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## Long-term orientation and demographics predict the willingness to quarantine: A cross-national survey in the first round of COVID-19 lockdown

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### ABSTRACT

To be or not to be quarantined? That is the question posed by COVID-19 pandemic to almost every resident in the world. Approximately three months after the first application of the COVID-19 lockdown to residents in 17 Asian, African, European, American, and Oceanian countries, we carried out a cross-national survey of 26,266 residents via online platforms such as Sojump and Prolific to investigate their willingness to quarantine and its influencing factors. Findings show that 1) The willingness to quarantine is low in countries with high long-term orientation; 2) Females are more willing to be quarantined than males; 3) Gender difference on willingness to quarantine is large among people with older age and low education. Theoretical and managerial implications are discussed. Understanding how culture and demographics affect people's willingness to quarantine not only provides insight into how to respond to the current pandemic, but also helps the world prepare for future crises.

### 1. Introduction

The coronavirus disease 2019 (COVID-19), a highly contagious viral illness caused by SARS-CoV-2, has had a catastrophic effect on the world's demographics, emerging as the most consequential global health crisis since the 1918 influenza pandemic (Casella et al., 2022). The World Health Organization (WHO) reported that as of 17 January 2022, the virus has spread to 223 countries with over 326 million cases and over 5.5 million deaths reported globally (<https://covid19.who.int/>). The pandemic is expected to continue to impose enormous burdens of morbidity and mortality, whilst severely disrupting societies and economies worldwide (Lazarus et al., 2021).

The main mode of transmission of COVID-19 is through respiratory droplets (Casella et al., 2022; Wang & Zhang, 2020). To control and slow down the transmission of COVID-19, the majority of the world's countries have enforced societal-level lockdowns (Lancet, 2020; Peto et al., 2020; Shah et al., 2020). For example, the city of Wuhan in China

was shut down from the rest of the country and the world, and all road, air and water transports were suspended to prevent the spread of the virus (Xinhua, 2020). As COVID-19 cases soared globally, numerous European countries (e.g., Italy and Spain) imposed quarantine and lockdowns (Schnirring, 2020; Shah et al., 2020). However, some countries made their residents cope with tremendous mental and emotional anguish owing to the reluctant federal government stance on the aforementioned restrictions. The vast majority of the public considers the general quarantine (implemented by various governments) as the only effective strategy to prevent and control COVID-19 transmission (e.g., Guillon & Kergall, 2020).

Quarantine refers to the separation and restriction of movement of people who are exposed to a contagious disease to determine if they become sick, and thus helping protect the public by preventing the exposure to people who have or may have a contagious disease (Center for Disease Control and Prevention, 2017). This definition differs from isolation, which separates sick people with a contagious disease from

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those who are not sick. However, these two terms are often used interchangeably, especially, in communication with the public (Brooks et al., 2020). Countries have adopted quarantine measures in varying degrees. For example, China ordered all travelers from overseas entering China to be quarantined at designated sites for 14 days to curb imported cases and outbreaks (Shah et al., 2020). The European Centre for Disease Prevention and Control (2020) also published information on its website on why and how to quarantine. Generally, quarantine is mandatory and is mainly at home (i.e., don't go to work, school or public places), and duration is a minimum 14 days.

SARS-CoV-2 is still mutating and variants, such as the Omicron, would cause enhanced transmissibility or virulence and decrease the effectiveness of therapeutics or vaccination (Casella et al., 2022; Chen et al., 2021). Therefore, governments, public health officials, and advocacy groups must be prepared not only to address hesitation toward quarantine but also to deal with the negative impacts of its long-term implementation. On the one hand, activists are already campaigning in multiple countries against the need for a quarantine (Armus & Hassan, 2020; Chu et al., 2020; Karami & Anderson, 2020), such as "Give me liberty, or give me death". On the other hand, quarantine is often unpleasant for those who experience it. Separation from loved ones, loss of freedom, uncertainty over disease status, and boredom can, on occasion, create dramatic effects (Brooks et al., 2020).

Governments and societies must gauge the residents' levels of willingness to be quarantined and identify its correlations. This study presents findings from a large-scale survey of such willingness in 17 countries. The impact of culture (i.e., long-term orientation) and demographics (i.e., gender, age, and education level) on willingness to be quarantined is examined.

## 2. Methods

### 2.1. Participants

Approximately three months after the first lockdown in 2020, 26,293 residents from 17 countries—6 Asian countries (China, Mongolia, India, Malaysia, and the Philippines); 2 African countries (South Africa, Nigeria); 7 European countries (Sweden, Spain, Italy, the Netherlands, the UK, France, Germany); 2 American countries (the US, Canada) and 1 Oceanian country (Australia)—were recruited from online panel providers: Sojump (<https://www.wjx.cn/>) provided 16,627 residents from China using a Chinese questionnaire and Prolific (<https://www.prolific.co/>) provided 9666 residents from 16 other countries using an English questionnaire. Excluding residents who did not fully report their gender, age or education level,<sup>1</sup> the final total valid sample comprised 26,266 residents. Apart from Mongolian residents who were volunteers, all residents were paid after completing the questionnaire, among which Chinese subjects were paid ¥8 and those from other countries were paid £1.66. This study was approved by the ethics review committee of the Institute of Psychology, Chinese Academy of Sciences.

### 2.2. Measures

This study aims to investigate the effects of culture and demographic factors on the willingness to quarantine. Long-term orientation, gender, age, and education level are used as predictors, while willingness to quarantine served as the outcome measure. Given that other factors may affect the willingness to quarantine, the following variables are controlled for: life satisfaction, self-rated surviving achievement in the fight against COVID-19 and subjective social status at the personal level;

<sup>1</sup> One resident each from Canada, Germany, the Netherlands, Nigeria, South Africa and Sweden; four residents from Spain and seventeen residents from Mongolia did not have a complete report on gender, age or education level. Hence, they were excluded because they could not be included in the analysis.

and GDP per capita, confirmed cases and deaths in COVID-19, government effectiveness, regulatory quality, population density, healthcare accessibility and quality (HAQ) at the national level.

#### 2.2.1. Willingness to quarantine

Individuals' willingness to quarantine is measured by a single item: "Should the status quo in your residence be maintained (without quarantine) or should people in your residence be quarantined? Please indicate your willingness for choice." The residents are asked to provide their answers by dragging a slider along a scale ranging from 0 (without quarantine) to 100 (quarantine).

#### 2.2.2. Demographics

Prior research has revealed that the likelihood of engagement in precautionary activities (e.g., taking quarantine measures) and agreement on restraining public policy measures (e.g., imposing self-quarantine at home) are higher for females than males (Galasso et al., 2020; Ibuka et al., 2010). Given that the COVID-19 pandemic leads to growing awareness of risk (Wise et al., 2020), and females usually demonstrate low risk-taking than males (Rieger et al., 2015; Zhou et al., 2014), we hypothesized that females are more willing to be quarantined than males. Additionally, age and education levels are also found to be associated with people's propensity to risk (Herrmann et al., 2017; Mather et al., 2012), preventive measure taking and engagement in information seeking activities (Bults et al., 2011). Therefore, we collected residents' demographic information about their age, gender, and education level. The latter is categorized as below high school, high school, associate/bachelor's degree, and master's degree or above.

#### 2.2.3. Long-term orientation

Long-term orientation refers to the extent to which a society values its traditions and to what extent individuals are centered on their past and future, which is among the six dimensions of culture proposed by Hofstede (Hofstede, 2011; Kumar et al., 2020). Long-term orientation is the opposite of short-term orientation. Long-term orientation stands for a society that fosters virtues oriented toward future rewards, such as adaptation, perseverance and thrift; by contrast, short-term orientation stands for a society that fosters virtues related to the past and present, particularly respect for tradition and fulfilling social obligations (Hofstede, 2011; Hofstede & Bond, 1988). Generally, more long-term orientated countries tend to look forward to future development and pursue strategic and long-term goals (Hofstede, 2011). Quarantine is definitely not a well-planned behavior, but an interim decree (emergency measure) incompatible with long-term orientated laws and regulations. Its implementation may bring uncertainty and upset plans, thereby conflicting with the intentions of the people who immersed and brought up in the long-term oriented culture. Therefore, we conjectured that residents from more long-term oriented countries are less willing to be quarantined.

Data for long-term orientation scores were collected from the dimension data matrix of national culture proposed by Hofstede (2015), with high scores indicating more long-term orientation. Specifically, long-term orientation scores were measured by four questions scored using five-point scales. Based on specific formulas (c.f., <http://geerthofstede.com/wp-content/uploads/2016/07/Manual-VSM-2013.pdf>), final scores were achieved and normally has a range of approximately 100 points between very short-term oriented and very long-term oriented countries. This variable is commonly used in research on culture (Hofstede, 2011; Kumar et al., 2020). Data for long-term orientation score are missing for Mongolia.

#### 2.2.4. Control variables

**GDP per capita.** We sourced data on GDP per capita from publications by the World Bank (2019). Given that GDP per capita is skewed, log transformation is applied.

**Confirmed COVID-19 cases and deaths.** We collected the

confirmed COVID-19 cases and deaths to measure the severity of COVID-19. The cumulative confirmed cases per 10,000 population and deaths per 10,000 population of COVID-19 for each country were collected just the day before the survey went online from reports on Baidu (a leading search engine in China), which are based on official reports from different countries and authoritative media (e.g., WHO) (Baidu, 2020). Additionally, we sourced data of newly reported confirmed cases and deaths in the last 7 days per 100,000 population of the days before the survey went online, from WHO reports (World Health Organization, 2022).

**Government effectiveness and regulatory quality.** These two variables are controlled because in less effective and low regulatory quality countries, residents' trust in the government may decrease and thus directly influence the willingness to quarantine. The estimate of government effectiveness reflects the perceptions of the quality of public services, of civil service and the degree of its independence from politics, and of regulations. Thus, perceptions of the government ability to formulate and implement sound policies and regulations that permit and promote, with high scores indicating high government effectiveness and regulatory quality, respectively, were sourced from a *Worldwide Governance Indicators Project* (2021).

**Population density.** We controlled for population density because residents in more populated countries may have more social contact and are likely to be infected. Thus, population density may influence the willingness to quarantine. Data for population density are sourced from Baidu.

**HAQ index.** The data of HAQ index were collected from Fullman et al. (2018), with high scores indicating better healthcare accessibility and quality.

**Life satisfaction.** Participants were asked to indicate how dissatisfied or satisfied they are with their life overall. Responses are recorded on a six-point Likert scale ('not satisfied at all', 'dissatisfied', 'slightly dissatisfied', 'slightly satisfied', 'satisfied', and 'completely satisfied') (Campbell, 1976).

**Subjective social status.** Participants report subjective social status by completing the MacArthur scale (Adler & Stewart, 2007). Participants were presented with a 10-rung "social ladder" and then asked to indicate a rung that best represents their status. At the top of the "ladder" are the people who are the best off—with the most money, highest education, and the most respected jobs; at the bottom are the people who are the worst off—with the least money, least education, and the least respected jobs or no jobs. Scores range from 1 to 10, with high scores representing high subjective social status.

**Self-rated survival achievement in the fight against COVID-19.** Inspired by the MacArthur scale (Adler & Stewart, 2007) of subjective

social status, we similarly designed a 10-rung "suffering ladder" to measure subjective pandemic severity during the COVID-19 pandemic. At the top of the "ladder" are the people who are the best off—those who are safe and can successfully survive the pandemic; at the bottom of the "ladder" are the people who are the worst off—those who severely suffer from and cannot survive the pandemic. Participants were asked to choose a rung that best represent their achievement. Scores range from 1 to 10, with high scores representing low self-rated COVID-19 severity.

Details of the materials and data are available from <https://www.scidb.cn/en/s/M3IFbq>. All continuous variables are standardized with the scale function from base R.

### 3. Results

Approximately three months after the first lockdown for residents from 17 countries, we carried out a cross-national survey to investigate their willingness to quarantine and its influencing factors. Of the final valid sample consisting of 26,266 residents, 56.5% were female, and the mean age was 29.58 years. Table 1 presents the country-specific demographics and period when the data were collected. Descriptive statistics and bivariate correlations are shown in Appendix Table A. Mean and 95% confidence intervals of the willingness scores to quarantine are shown in Fig. 1. Furthermore, the scores of willingness to quarantine were used as dependent variables for multilevel linear regression analysis (see Table 2). We analyzed data with lme4 package (version 1.1-27.1) (Bates et al., 2007) and sjPlot package (version 2.8.10.1) (Lüdtke, 2021) in the R 4.0.2 statistical programming environment. The codes are available from <https://www.scidb.cn/en/s/M3IFbq>.

#### 3.1. Gender difference

Females ( $M = 49.25$ ) are more willing to be quarantined than males ( $M = 46.88$ ;  $t = 5.51, p < .001, d = 0.07$ ). Gender difference on the willingness to be quarantined remains significant when personal- and national-level variables are controlled (Table 2, Model 1:  $B = -0.07, SE = 0.01, p < .001$ ).

#### 3.2. Long-term orientation

As illustrated by Fig. 2, residents of countries with long-term orientation are less willing to be quarantined ( $r = -0.63, p < .01$ ) at the country level. The effect that long-term orientation by itself negatively predicts the willingness to be quarantined remains significant when personal- and national-levels variables are controlled (Table 2, Model 2:  $B = -0.27, SE = 0.06, p < .001$ ).

**Table 1**  
Study demographics.

Country	Data collection period (month/day)	Female n	Overall n	Age, mean (yr.)	Willingness to quarantine (SD)
Italy	6/14–7/15	417	916	26.87	41.69 (31.41)
Canada	6/16–7/15	498	1021	32.11	55.15 (31.81)
Germany	6/18–8/20	481	1045	29.93	43.63 (32.29)
the US	6/24–8/12	477	978	34.18	60.78 (32.63)
the Netherlands	6/15–6/23	168	367	29.04	46.89 (30.76)
the UK	6/23–7/15	612	970	35.20	49.62 (31.86)
Sweden	6/12–9/09	83	274	29.93	47.60 (31.11)
France	6/17–9/09	145	398	27.68	43.22 (30.98)
Spain	6/14–7/27	467	1044	30.87	53.68 (30.97)
Australia	6/01–9/13	418	877	31.94	54.05 (32.32)
China	4/23–6/09	10,062	16,627	28.92	45.67 (35.43)
South Africa	6/26–9/05	278	516	30.55	58.40 (34.17)
India	6/25–9/06	126	326	29.02	64.64 (32.62)
Nigeria	6/30–8/31	86	142	29.78	52.13 (33.03)
Malaysia	6/24–9/08	51	89	28.04	63.99 (29.13)
Philippines	6/24–9/09	97	149	29.04	69.79 (29.45)
Mongolia	5/04–6/02	371	527	25.52	64.10 (30.50)
Total		14,837	26,266	29.58	48.21 (34.59)

Note: The year when the data were collected for all countries was 2020.

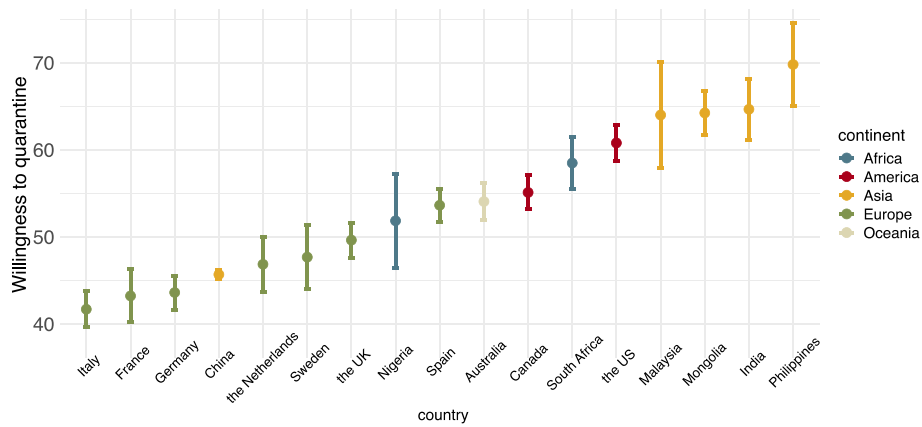


Fig. 1. Mean and 95% confidence intervals of the willingness scores to quarantine of each country (colored by continent). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Table 2  
Multilevel linear regression analysis for willingness to quarantine.

Predictors	Model 0		Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE	B	SE
(Intercept)	0.01	0.12	0.04	0.12	0.00	0.06	0.03	0.12	0.00	0.12
Personal level										
Age	-0.09***	0.01	-0.09***	0.01	-0.09***	0.01	-0.10***	0.01	-0.09***	0.01
Education (below high school)	0.08 <sup>†</sup>	0.05	0.09 <sup>†</sup>	0.05	0.09 <sup>†</sup>	0.05	0.09 <sup>†</sup>	0.05	0.19**	0.07
Education (high school)	0.07**	0.03	0.08**	0.03	0.08**	0.03	0.08**	0.03	0.17***	0.04
Education (associate/bachelor's degree)	0.04*	0.02	0.04*	0.02	0.04*	0.02	0.04*	0.02	0.07**	0.02
Life satisfaction	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Subjective pandemic severity	-0.08***	0.01	-0.08***	0.01	-0.08***	0.01	-0.08***	0.01	-0.08***	0.01
Subjective social status	0.06***	0.01	0.06***	0.01	0.06***	0.01	0.06***	0.01	0.06***	0.01
National level										
Per capita GDP	0.16	0.13	0.16	0.13	-0.09 <sup>†</sup>	0.05	0.16	0.13	0.16	0.13
Newly confirmed per100k	-0.05	0.13	-0.06	0.13	-0.01	0.07	-0.06	0.13	-0.06	0.13
Newly death per100k	-0.04	0.13	-0.03	0.13	0.02	0.07	-0.03	0.13	-0.03	0.13
Confirmed per10k	0.18	0.13	0.17	0.12	0.09	0.06	0.17	0.12	0.17	0.12
Death per10k	-0.17	0.14	-0.17	0.14	-0.10	0.07	-0.07	0.14	-0.07	0.14
Regulatory quality	-0.11	0.20	-0.11	0.19	-0.29**	0.10	-0.11	0.19	-0.11	0.19
Government effectiveness	0.13	0.13	0.13	0.13	0.26***	0.07	0.13	0.13	0.13	0.13
Population density	-0.03	0.05	-0.03	0.04	0.11**	0.04	-0.03	0.04	-0.03	0.04
HAQ index	-0.23*	0.10	-0.23*	0.10	0.06	0.08	-0.23*	0.10	-0.23*	0.10
Gender (dummy, male = 1)			-0.07***	0.01	-0.06***	0.01	-0.07***	0.01	0.01	0.03
Long-term orientation					-0.27***	0.06				
Interaction										
Gender × age							0.02 <sup>†</sup>	0.01		
Gender × education (below high school)									-0.18 <sup>†</sup>	0.10
Gender × education (high school)									-0.19***	0.05
Gender × education (associate/bachelor's degree)									-0.06 <sup>†</sup>	0.04
Random effects										
σ <sup>2</sup>	0.96		0.96		0.96		0.96		0.96	
τ <sub>00</sub>	0.04	country	0.04	country	0.01	country	0.04	country	0.04	country
ICC	0.04		0.04		0.01		0.04		0.04	
N	17	country	17	country	16	country	17	country	17	country
Observations	26,266		26,266		25,739		26,266		26,266	
Marginal R <sup>2</sup> /conditional R <sup>2</sup>	0.029/0.067		0.030/0.066		0.034/0.041		0.030/0.067		0.031/0.067	

Note: unstandardized regression coefficients are displayed with standard errors. In model 2, Mongolia was not included in the analysis due to the lack of data for long-term orientation score.

<sup>†</sup>  $p < .1$ .  
\*  $p < .05$ .  
\*\*  $p < .01$ .  
\*\*\*  $p < .001$ .

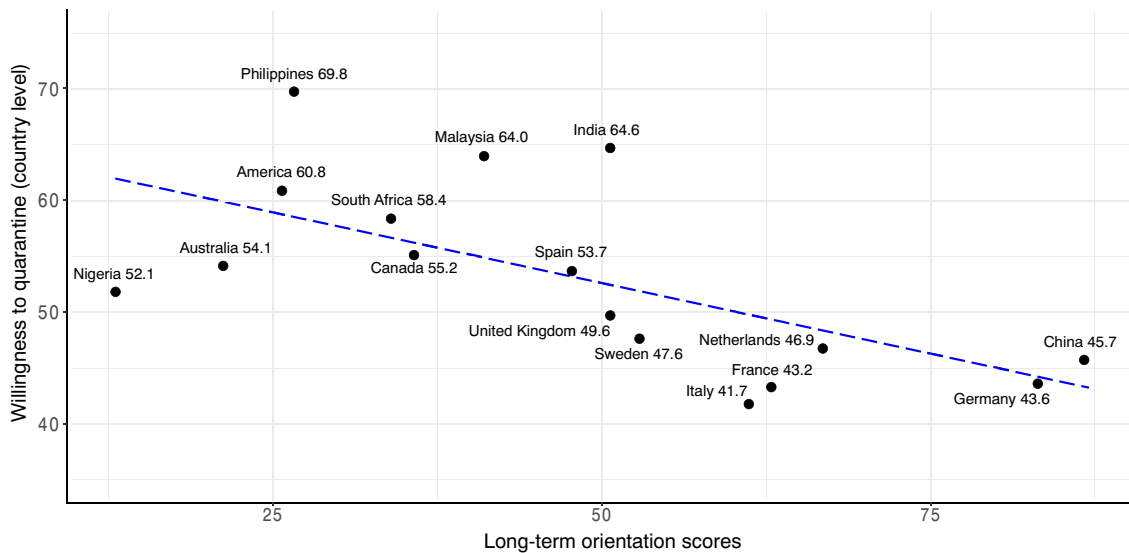


Fig. 2. Mean of the willingness scores to quarantine of each country, ordered by long-term orientation scores.

This finding suggests that culture (i.e., long-term orientation) fundamentally shapes how people deal with effective measures that can help overcome crisis, such as the COVID-19 pandemic. Understanding cultural differences not only provides insight into the current pandemic but helps the world prepare for future crises.

### 3.3. Gender differences by age and education

As illustrated by Fig. 3a, a large gender difference is observed regarding the willingness to quarantine among older people (Table 2, Model 3:  $B = 0.02, SE = 0.01, p < .1$ , marginally significant). Furthermore, older age was associated with a lower willingness to quarantine

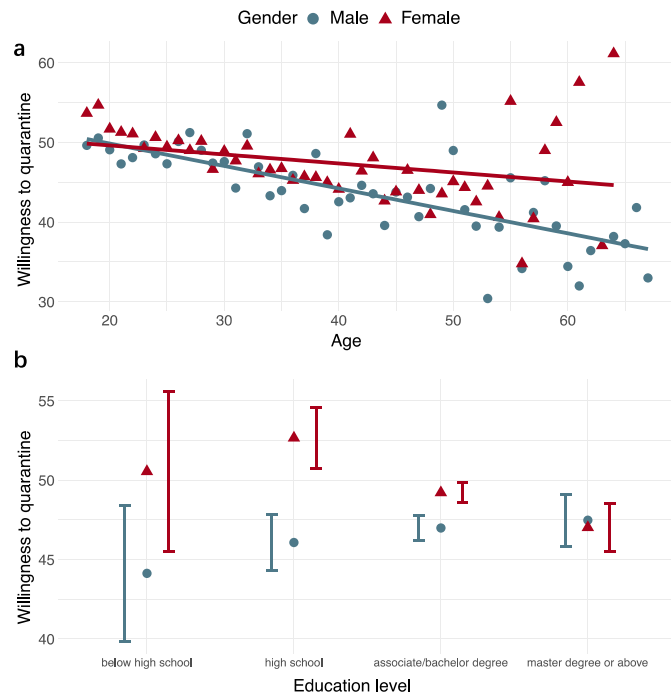


Fig. 3. Mean willingness to quarantine. a) Mean scores of the willingness to quarantine of each age, colored by gender. b) Mean scores and 95% confidence intervals of the willingness to quarantine of each education group, colored by gender.

(Table 2, Model 4:  $B = -0.09, SE = 0.01, p < .001$ ).

In addition, compared with people holding a master's degree or above, those with education below high school (Table 2, model 4;  $B = -0.18, SE = 0.10, p < .1$ , marginally significant), high school (Table 2, Model 4:  $B = -0.19, SE = 0.05, p < .001$ ), and associate/bachelor's degree (Table 2, Model 4:  $B = -0.06, SE = 0.04, p < .1$ , marginally significant) show a larger gender difference. In shorter terms, the gender difference of willingness to quarantine is large among people with low education, see Fig. 3b.

Therefore, findings of the current study show that 1) The willingness to be quarantined is low in countries with high long-term orientation; 2) Females are more willing to be quarantined than males; 3) Gender difference on willingness to be quarantined is large among people with older age and low education.

## 4. Discussion and implication

Quarantine is one of several public health measures to prevent the spread of infectious diseases, but has considerable social, economic (Guillon & Kergall, 2020) and psychological impact (Brooks et al., 2020).

At a time when the first COVID-19 lockdown has been imposed for three months in the country surveyed in this study, 26,266 residents' willingness to quarantine and its influencing factors are measured. As expected, high heterogeneity in responses is observed between countries. Differences in scores of willingness to quarantine range from nearly 40 (i.e., Italy) to nearly 70 (i.e., Philippines).

Low willingness to quarantine is a cause for concern. Compared with residents from countries with low long-term orientation, residents from countries with high long-term orientation show low willingness to quarantine. Such willingness means that quarantine decisions become more challenging and make quarantine measures more difficult to apply in high long-term orientation countries. Recent studies have found that cultural differences among countries can affect people's adaptive behaviors during the COVID-19 pandemic, such as the use of masks (Lu et al., 2021) and gathering behavior in public places (Huynh, 2020). An indirect but remarkable evidence on cultural background factor of long-term orientation is that individuals with higher discount rate (i.e., more strongly present-biased) were more likely to comply with COVID-19 public health measures (Calluso et al., 2021; Wismans et al., 2021). Such a finding can be considered relevant to and supportive of our findings, given that the smaller individuals' discount rate (i.e., an index measuring how people focus on present), the more likely they are long-



term-orientated. Accordingly, our study provided evidence that the cultural difference in terms of long-term orientation would affect residents' willingness to quarantine.

By identifying distinguishing and objective characteristics, public health officials may be better able to identify who in the population is less willing to be quarantined. We observed that males are less willing to be quarantined than females, and this gender difference in willingness to quarantine is consistent with studies on attitudes and behaviors in precautionary activities, such as information-seeking activities, taking quarantine measures (Galasso et al., 2020; Ibuka et al., 2010; Park et al., 2010) and risk taking (Rieger et al., 2015; Zhou et al., 2014). Additionally, we found that such a gender difference is larger among people with older age and lower education, and that the willingness to quarantine generally decreases with age. Therefore, our findings suggested that demographics (i.e., gender, age and education level) can jointly predict the willingness to quarantine. Awareness of the abovementioned differences may help the media, psychologists, social workers, health professionals, municipal officials, and government authorities effectively communicate with the public to enable them to target messages on quarantine strategy and thus make balanced and appropriate decisions and actions. This awareness is important, especially in the case of prolonged or repeated lockdown, when the potential benefits of mandatory mass quarantine need to be weighed carefully against the possible psychological barrier (unwillingness to be quarantined).

Our study has several limitations. Firstly, the measured dependent variable of this study is the residents' self-reported willingness to quarantine rather than whether or not they take or comply with the quarantine behavior. We are aware of the usual predictive gap between intentions and actual behavior (Gollwitzer, 1999). If this case occurred in some countries we surveyed, then other cultural-level moderating variables warrant further exploration. Secondly, although we controlled for the start time of the survey (i.e., the first COVID-19 lockdown has been for three months) in each country, we did not consider the length of lockdown and any change of restriction in each country. Lastly, we only measured the willingness to quarantine during the early phase of the pandemic. Given that people's willingness to quarantine may change in the following rounds of the pandemic in some countries, which is

beyond our initial expectation, whether or not our measured willingness is useful or needed remains to be explored in the future.

All in all, identifying and understanding the willingness to quarantine and its influencing factors within distinct populations offer useful suggestions or information to relevant parties, such as the healthcare system that administers the quarantine and the policymakers and public health officials who mandate it. Moreover, the findings may contribute to improve current systems for the management of public health emergencies.

**CRedit authorship contribution statement**

**Jia-Tao Ma:** Data curation, Formal analysis, Writing-Original draft preparation, Writing-Reviewing and Editing. **Yang Ding:** Data curation, Investigation. **Si-Chu Shen:** Data curation, Investigation, Writing-Original draft preparation. **Yi Kuang:** Investigation, Writing-Original draft preparation. **Shu-Wen Yang:** Investigation, Writing-Original draft preparation. **Ming-Xing Xu:** Investigation, Writing-Original draft preparation. **Shu Li:** Conceptualization; Supervision; Methodology, Writing-Original draft preparation, Writing-Reviewing and Editing, Funding acquisition.

**Declaration of competing interest**

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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**Appendix A**

**Appendix Table A**

Descriptive statistics and correlations.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Gender (dummy, male = 1)	0.54	0.50																	
2. Age	29.58	9.71	0.11																
3. Education level	2.99	0.56	-0.05	0.05															
4. Life satisfaction	3.89	1.13	-0.01	0.07	0.09														
5. Subjective pandemic severity	6.98	2.03	0.01	0.03	0.08	0.35													
6. Subjective social status	5.46	1.70	0.02	0.10	0.16	0.34	0.35												
7. Per capita GDP	20,008.13	19,368.56	0.11	0.12	0.04	0.11	0.08	0.11											
8. Newly confirmed per 100k	7.15	20.29	0.06	0.10	-0.01	0.04	-0.02	0.03	0.37										
9. Newly death per 100k	0.33	0.52	0.08	0.10	-0.01	0.05	0	0.05	0.53	0.91									
10. Confirmed per 10k	12.28	20.60	0.10	0.12	0.03	0.08	0.03	0.07	0.73	0.60	0.76								
11. Death per 10k	1.12	2.03	0.09	0.09	0.02	0.07	0.04	0.08	0.68	0.32	0.59	0.90							
12. Regulatory quality	0.26	0.80	0.10	0.12	0.03	0.1	0.07	0.10	0.86	0.35	0.53	0.71	0.67						
13. Government effectiveness	0.71	0.51	0.08	0.13	0.03	0.07	0.05	0.03	0.68	0.30	0.43	0.53	0.43	0.88					
14. Population density	145.14	84.69	-0.00	-0.03	0.02	0.01	0.01	0.01	-0.04	-0.29	-0.28	-0.08	0.10	-0.26	-0.39				
15. HAQ index	80.53	10.81	0.09	0.08	0	0.04	0.07	0.02	0.74	-0.04	0.19	0.52	0.57	0.64	0.66	-0.10			
16. Long-term orientation	72.93	22.10	-0.09	-0.13	-0.04	-0.1	-0.03	-0.11	-0.70	-0.58	-0.66	-0.67	-0.55	-0.73	-0.52	0.31	-0.25		
17. Willingness to quarantine	48.22	34.59	-0.03	-0.07	-0.01	0	-0.06	0.04	0.05	0.09	0.08	0.06	0.03	0.06	0.03	-0.05	-0.05	-0.12	

**Appendix B. Supplementary data**

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2022.111589>.

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