Validation and Psychometric Properties of the Sri Lankan Versions of the Fear of COVID-19 Scale

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The coronavirus disease 2019 (COVID-19) outbreak has created unprecedented mental health issues among the worldwide general population. One of the most reported consequences is the fear of COVID-19. The present study translated and validated the Fear of COVID-19 Scale (FCV-19S) into Sri Lankan local languages (Sinhalese and Tamil). A total of 286 Sri Lankan adults participated in the study. Both translations of the FCV-19S demonstrated a good fit for the two-factor structure (TLI: 0.90 Sinhalese & 0.89 Tamil) and showed very good internal consistency ($\alpha = 0.85$ Sinhalese, $\alpha = 0.88$ Tamil). Concurrent validity indicated positive significant correlations with Kessler's Psychological Distress Scale (Sinhalese: $r=.305, p<.01$, Tamil: $r=.306, p<.01$). The Sinhalese and Tamil FCV-19S demonstrated reliable and valid psychometric properties for assessing fear of COVID-19 among Sri Lankans.

Keywords: fear of COVID-19 scale; psychometric properties; validation; Sri Lanka

Introduction

The coronavirus disease 2019 (COVID-19) is an emerging respiratory disease caused by a novel coronavirus and was first detected in December 2019 in Wuhan, China. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic, with 220 countries affected to date (World Health Organization, 2022). The site of infection determines the route of transmitting the virus among individuals. In the case of COVID-19, it is spread directly via the respiratory droplets and secretion and indirectly through contaminated inanimate surfaces. The disease is highly infectious, and its primary clinical symptoms are fever, dry cough, fatigue, myalgia (muscle pain), and dyspnoea (breathing difficulties).

As a result of most countries taking drastic measures (e.g., national lockdowns, closures of workplaces, schools, colleges and universities), the global economy, including the transport

industry has been badly affected (Ebrahim et al., 2020). In most companies, employees have been encouraged to work from home, and the physical closure of educational institutions has caused uncertainty and postponement of examinations for young people globally.

The public health measures introduced to inhibit the spread of the virus (e.g., lockdowns, spatial distancing, quarantining, mask-wearing, etc.) and the subsequent consequences (e.g., job losses, financial insecurities, and disruption of day-to-day activities) have had a significant adverse impact on mental health well-being (Galea et al., 2020). Indeed, there are growing concerns about the psychological effect of the COVID-19 pandemic, with available research showing that the COVID-19 pandemic has caused profound psychological effects among the world's general population, including specific cohorts such as healthcare professionals (Holmes et al., 2020; Van Bavel et al., 2020; Rajkumar, 2020; Roy et al., 2020; Wang et al., 2020; Liu et al., 2020; Hao et al., 2020; Kang et al., 2020 & Huang et al., 2020). For example, a study of 52,730 individuals in China found that almost 35% of the sample reported experiencing psychological distress (Halfwerk, 2020).

The anxiety and concerns in society surrounding COVID-19 have affected most individuals globally to varying extents. Recent evidence suggests that individuals who are kept in isolation and quarantine experience significant distress in the form of anxiety, anger, confusion, and post-traumatic stress symptoms (Brooks et al., 2020). The public's knowledge and attitudes are expected to largely influence the degree of adherence to the personal protective measures and, ultimately, a clinical outcome.

As COVID-19 is a new disease and has had devastating effects globally, its existence and spread have caused confusion, anxiety, and fear among the general public. Fear can be the

breeding ground for hatred and stigma. Social stigma has risen as specific populations (e.g., Indian Northeast individuals) have been targeted as being the reason for this outbreak (World Health Organization, 2021). It is important to avoid this stigma because it can cause individuals to hide their illness and not seek healthcare services immediately. The WHO has provided expert guidance and answers to public questions to help individuals manage fear, stigma, and discrimination during the COVID-19 pandemic (World Health Organization, 2021).

As research into COVID-19 continues, many of the facts keep on changing, and many myths are also prevalent among the general population regarding the prevention and management of the infection. These myths and fake news related to COVID-19 have also spread rapidly in the widespread use of social media (Naeem et al., 2021). Sometimes these can be very disturbing for specific individuals. Several websites (e.g., WHO) have provided myth-busters and authentic information (WHO, 2021). Governments have also urged individuals not to share these messages without checking their authenticity and credibility (Naeem et al., 2021).

One of the most complicated challenges is maintaining the community's psychological well-being and understanding the psychological responses towards the fear of COVID-19. Therefore, to overcome this challenge, an instrument with good psychometric properties that healthcare providers can use to quickly understand the fear of individuals during the COVID-19 outbreak was developed (i.e., the Fear of COVID-19 Scale) (Ahorsu et al. 2020). The initial FCV-19S was developed and validated with Iranian individuals in the Persian language. The English translation and validation of the FCV-19S were done in New Zealand and the UK (Lin et al., 2021; Winter et al., 2020).

In addition, a Tamil version of the FCV-19S was recently validated among Indian citizens living in Tamil Nadu (Bharatharaj et al., 2021). However, the Tamil language has regional differences and cultural deviations (Bharatharaj et al., 2021). Therefore, the present study translated, developed and validated the Sri Lankan versions of the FCV-19S among both Sinhalese-speaking and Tamil-speaking adults of Sri Lanka.

Materials and Methods

Participants, sampling and data collection

A cross-sectional survey was conducted among Sri Lankan citizens in March 2021. The guidelines for the participant-to-item ratio were set as 20:1 meaning that for the seven-item FCV-19S, a minimum of 140 participants were needed for each scale validation (Osborne & Costello, 2004). The inclusion criteria were (i) being aged 18 years or older, (ii) being a Sri Lankan citizen with Sinhalese or Tamil language proficiency, and (iii) giving consent and agreeing to participate. Incomplete responses were excluded from the analysis. A convenience sampling method was used (through an anonymous online survey and snowball sampling). At the start of the study, 20 emails were sent to individuals, and they were asked to forward it to at least another six associates of theirs and the participants were also asked to kindly share the survey with their personal and professional networks through emails and social media. The survey was stopped after exceeding the required minimum number of completed surveys (n=140 for each language) achieved for each language. The translated and validated FCV-19S Sinhalese and Tamil versions, and validated K6+ Sinhalese version were used as the study instruments after pretesting. The ethics committee of KAATSU International University, Sri Lanka, approved all procedures involved in the present study (KIU/ERC/21/07).

Translation and judgmental validation of the Fear of COVID-19 Scale

To translate the scale, first, the English version of the FCV-19S was given to an autonomous linguist who was also fluent in Sinhalese. The linguist translated all the items in the FCV-19S to Sinhalese. Second, one of the investigators, fluent in English and Sinhalese, evaluated the Sinhalese translation and provided feedback to the linguist and research team about the accuracy. Third, the translated Sinhalese version of the FCV-19S was again translated to English by a different linguist unfamiliar with the scale. Finally, both the forward and backward translations of the scale were assessed and evaluated for cultural appropriateness among the investigators. The Tamil translation procedure followed precisely the same steps as the Sinhalese version with Tamil linguists. The initial Fear of COVID-19 English version scale was also translated into Sinhalese and Tamil languages using the forward-backwards method (Kalfoss, 2019). The two Sri Lankan versions' face validity and content validity were confirmed by two panels of experts in Sinhalese and Tamil languages following two rounds of table discussions (Sinhalese and Tamil I-CVI = 0.967).

Both Sri Lankan scales were pretested through a small-scale pilot study before the data were collected. The piloting was carried out with ten individuals, and based on their comments, slight modifications to the scales were incorporated. Only the backward translation of Sinhalese to English was suggested with a slight modification to Item 3.

Measures

Fear of COVID-19 Scale: The FCV-19S was used to assess the participants' fear of the COVID-19 infection among the Sinhalese and Tamil populations. The scale comprises seven items that are rated on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Consequently, the total score ranges from 7 to 35, with a higher score signifying a greater fear of COVID-19 (Ahorsu et al., 2020). However, in the Greek version of the Fear of COVID-19

Scale, cut-off values of 16.5 or higher have shown considerable predictive potential for anxiety (16.5), health anxiety (17.5), and posttraumatic stress (18.5) (Nikopoulou et al., 2020). The psychometric properties of the Sri Lankan versions of the FCV-19S are reported in the Results section.

Kessler's Psychological Distress Scale (K6+) Sinhalese and Tamil versions: The Sinhalese (Wijeratne et al., 2011) and Tamil versions of the K6⁺ were used to assess participants' level of distress. The scale comprises six items that are rated on a five-point scale from 0 (*none of the time*) to 4 (*all of the time*). Consequently, the total score ranges from 0 to 24, with a higher score signifying greater mental ill-health issues (Wijeratne et al., 2011). The Tamil version for the K6⁺ was translated and validated into the Tamil language for the present study following exactly the same procedure as the Tamil version of the FCV-19S outlined above.

Data analyses

Statistical Package for Social Sciences (SPSS v.26), R (4.0), and R studio (1.3.1) software were used for data analysis. The construct validity of the Sinhalese version of the FCV-19S was analyzed using confirmatory factor analysis (CFA). Following the goodness of fit test and acceptance, the internal structure of the scale was evaluated using the following fit indexes: comparative fit index (CFI > 0.90); root means square error of approximation (RMSEA < 0.05 = close fit and RMSEA between 0.05-0.08 = reasonable fit); standardized root means square residual (SRMR ≤ 0.08), and χ^2 and its subsequent ratio with degrees of freedom ($\chi^2/df < 5$) (Al-Shannaq et al., 2021). The CFA goodness-of-fit indices were calculated using R with the *lavaan* package (Rosseel, 2012). Internal consistency was assessed with Cronbach alpha coefficients (α), inter-item correlations, and corrected item-total correlations using the *psych* package (Revelle, 2017). A Cronbach's α of 0.70 or higher indicates acceptable reliability. However, many experts have highlighted that, α is not an optimal measure of reliability

relative as compared to McDonald's omega. The McDonald's omega (ω) value higher than 0.70 considered as acceptable reliability (Hayes & Coutts, 2020). Concurrent validity was assessed by comparing the Pearson correlations between the FCV-19S and the K6+. The strength of the correlation was determined following where $r < .30$ was weak, $r = 0.30-0.59$ was moderate, and $r \geq 0.60$ was strong (DeVellis, 2021). The original version of the scale confirmed that the scale has a satisfactory internal consistency ($\alpha = 0.82$) and was valid (Ahorsu et al., 2020).

Results

A total of 286 Sri Lankan adults (82.9% female) participated in the study (48.9% Sinhalese and 51.1% Tamil). The mean age of the total sample was 26.23 years ($SD \pm 5.04$) with the majority being aged between 18 and 29 years (78.7%). The mean age of the Sinhalese language subgroup was 26.12 years ($SD \pm 5.00$) with the majority being aged between 18 and 29 years (82.9%) with 82.2% being females. The mean age of the Tamil language subgroup sample was 26.34 years ($SD \pm 5.09$) with the majority being aged between 18 and 29 years (77.9%) with 83.6% being females. The majority of the sample was married (73.6%), 49.3% were employed, and more than half were graduates (52.9%) (Table 1). Descriptive statistics of the item responses for Sinhalese and Tamil language versions FCV-19S are summarized in Table 2.

Insert Tables 1 and 2

The results of the confirmatory factor analysis (CFA) to verify the construct validity of the Sinhalese and Tamil versions of the FCV-19S two factor model are summarized in Table 3. The indices showed that the bi-factor model was the best fit for the data (Sinhalese version: TLI = 0.900, RMSEA = 0.125, RMSR = 0.050 and Tamil version: TLI = 0.889, RMSEA =

0.146, RMSR = 0.04), compared with the single-factor model (Sinhalese version: CFI = 0.836, RMSEA = 0.205, SRMR = 0.094 and Tamil version: CFI = 0.820, RMSEA = 0.730, SRMR = 0.099) following exploratory factor analysis. As a result, in exploratory factor analysis (EFA) the bi-factor model was adopted as a combined model with an original general factor and a two-factor model consisting of the ‘emotional response’ factor (Items 1, 2, and 5) and the ‘physiological response factor (Items 3, 4, 6, 7) for both the Sinhalese and Tamil versions (Figure 1).

Insert Table 3 and Figure 1

The Sinhalese FCV-19S version ($\alpha = 0.85$; $\omega = 0.93$) and Tamil FCV-19S version ($\alpha = 0.88$; $\omega = 0.94$) both had very good internal consistency. The inter-item correlations in the Sinhalese FCV-19S ranged between 0.22 and 0.67. The corrected item-total correlations of each item ranged between 0.51 and 0.70 indicating that the Sinhalese FCV-19S had adequate internal consistency (Supplementary Table 1). The inter-item correlations in the Tamil FCV-19S ranged between 0.3 and 0.8. The corrected item-total correlations of each item ranged between 0.57 and 0.74 indicating that the Tamil FCV-19S had adequate internal consistency (Supplementary Table 1 & 2).

The concurrent validities of the Sri Lankan FCV-19S scales were assessed using the Kessler Psychological Distress Scale (K6⁺). In assessing the correlation between FCV-19S and K6⁺, the Spearman rank correlation test was used rather than Pearson correlation because the scores and not normally distributed (Shapiro-Wilks’s test p -value for scores < 0.05). The FCV-19S (Sinhalese and Tamil version) both positively and significantly correlated with the K6⁺ scale (Sinhalese version, $r = 0.305$ [$p < .001$] and Tamil version, $r = 0.306$, [$p < .001$]) indicating that the Sri Lankan versions of the FCV-19S showed good concurrent validity

Overall, the analysis indicated that the Sinhalese and Tamil versions of the FCV-19S had a bi-factor model: emotional response (Items 1, 2, and 5), physiological response (Items 3, 4, 6, and 7), and general factor (overall), with high internal confidence and moderate construct validity.

Discussion

The FCV-19S has been translated and validated into many languages (Winter et al., 2020; Lin et al., 2021; Al-Shannaq et al., 2021; Soraci et al., 2020; Sakib et al., 2020; Stănculescu, 2021; Bitan et al., 2020; Reznik, 2020 & Tsipropoulou et al., 2020). The present study translated and validated the Sinhalese and Tamil versions of the FCV-19S among Sri Lankans. Based on the statistical analyses, the Sinhalese and Tamil versions of the FCV-19S have a bi-factor model with very good internal consistency in the emotional response factor, physiological response factor, and general factor, and moderately good construct validity. Based on these findings, it can be concluded that the FCV-19S Sinhalese and Tamil versions are valid instruments for assessing fear of COVID-19 fear among Sri Lankans. The results of the CFA showed that the bi-factor model was the best fit in the present study.

The COVID-19 pandemic has created a severe impact on all aspects of human health. According to the WHO's (2021) preliminary estimates for 2020, the total number of global "excess deaths" directly and indirectly attributed to COVID-19 will be at least three million, which is 1.2 million higher than the official data provided to the WHO by countries. Consequently, COVID-19 has already developed unprecedented fear among individuals. Furthermore, it can be stated that assessing the level of fear related to COVID-19 is important in maintaining healthy mental and the physical status during the COVID-19 pandemic. Therefore, having a tool in a country's own mother tongue is essential in assessing COVID-

19-related fear among the citizens since Sri Lanka is a multicultural country that uses Sinhalese, Tamil, and English languages as the main languages in communication. In Sri Lanka, the majority of citizens communicate through the Sinhalese language while Northern, Eastern, North-Western, and some parts of the Central province communicate through the Tamil language as the main language. In the present study, most of the Tamil language speakers (84%) were from the Western province. However, in Sri Lanka, Sinhalese and Tamil are considered national languages, and around 20% communicate in Tamil. Therefore, it was timely to translate the FCV-19S into Sinhalese and Tamil languages to adapt them based on the culture.

The present study has investigated the psychometric properties of the FCV-19S for Sri Lankan national languages (Sinhalese and Tamil). The study showed both the Sinhalese version and Tamil version of the FCV-19S had very good internal consistency as demonstrated by high Cronbach's alpha (0.85 and 0.88 respectively), and acceptable construct validity as shown by the EFA and CFA. Results indicated a two-factor model (physical outcomes of fear and perceptual fear) was more applicable for Sri Lankans, showing contrasting findings with the original study which reported a single-factor model (Ahorsu et al., 2020).

The Cronbach's alpha of Sinhalese version ($\alpha = 0.85$) had a slightly lower value than that reported for the Italian ($\alpha = 0.87$), Bangla ($\alpha = 0.87$), United States ($\alpha = 0.91$), Romania ($\alpha = 0.88$), Turkish ($\alpha = 0.85$), India ($\alpha = 0.93$) and Arabic versions (Al-Shannaq et al., 2021; Soraci et al., 2020; Sakib et al., 2020; Stănculescu, 2021; Perz et al., 2020 & Satıcı et al., 2020). However, the Cronbach's alpha of FCV-19S both Sinhalese and Tamil versions ($\alpha = 0.878$) showed many similarities with the European (Italian, Romania), Middle East (South Arabia), American (US), Asian (Bangla), and transcontinental countries (Turkey).

Furthermore, RMSEA values above the desired cut-off value of 0.06 were identified (Tsipropoulou et al., 2020; Rosseel, 2012 & Winter et al., 2020). However, the following parameters were used to evaluate the goodness of fit: root mean square error of approximation ($RMSEA \leq 0.06$); comparative fit index ($CFI > 0.90$ or more preferably 0.95), and standardized root mean square residual ($SRMR \leq 0.08$) (Lei & Wu, 2007). However, the unidimensional model showed poor fit in the present study, and the bi-factor model showed more suitable fitting indices. The Sinhalese and Tamil versions of the FCV-19S displayed a two-factor model, and each category was named as “Physical outcomes of fear” (Items 3, 4, 6, and 7) and “Fear due to perception” (items 1, 2, and 5). The FCV-19S provides a clear insight into COVID-19 fear, and therefore, individuals at risk could be assessed using FCV-19S.

Even though the outcomes of the present study showed contrasting findings of confirmation of the instrument structure as found in previous studies (Satici et al., 2020, Tsipropoulou et al., 2020; Reznik et al., 2020; Bitan et al., 2020; Stănculescu, 2021; Sakib et al., 2020; Soraci et al., 2020; Al-Shannaq et al., 2021; DeVellis & Thorpe, 2021; Winter et al., 2020 & Ahorsu et al., 2020), it was successfully validated into the Sinhalese and Tamil versions. However, according to the findings, the seven-item FCV-19S in Sinhalese and Tamil appears to have adequate statistical and psychometric properties, making it ideal for large-scale Sri Lankan studies (i.e., epidemiological studies and randomized experimental design studies) to assess the presence of such cognitions of fear among the Sri Lankan population.

Comparing the present study results with the published Asian literature, the Chinese version of the FCV-19S (Chi et al., 2021) showed good internal consistency reliability ($\alpha = 0.92$) and a bi-factor structure of fear thoughts and physical response. These are similar results to the

present study. According to a Japanese study (Masuyama et al., 2020), the Japanese version FCV-19S had a bi-factor model with high reliability, comprising the emotional response factor and the physiological response factor (Items 1, 2, 4, and 5 - emotional: $\alpha = 0.71$; Items 3, 6, and 7 - physiological: $\alpha = 0.82$) while for the Sinhalese version and Tamil version both showed a bi-factor model of emotional outcomes of fear (Items 1, 2, 5 - Sinhalese version: $\alpha = 0.78$ and Tamil version: $\alpha = 0.803$) and physiological outcomes of fear (Items 3, 4, 6, and 7 - Sinhalese version: $\alpha = 0.86$ and Tamil version: $\alpha = 0.89$). This showed similar factors in emotional outcomes of fear with the emotional response factors in the Japanese version (Items 1, 2, and 5) and physiological outcomes of fear with the physiological response factors of the Japanese version (Items 3, 6, and 7). Furthermore, the present study showed higher reliability (Cronbach's α) than the Japanese bi-factor model of emotional and physiological responses. In addition, the present study's findings were consistent with Reznik et al.'s (2020) study, which used the Russian version of the FCV-19S in Russia and Belarus and the Norwegian version FCV-19S which also found a bi-factor model (Iversen et al., 2021). However, the present study showed a contrast on the factors included in the physical and emotional category compared to the Japanese study and Russian study because Item 4 ("I am afraid of losing my life because of COVID-19") was included in the physical outcome of fear category in the present study but was included in the emotional factor category in the other studies (Masuyama et al., 2020 & Iversen et al., 2021).

In the Greek version of FCV-19S, the cut-off score of 16.5 or higher was identified as the signs of predictive power of anxiety, health anxiety and posttraumatic stress symptoms (Nikopoulou et al., 2020). In the current study the mean fear value for Sinhala subgroup was 13.23 (SD $\pm$ 5.39) and 13.03 (SD $\pm$ 5.88) for the Tamil subgroup. In the Sinhalese subgroup

and Tamil subgroup the cut-off score of 16.5 or higher values were 21.2% and 20.7% respectively.

The results of correlation analysis performed to test for concurrent validity in the Sinhalese subgroup version showed that emotional outcomes of fear in the FCV-19S significantly correlated with physical outcomes of fear ($r = 0.57$) and the total score ($r = 0.90$) on the FCV-19S. The results of correlation analysis performed to confirm construct validity of the Japanese study (Masuyama et al., 2020) reported that emotional response in the FCV-19S significantly correlated with the physiological response ($r = 0.45$) and the total score ($r = 0.94$) in the FCV-19S. However, a higher correlation was observed in the emotional outcomes of fear with physical outcomes of fear in the Sinhalese subgroup.

Considering the Norwegian version FCV-19S, the internal consistency assessed using Cronbach's alpha was 0.88, a higher value than in the present study (Iversen et al., 2021). The Norwegian version reported a two-factor model (cognitive and somatic fear), which were highly correlated ($r = 0.84$). Furthermore, several previous studies have supported the bifactor model with a bidimensional structure representing physiological and emotional responses (Sakib et al., 2020 & Reznik et al., 2020). In addition, the Nigerian FCV-19S reported an internal consistency of 0.904 and a bi-factor model (Chia et al., 2021). The bi-factor model consisted of the emotional response category (Items 1, 2, 3, and 4) and physical response category (Items 5, 6, and 7).

In addition, the Sinhalese (0.573-0.846) and Tamil (0.638-0.855) subgroups had higher factor loadings. Even though factor loadings of the Bangla (0.72-0.80), Italian (0.688-0.897), and Norwegian (0.64-0.87) versions of the FCV-19S were greater than Sri Lankan versions, the

Israeli version (0.57-0.82) had factor loadings very similar to the Sri Lankan versions. This may be due to the small sample size and/or mean age of the Sri Lankan study (Sinhalese $n=146$, Tamil $n=140$, mean age= 26.23 ± 5.04) and the Israeli study ($n=639$, majority=30 years) compared to studies with larger sample sizes in China ($n=1700$, mean age=18.75, SD ± 8.78), Norway ($n=1063$, majority age=50-59 years), and Bangladesh ($n=8677$; mean age = 26.53 years, SD ± 9.09) (Bitan et al., 2020; Chi et al., 2021; Iversen et al., 2021; Sakib et al., 2020). However, it may be argued that in the event of a global pandemic, individuals of all ages feel threatened, resulting in a similarity in responding to questions.

Limitations

The present study has a number of limitations. It was an online survey and convenience samples were recruited through networks of the research team using social media (*Facebook* and *WhatsApp*). Therefore, there may be a chance of missing underprivileged populations who did not have facilities to access the online survey. All the data were self-report and are therefore subject to well-known methods biases (e.g., memory recall, social desirability, etc.). While the sample size was adequate for psychometrically testing a seven-item instrument, the sample size was much smaller than most previous validation studies. Furthermore, during the study period, the status of infection fluctuated, and infection trends differed by province. Furthermore, the unavailability of a validated K6⁺ in the Tamil language was another limitation and was especially translated for the present study.

Conclusions

Based on the psychometric evaluation, the present study demonstrated that the cross-culturally adapted Sinhalese and Tamil versions of the Fear of COVID-19 Scale are valid and reliable measurement tools for assessing the level of COVID-19 fear in the general Sri Lankan

population. Cross-cultural adaptation of the FCV-19 scale is important and allows mental health professionals to effectively deal with the mental health issues by identifying physical and emotional fears of individuals that have arisen as a result of the pandemic (Satici et al., 2020 & Bitan et al., 2020).

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Table 1. Demographic profile of the two participant sub-groups (N=286)

Demographic variable	Sinhalese Subgroup (Frequency/ Percentage) (n=146)	Tamil Subgroup (Frequency/ Percentage) (n=140)
Age (in years)		
18-29	121 (82.9%)	109 (77.9%)
30-41	24 (16.4%)	30 (21.4%)
42-53	1 (0.7%)	1 (0.7%)
Gender		
Male	26 (17.8%)	23 (16.4%)
Female	120 (82.2%)	117 (83.6%)
Marital status		
Single	110 (75.3%)	103 (73.6%)
Married	35 (24%)	36 (25.7%)
Divorced	1 (0.7%)	1 (0.7%)
Educational level		
Secondary Education	08 (5.5%)	20 (14.3%)
Diploma	41 (28.1%)	41 (29.3%)
Degree	92 (63%)	74 (52.9%)
Postgraduate (MSc, MPhil, PhD)	05 (3.4%)	05 (3.6%)
Employment status		
Unemployed	05 (3.4%)	07 (5%)
Employed	72 (49.3%)	69 (49.3%)
Student	69 (47.3%)	64 (45.7%)
Province		
Central	05 (3.4%)	05 (3.6%)
North Central	04 (2.7%)	02 (1.4%)
North- Western	11 (7.5%)	11 (7.9%)
Sabaragamuwa	10 (6.8%)	10 (7.1%)
Southern	30 (20.5%)	26 (18.6%)

Table 2. Descriptive statistics of the Sinhalese and Tamil versions of the Fear of COVID-19 Scale

Item	Subgroup	Mean	Standard Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	χ^2 p-value
I am most afraid of COVID-19	Sinhalese	2.99	1.308	26 (17.8%)	22 (15.1%)	51 (34.9%)	22 (15.1%)	25 (17.1%)	0.519
	Tamil	2.81	1.313	30 (21.4%)	25 (17.9%)	48 (34.3%)	16 (11.4%)	21 (15%)	
It makes me uncomfortable to think about COVID-19	Sinhalese	2.38	1.250	45 (30.8%)	39 (26.7%)	35 (24%)	15 (10.3%)	12 (8.2%)	0.760
	Tamil	2.27	1.251	49 (35%)	39 (27.9%)	28 (20%)	13 (9.3%)	11 (7.9%)	
My hands become clammy when I think about COVID-19	Sinhalese	1.24	0.668	124 (84.9)	13 (8.9%)	07 (4.8%)	0	02 (1.4%)	0.801
	Tamil	1.26	0.792	121 (86.4%)	09 (6.4%)	06 (4.3%)	0	04 (2.9%)	
I am afraid of losing my life because of COVID-19)	Sinhalese	1.68	0.975	85 (58.2%)	34 (23.3%)	20 (13.7%)	03 (2.1%)	04 (2.7%)	0.942
	Tamil	1.71	1.042	82 (58.6%)	31 (22.1%)	19 (13.6%)	02 (1.4%)	06 (4.3%)	

When I am watching news and stories about COVID-19 on social media, I become nervous or anxious	Sinhalese	2.32	1.323	51 (34.9%)	41 (28.1%)	26 (17.85)	12 (8.2%)	16 (11%)	0.982
	Tamil	2.30	1.334	51 (36.4%)	39 (27.9%)	22 (15.7%)	13 (9.3%)	15 (10.7%)	
I cannot sleep because I worry about getting COVID-19	Sinhalese	1.28	0.828	127 (87%)	06 (4.1%)	08 (5.5%)	01 (0.7%)	04 (2.7%)	0.905
	Tamil	1.31	0.898	121 (86.4%)	05 (3.6%)	08 (5.7%)	01 (0.7%)	05 (3.6%)	
My heart races or palpitates when I think about getting COVID-19	Sinhalese	1.34	0.905	121 (82.9%)	13 (8.9%)	04 (2.7%)	03 (2.1%)	05 (3.4%)	0.915
	Tamil	1.37	0.90	116 (82.9%)	11 (7.9%)	04 (2.9%)	03 (2.1%)	06 (4.3%)	

Table 3. Confirmatory factor analysis model fit indices values for Sinhalese and Tamil sub-groups for one factor model

Subgroup	Likelihood χ^2	<i>p</i> -value	CFI	TLI	RMSEA	SRMR
Sinhalese	56.809	<0.0001	0.836	0.754	0.205	0.094
Tamil	119.802	<0.0001	0.820	0.730	0.232	0.099

CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation. SRMR = Standardized Root Mean Square Residual

Figure 1

Sinhalese Subgroup: Exploratory Factor Tamil Subgroup: Exploratory Factor

Analysis model with Orthogonal Rotation Analysis model with Orthogonal Rotation

(Varimax)

(Equimax)