
	N=301	N=31	N=30	N=10	N=10	N=7	N=7	N=6	N=4	N=3
	73.2%	7.5%	7.3%	2.4%	2.4%	1.7%	1,7%	1.5	1%	.7%
Religion	Non-religious	Christians	Muslims	Other	Hindu	Sikh	Jewish	Buddhist		
	N=240	N=133	N=18	N=9	N=5	N=3	N=2	N=1		
	58.5%	32.4%	4.4%	2.2%	1.2%	.7%	.5%	.2%		
Relationship status	Single	Married	Monogamous relationship	Other type	Engaged	Civil partnership	Open			
	N=127	N=164	N=71	N=22	N=15	N=11	N=1			
	30.9%	39.9%	17.3%	5.4%	3.6%	2.7%	.2%			
Income	Less than £10,000	£10,000 to£14,999	£15,000 to £19,999	£20,000 to £24,999	£25,000 to £29,999	£30,000 to £34,999	£40,000 to £50,000	More than £50,000		
	N=86	N=53	N=56	N=52	N=43	N=31	N=29	N=36		
	20.9%	12.9%	13.6%	12.7%	10.5%	7.5%	7.1%	8.8%		
Education	Undergraduate Degree (e.g. BSc.)	A Levels	GCSE/O Level	Postgraduate Degree (e.g.M.A.)	PhD	Primary School				
	N=167	N=97	N=74	N=53	N=15	N=5				
	40.6%	23.6%	18%	12.9%	3.6%	1.2%				

Table 2. Descriptive statistics for the key variables of this study

	Mean	SD	Minimum	Maximum
Age	48.85	15.38	18	76
Social network	21.89	6.61	6	36
Length of self-isolation	1.81	.98	1	6
Length of working from home	1.83	1.21	1	6
Political trust	36.33	8.89	15	60
Compulsive buying	38.94	14.91	22	104
Frequency of going to supermarket	1.68	.92	1	5
Number of packs of toilet paper purchased during each supermarket trip	1.93	.89	1	7
Number of antibacterial wipes purchased during each supermarket trip	1.47	.78	1	7
Number of bottles of hand sanitiser purchased during each supermarket trip	1.32	.67	1	7
Frequency of watching/reading news about COVID-19 in a day	2.77	.84	1	4
Frequency of thinking about COVID-19 in a day	3.24	.84	1	4
Frequency of talking about COVID-19 in a day	2.94	.88	1	4

Table 3. Means and standard deviations between religious groups for the key variables and effect sizes and 95% CIs for differences

	Non-religious N=240		Christians N=133		Muslims N=18			
Social network	*M*	*SD*	*M*	*SD*			0.3	-2.78660, -.10262
	21.27	6.79	22.72	6.17				
Political trust	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.4	-5.63266, -1.91438
	35.26	9.19	38.95	8.27	34.28	8.04	0.6	.73730, 8.66839
Fear of COVID-19	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.4	-4.31736, -1.07498
	24.56	6.77	27.27	8.16	29.72	9.23	0.6	-9.35626,-.95996
Compulsive buying	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.6	-16.63319, -1.23377
	37.85	15.40	39.67	12.97	46.73	15.73	0.5	-14.84489, .58772
Number of antibacterial wipes	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.3	-.26903, -.03201
	1.42	.50	1.57	.60	2.02	.85	0.9	-1.00815, -.19888
							0.6	-.87633, -.02278
Number of bottles of hand sanitiser	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.3	-.22838, -.03127
	1.28	.38	1.41	.49	1.82	.77	0.9	-.89716, -.16523
							0.6	-.79227, -.04336
Length of self-isolation	*M*	*SD*	*M*	*SD*	*M*	*SD*	0.6	-.92135, -.02856
	1.80	.83	1.85	.72	2.28	.90	0.5	-.87766, .00029

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[1] https://coronavirus.data.gov.uk/ Accessed 30 March 2020.

[2] It is acknowledged that there are diverse understandings of 'no religion' – while some people understand this as non-involvement in a religious community, others may equate this with atheism, and some may differentiate between religion and spirituality. In both the UK Census data and the present study, 'no religion' indicates a general lack of identification with any religious group.