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# Depressive and anxious symptomatology in a Lebanese sample during the COVID-19 outbreak

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## ABSTRACT

This study explores the correlates of depressive and anxious symptomatology in a Lebanese sample during the COVID-19 outbreak. A convenience sample of 191 respondents participated in a cross-sectional survey and completed measures of fear of COVID-19, rumination about COVID-19, job insecurity, political trust, depression, and generalized anxiety. Results indicated that political trust was associated with greater wellbeing (manifested as decreased job insecurity, fear of COVID-19, depression, and anxiety). Respondents who reported no compliance with self-isolation measures reported less rumination about COVID-19 and less fear of COVID-19 than those who did. Multiple regression analyses showed that fear of, and rumination about, COVID-19 predicted depressive and anxious symptomatology while political trust was protective against depressive symptomatology only. This study provides a novel perspective on mental health in Lebanon, by focusing on its social and psychological predictors during the COVID-19 pandemic. Due to political and economic instability in Lebanon, the COVID-19 crisis may have deleterious effects on mental health in the Lebanese population. Internet-based cognitive behavioral therapy is an evidence-based and cost-effective approach to enhancing mental health during the pandemic and may be beneficial in the Lebanese context.

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COVID-19; depression; anxiety; political trust; self-isolation; Lebanon

## Introduction

The novel coronavirus-2019 (COVID-19) pandemic now affects most major towns and cities in the world. In addition to rising mortality, the pandemic and policies to control it (such as lockdown) appear to be having an impact on global mental health (Lopes and Jaspal 2020). A recent systematic review reported relatively high rates of anxiety (6.33% to 50.9%), depression (14.6% to 48.3%), post-traumatic stress disorder (7% to 53.8%), psychological distress (34.43% to 38%), and stress (8.1% to 81.9%) during the pandemic (Xiong et al. 2020). Lebanon registered its first COVID-19 case on 21 February 2020, which was followed by a nationwide lockdown on 15 March that year (Jaspal, Assi, and Maatouk 2020). In Lebanon, as in other countries, there are documented stress-related disorders associated with COVID-19 (Khoury, El-Khoury, and Ammar 2020), specifically in relation to significant negative events (namely the outbreak of COVID-19) (Wang et

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al. 2021). During a pandemic, populations are exposed to multiple stressors that can increase the risk of depression and anxiety (Satici et al. 2020). These include fear of infection or mortality, job insecurity due to the economic implications of lockdown measures, decreased political trust due to perceived political inefficacy in response to the pandemic, and constant rumination about the pandemic (Baldwin and Mauro 2020; Bodrud-Doza et al. 2020; Kulkarni, Hathur, and Vishwanath 2020). In this study, we examine the impact of these variables on depressive and anxious symptomatology in a Lebanese sample during the COVID-19 outbreak.

Rumination about COVID-19 refers to exposure to information about COVID-19, thinking about it, and talking about it frequently. During a pandemic, it is likely that there will be frequent news coverage of its progression and that, on the whole, the general public will be thinking and talking about it frequently (Jaspal, Lopes, and Lopes 2020). Although it is important to remain informed about the disease and prevention strategies, COVID-19 rumination has been found to be associated with poor mental health outcomes (Bravo et al. 2020). The media is a major source of information about COVID-19 and constant exposure to it and rumination about the pandemic can increase one's fear of infection (Garfin, Silver, and Holman 2020). Indeed, fear of infection with COVID-19 is a major psychological stressor in this crisis, which is also associated with adverse mental health outcomes, including depression and anxiety (Pakpour and Griffiths 2020).

Disease prevention policies have been found to impact mental health. The social distancing policy has led to threats to both economic and psychological wellbeing (Tran et al. 2020). Furthermore, face coverings have not been adopted to the same extent in countries where this is not customary, which in turn has been associated with poor physical and mental health outcomes during the pandemic (Wang et al. 2020a). In our study, we focus on one prevention behaviour, namely self-isolation, which is a globally adopted strategy to reduce the incidence of COVID-19. Although effective from the perspective of disease prevention, it can have deleterious implications for mental health outcomes in the long term (Mihashi et al. 2009). This has also been found in relation to the lockdown in Asian countries, such as Vietnam (Wang et al. 2021). However, some people have not been self-isolating consistently despite the risk of infection. Positive predictors of self-isolation during the pandemic have included fear of COVID-19 and concern about personal safety (Bacon and Corr 2020) and compensation of lost income due to self-isolation (Bodas and Peleg 2020). Those who do not self-isolate are at increased risk of infection but they may be pursuing a strategy to disassociate themselves from the pandemic and to shield themselves psychologically from it (Edlund 2020). This may mean that they are less conscious and, thus, less fearful of COVID-19.

During the pandemic, an additional cause of depressive and anxious symptomatology is the job insecurity which tends to accompany the pandemic and preventive activity, such as self-isolation (Godinic, Obrenovic, and Khudaykulov 2020). It is acknowledged that many countries have implemented policies that have reduced the impact of job insecurity on psychological health, such as the furlough scheme in the United Kingdom (Cook, Giovanis and Gobey, 2020). However, Lebanon has had no such scheme and, perhaps as a consequence, fear of losing one's job was a reported source of stress and anxiety for certain patients being treated for COVID-19 (Khoury, El-Khoury, and Ammar 2020). The negative effects of job insecurity on mental health have been documented in other major disease outbreaks, such as equine influenza and severe acute respiratory syndrome (SARS) (Taylor

*et al.*, 2008; Yu *et al.* 2005). A recent study has also shown that among 797 currently employed US residents, job insecurity due to COVID-19 and financial concerns were associated with greater depression and anxiety (Wilson *et al.* 2020). Similar results have been found in Vietnam where concerns about economic wellbeing were associated with decreased psychological wellbeing (Tran *et al.* 2020).

In addition to these individual-level variables, collective variables, such as political trust, may be important. In this study, we conceptualise political trust as citizens' level of confidence in both politicians and political institutions in Lebanon. Political trust can provide populations with a sense of security in times of hardship and adversity, including during disease outbreaks (Hier 2003). During the COVID-19 pandemic, populations are reliant on the government to develop effective guidance, support and prevention. Moreover, the government response to the pandemic is more likely to be successful if people have trust in and, thus, comply with their guidance (Bodas and Peleg 2020). During the 2003 SARS outbreak, trust in the government and trust in medical institutions were both reportedly protective against anxiety (Cheung and Tse 2008). Indeed, individuals rely on collective efforts and support from stable entities, such as governments and institutions, during a pandemic.

Various social and economic variables can affect mental health during the pandemic – an effect which may be accentuated in societies with political and economic instability, such as that of Lebanon (Jaspal, Assi, and Maatouk 2020). Lebanon is an ethnically and religiously diverse country which has experienced an accumulation of collective psychological trauma for decades (Assi, Maatouk, and Jaspal 2020). The Lebanese Civil War (1975–1990) and subsequent conflicts with neighbouring Israel continue to have lasting psychological effects on the Lebanese population (Farhood *et al.* 2016; Macksoud and Aber 1996). In parallel, Lebanon has experienced constant economic instabilities and job insecurities, as well as an alarming linear growth of the national debt for the past fifteen years that have now culminated in the collapse of the banking system and a devaluation of the local currency (Youssef 2020). During COVID-19, it is possible that the Lebanese population is exposed to additional economic and financial burdens, as well as increased job insecurity leading to compounded negative effects on mental wellbeing.

In addition, Lebanese society has been politically fragmented since the Civil War which has resulted in high levels of mistrust in the political system and its institutions (Alijla 2016). In the context of COVID-19, this may translate into decreased access to the protective effects of community and government support against depression and anxiety. The nationwide lockdown that followed the COVID-19 outbreak in February applied an additional layer of stress to an already burdened population. Self-isolation amid COVID-19 has reportedly been associated with negative mental health outcomes (Fawaz and Samaha 2020) and decreased use of mental health services (Khoury and Karam 2020). Moreover, this health crisis is coinciding with political unrest and protestors voicing their lack of trust in the current political administration. Decreased political and institutional trust in Lebanon may undermine psychological wellbeing, particularly during COVID-19 (Jaspal, Lopes, and Lopes 2020).

**Table 1.** Socio-demographic characteristics of the participant sample.

Gender	Males N = 120 62.8%	Females N = 71 37.2%				
Governorate	Beirut N = 59 30.9%	Mount Lebanon N = 90 47.1%	North N = 9 4.7%	South N = 8 4.2%	Bekaa N = 7 3.7%	Keserwan N = 18 9.4%
Nationality	Lebanese N = 188 98.4%	Syrian N = 3 1.6%				
Religion	Christians N = 119 62.3%	Moslems N = 56 29.3%	No Religion N = 16 8.4%			
Qualification	University N = 178 93.2%	Non-university N = 13 6.8%				
Diagnosed mental health disorder	Yes N = 34 17.8%	No N = 157 82.2%				
Self-isolation	Yes N = 158 82.7%	No N = 33 17.3%				

## Hypotheses

The objective of this study was to explore the predictors of depressive and anxious symptomatology in a Lebanese sample during the COVID-19 outbreak. On the basis of recent research into the mental health implications of COVID-19, the following hypotheses are tested in this study:

- (1) Those who report no self-isolation will exhibit less fear of and rumination about COVID-19 than those who do self-isolate.
- (2) Political trust will be associated with greater wellbeing (manifested as decreased job insecurity, fear of COVID-19, depression and anxiety).
- (3) Fear of COVID-19 and COVID-19 rumination will predict depressive and anxious symptomatology, while political trust will be a protective factor.

## Methods

### Participants

A convenience sample of 191 respondents recruited on WhatsApp from 11 May-10 June 2020 participated in a survey assessing the impact of COVID-19 on psychological well-being. Participants were aged between 17 and 66 ( $M = 29.87$ ,  $SD = 8.06$ ). Table 1 provides a full description of the participant sample.

## Measures

### Demographic questions

Participants indicated their age; gender; governorate; citizenship; religion; current monthly income; educational qualification; employment status; and diagnosis with a mental health disorder.

### ***Self-isolation***

Participants indicated whether or not they had been self-isolating (yes vs. no).

### ***Fear of COVID-19***

The 10-item Fear of COVID-19 Scale (Ahorsu et al. 2020) was used to measure fear of COVID-19 on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Example item: 'I am most afraid of COVID-19'. A higher score indicated higher fear of COVID-19 ( $\alpha = 0.81$ ).

### ***Rumination about COVID-19***

A 3-item scale was developed to measure COVID-19 rumination consisting of these items: 'How often do you watch/ read news about coronavirus in a day?', 'How often do you think about coronavirus in a day?', and 'How often do you talk about coronavirus in a day?'. Items were measured on a 4-point scale (1 = not at all, 4 = more than 5 times). A higher score indicated more frequent rumination about COVID-19 ( $\alpha = 0.77$ ).

### ***Job insecurity***

The 4-item Job Insecurity Scale Questionnaire (Vander Elst, De Witte, and De Cuyper 2014) was used to measure job insecurity on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Example item: 'I feel insecure about the future of my job'. A higher score indicated higher job insecurity ( $\alpha = 0.86$ ).

### ***Political trust***

An adapted (12-item) version of the Political Trust Questionnaire (Mutz and Reeves 2005) was used to measure political trust on a 5-point scale (0 = strongly disagree, 4 = strongly agree). Example item: 'Politicians generally have good intentions'. A higher score indicated higher political trust ( $\alpha = 0.85$ ).

### ***Depression***

The 10-item Centre for Epidemiological Studies Depression Scale Revised Questionnaire (CESD-R-10) (Björgvinsson et al. 2013) was used to measure depression during the past week on a 4-point scale (0 = rarely or none of the time, 3 = all of the time). Example item: 'I felt depressed'. A higher score indicated higher depression ( $\alpha = 0.82$ ).

### ***Generalized anxiety***

The 7-item Generalized Anxiety Disorder Assessment (GAD-7) (Spitzer et al. 2006) was used to measure anxiety during the past 2 weeks on a 4-point scale (0 = not at all, 3 = nearly every day). Example item: 'Becoming easily annoyed or irritable?'. A higher score indicated higher generalized anxiety ( $\alpha = 0.94$ ).

## Results

### *Exclusion of participants with diagnosed mental health disorders*

The sample included 34 participants (17.8%) with diagnosed mental health disorders. Independent samples *t*-tests showed statistically significant differences for depression [ $t(189) = 5.93, p < 0.001$ ; Cohen's  $d = 1.09$ ; 95% CIs (4.35289, 8.69245)] and anxiety [ $t(189) = 4.755, p < 0.001$ ; Cohen's  $d = 0.89$ ; 95% CIs (2.93261, 7.09137)] between respondents who had a diagnosed mental health disorder and those who did not. Generally, those who had a diagnosed mental health disorder showed higher levels of depression ( $M = 18.7, SD = 6.15$  vs.  $M = 12.2, SD = 5.74$ ) and anxiety ( $M = 13.5, SD = 5.56$  vs.  $M = 8.45, SD = 5.57$ ) than those who did not. As previous research has revealed much higher levels of anxiety and depression in patients with a diagnosed mental health condition (Hao et al. 2020), participants with a diagnosed mental health disorder were excluded from further analysis, resulting in a sample of 157 people.

### *Descriptive statistics*

Table 2 provides a full summary of the descriptive statistics concerning the key variables of interest. Of the 157 participants with no prior diagnosis with a mental health disorder, 94 (59.9%) scored  $\geq 11$  on the CESD-R-10 which is the cut-off point for having, or being at risk of, mild to significant depression. Furthermore, on the GAD-7, 61 (42.7%) participants scored 5–9 indicating mild anxiety, 37 (23.6%) scored 10–14 indicating moderate anxiety and 19 (12.1%) scored 15–21 indicating severe anxiety.

### *Between group differences for political trust and job insecurity*

Independent samples *t*-tests showed a statistically significant difference between males and females for political trust [ $t(155) = -3.113, p < 0.005$ ], and job insecurity [ $t(138.4) = 3.434, p = 0.001$ ]. Generally, females showed higher levels of political trust but lower levels of job insecurity when compared to males.

Further independent sample *t*-tests showed a statistically significant difference for job insecurity between high and low income groups [ $t(155) = 3.425, p = 0.001$ ]. Generally, the lower income group showed higher levels of job insecurity than the higher income group. There was no statistically significant effect of income on political trust ( $p > 0.05$ ).

Further independent samples *t*-tests showed a statistically significant difference between university and non-university qualified respondents for political trust [ $t$

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

	Mean	SD	Minimum	Maximum
Age	29.87	8.06	17	66
Religiosity	13.11	3.78	5	20
Depression	12.24	5.74	2	30
Generalized anxiety	8.45	5.57	0	21
Fear of COVID-19	22.28	5.25	10	36
Rumination about COVID-19	7.12	2.36	3	12
Job insecurity	14.19	3.69	4	20
Political trust	8.87	7.06	0	26

(155) = 2.603,  $p < 0.05$ ] but not for job insecurity ( $p > 0.05$ ). Non-university qualified respondents showed higher levels of political trust than university qualified respondents.

There were no statistically significant effects of political trust on self-isolation following the government's recommendations ( $p > 0.05$ ).

There were no statistically significant effects of religious group on political trust or job insecurity ( $p > 0.05$ ).

### **Between group differences for rumination about COVID-19**

An independent samples  $t$ -test showed a statistically significant difference in rumination about COVID-19 between those who self-isolated and those who did not [ $t(42.196) = 2.907$ ,  $p < 0.01$ ]. Generally, those who self-isolated showed higher levels of rumination about COVID-19 than those who did not.

### **Impact of high and low political trust on key variables**

A median split was performed on the variable of political trust to examine differences between those with high political trust vs low political trust. Independent sample  $t$ -tests showed a statistically significant difference between respondents with high and low political trust for fear of COVID-19 [ $t(114.9) = 2.097$ ,  $p < 0.05$ ], job insecurity [ $t(133) = 1.936$ ,  $p = 0.05$ ], depression [ $t(133) = 3.094$ ,  $p < 0.005$ ], and anxiety [ $t(124.8) = 2.375$ ,  $p < 0.05$ ]. Generally, those with high political trust showed lower fear of COVID-19, lower job insecurity, lower depression, and lower anxiety when compared to those with low political trust.

Table 3 provides the means, standard deviations, Cohen's  $D$  and confidence intervals for all of the independent samples  $t$ -tests.

### **Correlations**

Generally, the results indicated positive correlations between depression and fear of COVID-19, rumination about COVID-19, and job insecurity. In contrast, depression was negatively correlated with political trust. Furthermore, anxiety was positively correlated with fear of COVID-19, rumination about COVID-19, and job insecurity. Anxiety was negatively correlated with political trust. On the other hand, job insecurity was

**Table 3.** Correlations between the key variables.

	1	2	3	4	5	6	7	8
1.Age		.07	-.18*	.07	-.07	.06	-.04	-.02
2.Religiosity	.07		-.08	.19*	.13	.03	-.04	.06
3.Job insecurity	-.18*	-.08		-.21**	.14	-.08	.19*	.17*
4.Political trust	.07	.19*	-.21**		-.15	-.07	-.21**	-.17*
5.Fear of COVID-19	-.07	.13	.14	-.15		.07	.39**	.59**
6.Rumination about COVID-19	.06	.03	-.08	-.07	.07		.17*	.17*
7.Depression	-.04	-.04	.19*	-.21**	.39**	.17*		.75**
8.Generalized anxiety	-.02	.06	.17*	-.17*	.59**	.17*	.76**	

\* $p < .050$ ; \*\* $p < .005$



negatively correlated with political trust. Table 4 provides a full overview of the correlations.

## Multiple regression models

### Depression

First, a multiple stepwise regression was conducted to examine which variables predicted the variance of depression. The continuous variables of fear of COVID-19; rumination about COVID-19; job insecurity; and political trust were inserted as predictors, and depression was inserted as the dependent variable.

Fear of COVID-19 was entered into Step 1 and explained 15.2% of the variance in depression. At Step 2, fear of COVID-19 and political trust explained 17.1% of the variance in depression. R-square change was 0.024 and F-change was 4.422 ( $p = 0.037$ ). The regression model was statistically significant for depression [ $F(1, 154) = 4.422, p < 0.05; R^2 = 0.171$ ]. Of all predictors, fear of COVID-19 with a  $\beta = 0.397$  S.E. = 0.081, 95% CIs (0.249, 0.568) ( $t = 5.064, p < 0.001$ ) was the most powerful, followed by political trust with a  $\beta = -0.155$ , S.E. = 0.06, 95% CIs (-0.244, -0.008) ( $t = -2.103, p < 0.05$ ) and had significant effects on the variance of depression. The variables of rumination about COVID-19 and job insecurity were excluded from the model in the 2 steps.

### Anxiety

Second, a multiple stepwise regression was conducted to examine which variables predicted the variance of anxiety. The continuous variables of fear of COVID-19; rumination about COVID-19; job insecurity; and political trust were inserted as predictors, and anxiety was inserted as the dependent variable.

Fear of COVID-19 was entered into Step 1 and explained 34.6% of the variance in anxiety. At Step 2, fear of COVID-19 and rumination about COVID-19 explained 36.7% of the variance in anxiety. R-square change was 0.017 and F-change was 4.11 ( $p = 0.044$ ). The regression model was statistically significant for anxiety [ $F(1, 154) = 4.11, p < 0.05; R^2 = 0.359$ ]. Of all predictors, fear of COVID-19 with a  $\beta = 0.583$  S.E. = 0.068, 95% CIs (0.484, 0.753) ( $t = 9.072, p < 0.001$ ) was the most powerful, followed by rumination about COVID-19 with a  $\beta = 0.13$ , S.E. = 0.151, 95% CIs (0.008, 0.605) ( $t = -2.027, p < 0.05$ ) and had significant effects on the variance of anxiety. The variables of job insecurity and political trust were excluded from the model in the 2 steps.

## Discussion

This preliminary study provides insight into depressive and anxious symptomatology in a Lebanese sample during the COVID-19 outbreak. Our convenience sample data show that over half of the sample (with no prior diagnosis with a mental health disorder) was exhibiting depressive symptoms and that almost two thirds of the sample were exhibiting mild to severe anxious symptoms. These rates are considerably higher than those observed in eight countries during the pandemic (Xiong et al. 2020), suggesting that there may be factors accentuating the mental health burden associated with COVID-19

which are specific to the Lebanese context. Accordingly, our study examines the social and psychological underpinnings of depression and anxiety, focusing in particular on fear of COVID-19, rumination about the pandemic and political trust. Overall, our findings provide full support for Hypotheses 1 and 2 and partial support for Hypothesis 3. Those who reported no self-isolation exhibited less fear and rumination about COVID-19. Political trust was associated with decreased depressive symptomatology, fear of COVID-19, and job insecurity. Fear of COVID-19 and rumination about COVID-19 predicted depression and anxiety, while political trust appeared to function protectively against depression (but not anxiety).

Poor mental health during COVID-19 is a global concern associated with exposure to news and information about the pandemic which may fuel levels of fear and anxiety in the general population (Gao et al. 2020). As in global findings, our data from Lebanon reveal a relationship between fear of, and rumination about, COVID-19 and depressive and anxious symptomatology. This partially supports Hypothesis 3. During pandemics, reliable media sources can help provide accurate information that enable the general public to make informed decisions regarding health-protective behaviours (Taylor *et al.*, 2008). The unnecessary and repetitive accumulation of stressful information, particularly in the context of invisible threats such as viral infections, can often increase the proliferation of false rumours, sensationalism and, as our study suggests, depressive and anxious symptomatology. In turn, this could culminate in conspiracy beliefs being circulated across populations (Allington et al. 2020), thereby precipitating poor mental health outcomes (Taylor et al. 2020).

In contrast to neighbouring countries, the media sector in Lebanon was privatized after the civil war to reflect the fragmentation of the political scene (Kraidy and Murphy 2003). In view of the drive to generate attractive headlines and trending topics, this can result in repetitive news with the dissemination of sometimes conflicting and confusing information to the general population. Global data have shown that repeated media exposure to traumatic events can have immediate and long-term mental health implications, especially for populations already coping with social and economic fallouts (Garfin, Silver, and Holman 2020). It would be advantageous to disseminate the type of information required by particular communities in Lebanon, which would help assuage the uncertainties that currently surround the pandemic (Le et al. 2020b). Furthermore, as demonstrated in a Chinese study, the rapid dissemination of up-to-date information about the disease and crucially how to prevent infection may lead to improvements in psychological wellbeing during the pandemic (Wang et al. 2020b).

The adverse mental health effects of rumination about COVID-19 in Lebanon could be compounded by the overarching economic crisis that has preceded this health crisis (Jaspal, Assi, and Maatouk 2020). Furthermore, it is also shown that particularly when facing a novel and previously unknown threat, such as COVID-19, the spread of fear is accentuated with potentially negative outcomes for mental health (Hong and Collins 2006). These social stressors are likely to have compounding effects on existent depressive and anxious symptomatology. Previous research from Lebanon has highlighted an underfunding and discontinuation of mental health services during the governmental lockdown (Khoury and Karam 2020), despite a clear need for these services during this period (El Chammay and Roberts 2020).

In previous research, it has been found that political and institutional trust has the potential to mitigate the negative effects of the pandemic on depressive symptomatology through an increased sense of control at an individual level (Cheung and Tse 2008). Our study from Lebanon provides support for this hypothesis. We found that respondents who reported higher levels of political trust also reported lower fear of COVID-19, job insecurity, depression, and anxiety, thereby supporting Hypothesis 2. However, the multiple regression analyses showed that political trust was significantly and negatively correlated with depression but not with anxiety, providing only partial support for Hypothesis 3. It may be the case that having political trust reduces feelings of hopelessness that tend to characterise depression, in particular (Nekanda-Trepka, Bishop, and Blackburn 1983). Contemporaneous uncertainties about the pandemic, job security and one's own health in Lebanon provide some support for this hypothesis, which will need to be investigated further.

Access to political trust and its protective effects on depressive symptomatology might be challenging in economically and politically unstable societies, such as that of Lebanon. Moreover, our data suggest that those with a university education exhibited lower political trust than those with no university education. It is noteworthy that sectarianism is pervasive across Lebanese society, which is generally accentuated during times of hardship, such as the COVID-19 crisis (Alijla 2016). Indeed, different sects have continuously competed since the end of the civil war to promote superiority and gain control over political institutions (Traboulsi 2016). This repetitive quota-based division of power in Lebanon may affect levels of political trust and thus compliance with the recommendations of political institutions. The growing economic instability in Lebanon that culminated in a recent collapse of the local currency is depriving populations of an additional layer of institutional protection and putting at risk their compliance with self-isolation measures.

Self-isolation is an effective protective measure against COVID-19 and is associated with rumination about and fear of COVID-19 (Allington et al. 2020; Harper et al. 2020; Pakpour and Griffiths 2020). In our study, those who did not self-isolate reported lower levels of rumination about COVID-19, supporting Hypothesis 1. Self-isolation has also been associated with depressive symptomatology because it may disrupt usual routine activities, thereby leading to increased loneliness, anxiety, and depression (Kumar and Nayar, 2021; Moesmann Madsen, Dines, and Hieronymus 2020). In a study among 950 civilians in Lebanon, Fawaz and Samaha (2020) detected the onset of post-traumatic stress symptomatology in the second week of quarantine which worsened in the fourth week. Due to these documented adverse effects of self-isolation on depressive symptomatology, portions of the Lebanese population may be disengaging from self-isolation measures and subsequently thinking about COVID-19 less. These behaviours of denial and disengagement have previously been reported among advocates of the climate change countermovement (Jacques and Knox 2016), people who refuse to acknowledge the negative health impact of smoking (Peretti-Watel, Halfen, and Grémy 2007) and, more recently, in relation to COVID-19 (Edlund 2020). Members of the general public who are refusing to self-isolate (potentially to avoid the threatening reality of COVID-19) may be shielding themselves from depressive and anxious symptomatology but are undoubtedly at higher risk of infection.

## Limitations

This preliminary study has several limitations which should be addressed in future work. First, self-report measures of depression and anxiety have limitations and additional approaches, such as clinical interviews and functional neuroimaging, will be necessary for making robust assessments of mental health in Lebanon. Second, the study did not examine the levels of anxiety and depression before the COVID-19 crisis. Baseline levels of poor mental health within longitudinal research would shed light on how COVID-19, in particular, has contributed to the onset of poor mental health. Third, the cross-sectional nature of the design prevents us from establishing causal relationships between COVID-19 and depressive and anxious symptomatology. An experimental study exposing the general public to Lebanon-specific stimuli concerning COVID-19 would enable us to ascertain causation. To complement this preliminary cross-sectional study, future research should use other research designs, including longitudinal, experimental and qualitative methods. Fourth, the data were of course collected during the lockdown using an online convenience sampling approach. The infrastructure for online data collection in Lebanon is limited and thus our sample size is relatively small. When excluding those with a mental health disorder, the sample size was reduced further. Future research with larger, more representative samples would help validate these findings.

## Conclusions

This preliminary study provides insight into depressive and anxious symptomatology in a Lebanese sample during the COVID-19 crisis. Fear of, and rumination about, COVID-19 were associated with increased depression and anxiety, while political trust appeared to be protective against depression in Lebanon. In societies with political and economic instability, such as that of Lebanon, in which political trust is variable across socio-economic lines, there may be an increased mental health burden in response to the COVID-19 outbreak. It is thus essential that steps are taken in the country to ensure that effective mental health services can be provided to the general population. In particular, internet-based cognitive behavioural therapy (CBT) constitutes an evidence-based and cost-effective approach to reducing rumination and psychiatric symptoms during the pandemic in Asian countries (Ho, Chee, and Ho 2020). It would be beneficial to assess the effectiveness of this approach in the Lebanese context with a view to implementation during the pandemic.

## Disclosure statement

The authors have no interests to declare.

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