

Perceived Fear of COVID-19 and its Associated Factors Among Nepalese Older Adults in Eastern Nepal: Findings From a Cross-Sectional Study

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Abstract

Background

Coronavirus disease 2019 (COVID-19) has impacted all age groups, but older adults may have greater distress given their increased risk for severe illness and mortality. In Nepal, most stories of older adults are untold – both in pre-COVID-19 and the COVID-19 era. In this study, we aimed to assess the perceived fear of COVID-19, and associated factors, among older adults in eastern Nepal.

Methods

A cross-sectional study was conducted between July and September 2020 among 847 older adults (≥ 60 years) residing in three districts of eastern Nepal. Perceived fear of COVID-19 was measured using the seven-item Fear of COVID-19 Scale (FCV-19S). In order to examine the factors associated with the COVID 19 fear, a generalized estimating equation, adjusting the sampling design was used. STATA 15 and JASP 0.13.1 were used for data analyses.

Results

The mean score of the FCV-19S was 18.1 ± 5.2 , and a sizeable proportion of participants, ranging between 12%-34%, agreed to the seven items of the fear scale. Increasing age, Dalit ethnicity remoteness to the health facility, and being concerned or overwhelmed with the COVID-19 were associated with greater fear of COVID-19. Surprisingly, pre-existing health conditions were inversely associated with fear of COVID-19.

Conclusion

Greater fear of the COVID-19 pandemic among the older population suggests that during unprecedented times such as the current pandemic, the psychological needs of most vulnerable groups should be prioritized. Fear among the most vulnerable groups could be reduced with the flow of adequate genuine information as well as better preparedness and psychosocial interventions.

Background

As of 29 September 2020, there were over 33 million confirmed cases and over one million deaths from novel coronavirus disease-2019 (COVID-19) (1). By the same date, Nepal reported 76,258 confirmed cases and 491 death from COVID-19 (2). The ongoing COVID-19 pandemic has been the center of focus globally and covered extensively in local and international news outlets. Much of the global and regional focus has been on disease prevention of transmission and therapeutics, which are undoubtedly pressing public health needs during a pandemic. However, one understudied, nevertheless not a less important aspect of COVID-19, is its mental health impact in the general population and, more importantly, among high-risk groups.

The floating information related to COVID-19 rapid transmission, swamping infection rates, and mortality globally has led to the development of stress, anxiety, and fear among the population at the ground level. Over 100 countries worldwide (3), including Nepal – a south-Asian country between India and China – imposed partial and complete lockdown to curb the transmission of the virus. Consequently, social isolation, coupled with economic loss, may have serious impacts on the mental health of individuals (4). Life has been disrupted in most parts of the world, and the anxiety is common among people to accept the increasing cruelty of COVID-19 and to become accustomed to the new norm of life. Although most people seem to be physically, mentally, socio-economically impacted by the COVID-19 pandemic, the impact may be greater for certain groups such as the older population who are at an elevated risk of severe illness and mortality (5); the fatality rate for those over 80 years of age is five times the global average (6). COVID-19 may have disrupted everyday life, jeopardized the needs and rights of older people around the world, and exposed the deep-rooted ageism. Given the increased risk of infection and mortality, it is obvious that older adults are more vulnerable to fear and worry due to the current unprecedented pandemic condition. Fear may affect older people's feeling, mood, or behavior, which may impact their ability to function physically, socially and cognitively each day (7, 8). Specifically, in Nepal, most stories of older adults are untold in both pre-COVID-19 as well as COVID-19 era.

The Senior Citizen Act of Nepal defines individuals aged 60 years and older as senior citizens or older adults (9). The average life expectancy at birth in Nepal has increased from 49.6 years in 1981 to 70.6 years in 2016 (10), resulting in a burgeoning population of older adults. According to recent estimates for 2019, there were 2.67 million older adults in Nepal, representing 8.6% of the total population (11). The growth rate for the older population is 3.5% per year, which is greater than the national average of 1.35% (12).

There is scarce data on fear and its predictors among older adults in south Asian countries, mainly from a resource-limited country like Nepal. To the best of our knowledge, this is the first study ever been conducted to assess fear of COVID-19 and associated factors among the older adults at the community settings in Nepal amid the COVID-19 pandemic. Hence, the objective of this study is to assess the perceived fear of COVID-19, and associated factors, among Nepali older adults.

Methods

A cross-sectional study was conducted between July and September 2020, among the older adults (≥ 60 years) residing in three districts (Morang, Pachthar, and Terathum) of Province 1 in eastern Nepal. The sample size of 847 was calculated considering the following parameters: unknown prevalence = 50%, CI = 95.0%, sampling error = 5.0%, design effect = 2, and non-response rate = 5.0%. Multi-stage cluster sampling recruited the study participants. In the first stage, three districts from Province 1 were selected purposively. Then, one urban and one rural municipality in each districts were selected randomly. Subsequently, from each municipality, three wards (lowest administrative units in Nepal) were randomly selected. In the final step, a proportionate simple random sampling technique was used to recruit participants from each ward. Representatives from the municipalities provided the list of eligible older

adults in the selected wards. Eligibility criteria included age ≥ 60 years, Nepali nationals with a minimum of one year of residence in the community. The exclusion criteria included residing in nursing care, and mental conditions (clinically proved schizophrenia, bipolar mood disorder), a hearing disability, or unable to communicate.

Data collection and study variables

Data were collected by semi-structured interviews using a validated survey questionnaire (13). Surveyors were 12 trained health care providers working for the government of Nepal in the selected districts. Prior to data collection, surveyors were trained through the Zoom meeting facilitated by five authors (UNY, OPY, DRS, SKM, SM). Surveyors were trained on study tools, participant recruitment, ethical aspects, and data collection techniques. Surveyors visited the households and collected the data using the KoBo Toolbox mobile app (14).

Dependent variable measurement

COVID-19 related fear was the primary outcome, which was measured using the seven-item Fear of COVID-19 Scale (FCV-19S) developed and validated by Ahorus et al. among the general Iranian population (13). Participants' agreement/disagreement with the seven items was assessed using a five-point Likert-scale (ranging from 1= "strongly disagree," 3= "neither agree nor disagree," and 5= "strongly agree"). Hence, the cumulative score ranged from 7 to 35, where the higher the scores, the greater the fear of COVID-19.

The internal consistency reliability of the scale among Nepali older adults was acceptable (Cronbach's $\alpha = 0.86$, McDonald's $\omega = 0.88$ and Guttman's $\lambda = 0.90$). Confirmatory factor analysis (CFA) was conducted to validate the scale among the older participants where the standardized root mean square residual (SRMR) close to 0.06, and the Goodness of Fit Index (GFI), Normed Fit Index (NFI) and Comparative Fit Index (CFI) close to 0.90 were considered to be acceptable (15). In the CFA, the scale indices were well fit and within the acceptable limit [χ^2 (14, N = 843) = 345.82, $p < 0.01$; SRMR = 0.062; GFI = 0.884; NFI = 0.917; IFI = 0.920; CFI = 0.920].

Independent variable measurement

Independent variables included age group, gender, marital status, family type, ethnicity, education, occupation, urban/rural residence, walking distance to the nearest health facility, any pre-existing chronic health problems, any current medications, financial hardships with health care access, need of additional care from family members/caregivers, social security allowance, source of COVID-19 information, and feeling overwhelmed and concerned because of COVID-19 pandemic. These co-variates definition and measurements are described in our previous work (16, 17). For the variable "sources of COVID-19 information", in multiple response questions, we asked participants to list their source of information for COVID-19. Participants were also asked "How overwhelmed are you feeling in this corona pandemic (Yes/no/not sure) and How concerned are you because of this coronavirus pandemic (Not at all/Somewhat concerned/Very concerned)".

The English version of the tool was first translated to Nepali and then back-translated to English by three researchers to ensure the contents' consistency. Piloting of the tool among a small sample (n = 10) of older adults helped to refine the final version by considering the remarks from the older population. Following piloting, minor editorial issues were resolved, such as "COVID-19" was replaced with the term coronavirus throughout, and the question that aimed to capture proximity to the health facility was clarified by specifying "walking distance to the nearest health facility."

Statistical analyses

Mean (SD) and frequency (%) are used to depict participants' characteristics. Independent t-tests and ANOVA evaluated the mean differences in the FCV-19S score by participants' characteristics. The bar graph shows the participants' agreement with the seven items of FCV-19S. In order to examine the factors associated with the COVID 19 fear, a generalized estimating equation, adjusting the sampling design was used. The variables with $p < 0.1$ in the bivariate analyses were included in the final multivariate model. STATA 15 and JASP 0.13.1 were used for data analyses.

Results

Table 1 describes participants' characteristics overall as well as in bivariate association with COVID-19 fear. Among 843 participants, 45% were aged 60–69 years, 49% were female, 76% were married, and 87% lived in joint families. Similarly, the majority of them had no formal education (68%), had pre-existing conditions (64%) or under any medications (51%), and had financial hardships to access health care (55%) (Table 1).

Table 1: Participants characteristics and COVID-19 fear using bivariate analysis

	Frequency	%	COVID-19 fear score		
			Mean	SD	P
Total	843	100.0	18.1	5.2	
Age (Years)					
60-69	383	45.4	16.7	3.6	<0.001
70-79	315	37.4	19.1	6.1	
80-89	123	14.6	19.5	5.9	
≥90	22	2.6	20.5	5.1	
Gender					
Female	412	48.9	18.2	5.3	0.782
Male	431	51.1	18.1	5.1	
Marital status					
Married	639	75.8	17.8	5.3	0.005
¹ Without partner	204	24.2	19.0	5.0	
Family type					
Nuclear	111	13.2	18.2	4.1	0.908
Joint/extended	732	86.8	18.1	5.4	
Ethnicity					
Brahmins/Chhetris	266	31.6	18.8	5.4	<0.001
Dalits	50	5.9	19.9	5.3	
Madhesi	132	15.7	15.7	3.0	
Indigenous	276	32.7	19.0	6.0	
Others	119	14.1	16.2	3.1	
Education					
Uneducated	577	68.4	17.8	5.1	0.011
Educated	266	31.6	18.8	5.4	
Occupation					
Retired	51	6.0	17.4	3.7	
Agriculture	400	47.4	19.4	5.9	

Business	34	4.0	18.2	4.7	<0.001
Housewife	223	26.5	17.0	4.3	
Wages based labors	39	4.6	17.4	4.1	
Others	96	11.4	15.9	3.6	
Residence					
Rural	370	43.9	18.6	6.0	0.012
Urban	473	56.1	17.7	4.4	
Walking distance to the nearest health facility					
<30 mins	272	32.3	16.7	4.8	<0.001
30-60 mins	372	44.1	18.2	4.7	
>60 mins	199	23.6	19.7	6.1	
Pre-existing health conditions					
No	301	35.7	19.4	6.4	<0.001
Yes	542	64.3	17.4	4.2	
Current medications use					
No	409	48.5	18.6	5.9	0.005
Yes	433	51.4	17.6	4.4	
Financial hardships with health care					
No/not sure	379	45.0	18.7	6.5	0.001
Yes	464	55.0	17.5	3.8	
Need additional care from family					
No	320	38.0	17.1	4.7	<0.001
Yes	523	62.0	18.7	5.4	
Receiving social security allowance					
No	409	48.5	17.1	4.6	<0.001
Yes	434	51.5	19.0	5.6	
Source of information of COVID-19*					
	732	85.8	18.2	5.0	0.439
Family/relatives					

TV/Radio	672	79.7	18.5	5.5	<0.001
Newspapers	58	6.9	17.3	4.1	0.242
Social medias	88	10.4	17.6	6.2	0.302
Health workers	80	9.5	19.5	5.8	0.011
Internet	20	2.4	16.4	2.5	0.129
Others	3	0.4	11.7	4.0	0.032
Concerned about COVID-19 pandemic					
Not at all	337	40.0	15.4	3.4	<0.001
Somewhat concerned	452	53.6	19.6	5.4	
Very concerned	54	6.4	22.5	4.8	
Feeling overwhelmed with the COVID-19 pandemic					
No/not sure	656	77.8	17.8	5.2	<0.001
Yes	99	11.7	20.7	5.5	
*Multiple responses					
¹ Includes Widow/widower/separated/never married					

The mean score of the FCV-19S was 18.1 ± 5.2 (Table 1). Participants' reported agreement on the seven items of FCV-19S is shown in Fig. 1, whereby 34.6%, 24.1%, 14.3%, 28.0%, 31.6%, 12.2%, and 14.0% participants agreed being afraid, uncomfortable, clamminess, fearful of losing life, being nervous or anxious, and experienced sleeplessness and palpitation due to COVID-19, respectively (Fig. 1). Mean differences in fear of COVID-19 were noted by age category, marital status, ethnicity, education, occupation, residence, distance to the nearest health facility, pre-existing health conditions, medications use, financial hardships with health care, needing additional care from family, receiving social security allowance, and being concerned or overwhelmed with the COVID-19 pandemic (Table 1).

Factors associated with the fear of COVID-19 among Nepali older adults

Table 2 presents factors associated with the fear of COVID-19 among study participants. Increasing age, Dalit ethnicity, remoteness to the health facility, and being concerned or overwhelmed with the COVID-19 pandemic were associated with greater fear of COVID-19. Surprisingly, pre-existing health conditions were inversely related to fear of COVID-19.

Table 2: Factors associated with the fear of COVID-19 among Nepali older adults (N=843)

	¹ Coeff	Std. Err.	P-value	95% CI		
				Lower	Upper	
Age (Years)						
60-69	Ref.					
70-79	1.75	0.98	0.102	-0.41	3.92	
80-89	2.65	1.01	0.024	0.43	4.88	
>90	3.69	1.51	0.032	0.38	7.01	
Marital status						
Married	Ref.					
² Without partner	0.62	0.36	0.116	-0.18	1.42	
Ethnicity						
Brahmins/Chhetris	Ref.					
Dalits	1.43	0.32	0.001	0.72	2.14	
Madhesi	-1.24	0.82	0.161	-3.05	0.57	
Indigenous	-0.09	0.57	0.874	-1.35	1.16	
Others	-2.16	1.54	0.190	-5.55	1.24	
Education						
Uneducated	Ref.					
Educated	0.05	0.34	0.893	-0.71	0.80	
Occupation						
Retired	Ref.					
Agriculture	1.12	0.69	0.134	-0.41	2.65	
Business	0.87	1.25	0.503	-1.89	3.63	
Housewife	0.07	0.83	0.933	-1.76	1.91	
Wages based labours	1.23	1.12	0.294	-1.23	3.69	
Others	-0.16	1.09	0.884	-2.56	2.23	
Residence						
Rural						
Urban	-2.35	1.71	0.196	-6.12	1.41	

Walking distance to the nearest health facility						
<30 mins	Ref.					
30-60 mins	0.72	0.27	0.023	0.12	1.33	
>60 mins	1.65	0.45	0.004	0.65	2.65	
Pre-existing health conditions						
No	Ref.					
Yes	-1.94	0.83	0.039	-3.76	-0.12	
Current medications use						
No	Ref.					
Yes	-0.19	0.68	0.780	-1.68	1.30	
Financial hardships with health care						
No/not sure	Ref.					
Yes	-0.26	0.88	0.776	-2.19	1.68	
Need additional care from family						
No	Ref.					
Yes	0.77	0.72	0.306	-0.81	2.34	
Receiving social security allowance						
No	Ref.					
Yes	-0.10	0.49	0.850	-1.18	0.99	
Source of information of COVID (Ref.=No)						
TV/Radio	1.46	0.73	0.070	-0.14	3.06	
Health workers	0.63	0.47	0.202	-0.39	1.66	
Others	-3.56	1.32	0.021	-6.46	-0.66	
Concerned about COVID-19 pandemic						
Not at all	Ref.					
Somewhat concerned	2.95	0.70	0.001	1.42	4.48	
Very concerned	6.02	0.51	<0.001	4.91	7.13	
Feeling overwhelmed with the COVID-19 pandemic						
No/not sure	Ref.					

Yes	1.88	0.61	0.011	0.53	3.23
Constant	14.89	1.58	<0.001	11.41	18.36

Compared to the youngest age group, there was a gradual increase in the fear coefficient with the age categories suggesting that the oldest participants were the most fearful. Notably, the coefficient was not statistically significant for the age group 70–79. Compared to Brahmins/Chhetris, the Dalits ethnic group had a higher fear level (Coef.:1.43; 95%CI: 0.72 to 2.14). Likewise, a dose-response relationship was observed between perceived COVID-19 fear and the proximity or remoteness to the nearest health facility, measured in terms of approximate walking time to the facility; those at the most remoteness (> 60 min walking time) had the highest fear coefficient (Coef. 1.65; 95%CI: 0.65 to 2.65) compared to those at the proximity (< 30 min walking time). Older adults with pre-existing health conditions were less fearful of COVID-19 than those without any conditions (Coef.: -1.94; 95%CI: -3.76 to -0.12). Moreover, those who were concerned about COVID-19 [(somewhat concerned coef.: 2.95; 95%CI: 1.42 to 4.48) and (very concerned coef.: 6.02; 95%CI: 4.91 to 7.13)] were more fearful than those who weren't concerned at all. Likewise, participants overwhelmed with the COVID-19 pandemic were more fearful than their counterparts (Coef.: 1.88; 95%CI: 0.53 to 3.23).

Discussion

This study assessed the perceived fear of COVID-19 and factors associated with the fear among Nepali older adults. The increasing problem of COVID-19 worldwide has led to increasing levels of stress, anxiety, and fear, in particularly among the older populations. Nepali older adults experienced different levels of COVID-19 fear on the seven items of the fear scale developed by Ahoruset al. (13). A sizable proportion of participants reported an agreement (ranging between 12%-34%) on the seven items of FCV-19S. Although the literature on fear of COVID-19 among the older population lacks from Nepal, experts opine that COVID-19 has heavily affected the mental health of older adults across the globe as they are more susceptible to fear and anxiety problems during the pandemic (18, 19). Our findings aligned with the recently published evidence that reported fear, psychosocial effects, and uncertainty due to COVID-19 (20, 21). The ongoing fear among the general Nepali population is also corroborated by the media reports of residents protesting against the building of quarantine centers near their community settlement, evicting health workers from their rented units, non-attendance at the funerals, entry blockades to outsiders into their local areas, demonstrations and protests against the insufficient government's responses and so on. All these acts reveal the degree of fear perpetrated on the social fabric of Nepal. Moreover, the infodemics and misinformation spreading from fake and unauthorized news portals, and also from social media might have created additional fear among the general population (22).

Fear can be explained by a myriad of predictor variables. Increasing age, Dalit ethnicity, remoteness to the health facility, and being concerned or overwhelmed with the COVID-19 pandemic were associated with greater fear of COVID-19. The increasing fear of COVID-19 with increasing age was expected for two reasons. First, the impact of COVID-19, in terms of the hospitalizations, ICU admissions, and fatality rate, is highest among those ≥ 85 years of age (23). Notably, chronic disease or multimorbidity increases with

age (24), which is one of the factors that make older people more vulnerable to the cruelty of COVID-19. Relatedly but surprisingly, our participants with prevalent chronic conditions perceived lesser fear than those without such conditions. This could be because people with pre-existing conditions have already navigated health services, and thus they know where and how to access health care. Additionally, they may also have received reliable information about COVID-19 and its prevention from their healthcare provider. Another possible explanation could be that those with chronic conditions have already developed resilience to dealing with major disease conditions which may have helped to develop perceived confidence to managing COVID-19, should they be infected. Furthermore, motivation and support from family members are important in chronic disease management in Nepal (25). Thus our participants with pre-existing conditions may have benefited from their social support, which may have made them feel safer and consequently lessen the fear. However, we suggest the need for further study to explore the reasons. Despite the unexpected finding, we still believe that the increased risk of severe outcomes and death is one reason to increase the fear among older ages. Second, low health literacy among older adults in Nepal, specifically the oldest age groups (26), may avert their ability to access, analyze, and appraise the information on COVID-19. Furthermore, a metaanalysis on aging and the misinformation effect found that older adults above the age of 65 are more vulnerable to misinformation (27). Misinformation could aggravate fear and increase the sense of helplessness (28). Misinformation and ageism have prevailed during the current pandemic, and reports of older adults perceiving that COVID-19 had periled their existence (29) is an example that emphasizes the negative mental health impact of COVID-19 among the most vulnerable group. Such misinformation and ageism may make older adults very concerned and overwhelmed about the pandemic, which eventually can accumulate stress, fear, panic, and depression (30). As COVID-19 rapidly spreads around the world, adverse mental health effect among the older population is a global health issue. Subsyndromal mental health consequences have spiked among the older population due to isolation and loneliness (31). So, we should pay more attention to the old-age population who need more care and psychological support during the pandemic (32, 33).

Another notable finding was the greater perceived fear among Dalits (low caste ethnic minority as per traditional hindu caste system) compared to the Brahmin/Chhetris. Notably, the Dalit ethnic group were historically considered "untouchables" until the recent past and are still disadvantaged in terms of opportunities. The role of social determinants of health and their linkage to poor health outcomes among minorities is well documented (34). Although the socio-economic and health inequalities between the upper caste group and Dalits have been existent historically, even in the pre-COVID era, nevertheless, the current pandemic, by disproportionately affecting marginalized communities (35), has led us to rethink and revisit the disparities by ethnicity. Unfortunately, the COVID-19 case or mortality counts by ethnicity is unavailable in Nepal, but the greater perceived fear among Dalit ethnic groups could be attributed to the relative disadvantages they may have in terms of access to health care and other resources.

The results of this study revealed that being distant from health facilities was positively associated with COVID-19 related fear. This is reasonable because most of the local health care facilities have halted their services due to fear of COVID-19 transmission (36), and older adults who reside farther away from the

health facility may think that it would be difficult to reach health facilities/centers for testing or COVID-19 related health care on time. On the same line, fear and uncertainty of the COVID-19 may have increased in the minds of older people as they are conscious of their effete immunity. Our study identified that the participants who were overwhelmed and concerned about the effect of the COVID-19 were more fearful than those who were indifferent to it. This is anticipated as fear of COVID-19 cripples when people become more concerned about its lethal outcomes, which triggers psychological distress (29). Mass media, including social media, also play a pivotal part in this regard as they are providing up to date information of this deadliest disease and making the people concerned about its negative outcomes (37). One of the ways forward could be increasing the conversation about mental health and dissemination of messages portraying self-care and coping strategies.

One of the strengths of this study is that it is the first of its kind to assess the level of COVID-19 related fear among older adults in Nepal. A limitation is that the study conducted in three districts of Nepal in Province 1, which limits the generalizability to other provinces and/or settings of Nepal. The cross-sectional study design doesn't suggest any causal relationship between fear and its correlates observed in this study. Additionally, we relied on the information provided by participants, where social-desirability bias could have occurred.

Conclusion

Despite the global burden of mental health, its importance has been relatively less recognized. The losses of the ongoing pandemic should not only be understood in terms of the loss of lives and economy, but the underlying psychosocial morbidities and their consequences, which may linger around even the pandemic is curbed, should be acknowledged. The greater fear of the COVID-19 pandemic among the older population suggests that during unprecedented times such as the current pandemic, due care of the psychological needs of most vulnerable groups needs to be taken. Thus, addressing the mental health needs of the most vulnerable group should be one of the priorities of pandemic management. Fear among the most vulnerable groups could be reduced with the flow of adequate genuine information as well as better preparedness and psychosocial interventions. Mobilizing the existing ones or setting up new mental health services is needed. Given the infodemics that heighten during the crisis, which may further aggravate the fear among the general public or among the most vulnerable groups, dissemination of appropriate information related to pandemic management as well as self-care and management of psychosocial health should be more frequent.

Abbreviations

CI: Confidence Interval

COVID-19: Novel coronavirus disease-2019

FCV-19S: Fear of COVID-19 Scale

OR: Odds Ratio

RMs: Rural Municipalities

Declarations

Availability of data and materials

Data are available from the first and the corresponding author.

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Authors Contributions

UNY, OPY, DRS, SS, BR, LBR, MKT and SKM conceived the study. OPY and DRS conducted the fieldwork. UNY, SG, BR, SKM and SM wrote the first version of this manuscript and all others provided significant inputs. UNY, SG, DRS and SM participated in the data analysis. All authors read and gave their approval to the final version of this manuscript submitted for publication.

Ethics approval and consent to participate

The study was approved by the Institutional Review Board of Nepal Health Research Council, Government of Nepal, Ministry of Health, Kathmandu. After detailed information, all study participants gave their written informed consent.

Consent for publication

Not applicable

Competing interests

The authors declared no potential conflicts of interest with respect to research, authorship, and publication of this article.

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Figures

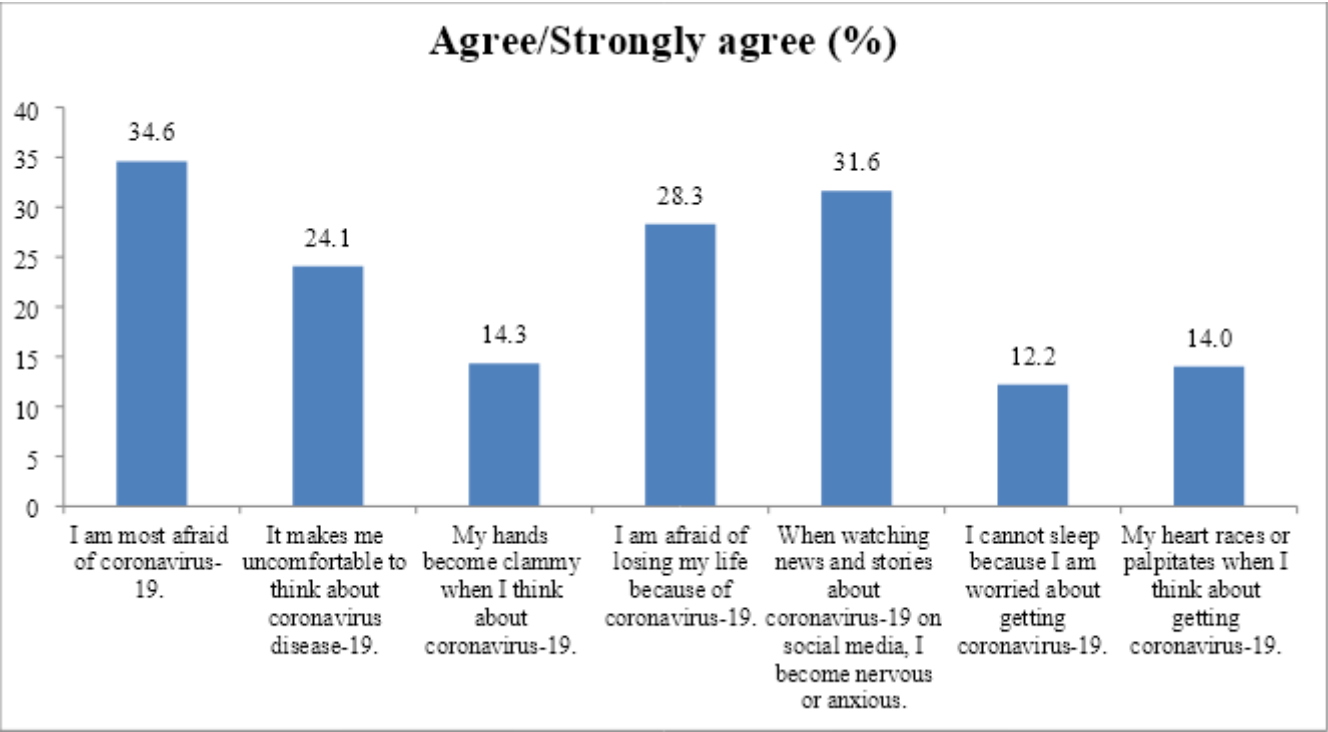


Figure 1

Participants agreement on the seven items of the COVID-19 fear scale

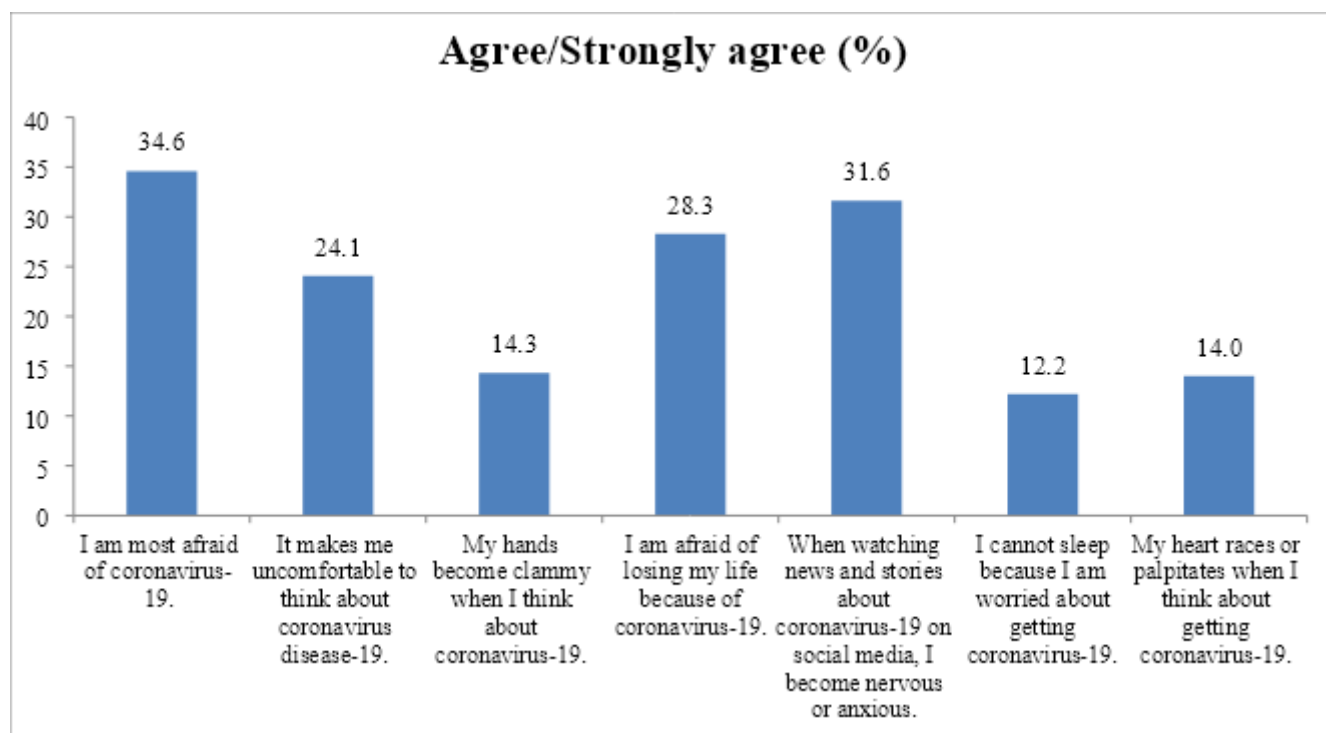


Figure 1

Participants agreement on the seven items of the COVID-19 fear scale