

## Emotional Fear of COVID-19 in Ivory Coast Schools

© 2024 Jean M. Gnahore \*,

\* PhD, Alassane Ouattara University (Bouaké, Ivory Coast),

e-mail: [digbeutij@gmail.com](mailto:digbeutij@gmail.com)

**Annotation:** The COVID-19 pandemic has had a profound impact on people's lives and has had a particularly negative impact on people's experiences related to the fear of contracting COVID-19. Several studies using exploratory factor analysis have suggested the existence of two factors: A) emotional fear and B) physiological manifestations of fear. In this paper, we aimed to confirm this factor structure using confirmatory factor analysis and examine how these two new FCV-19S factors explain the variability in the impact of COVID-19 across nine life domains. Participants were students (n = 385) from Ivory Coast schools. Results showed that the two-factor model fits the FCV-19S well, both subscales have excellent psychometric properties, and the emotional fear subscale significantly explains the variability in all nine life domains. However, the physiological fear subscale significantly explains the variability only in the physical health domain together with emotional fear (34%).

**Key words:** COVID-19, Ivory Coast Schools, Fear of COVID-19, Scale FCV-19S.

## Эмоциональный страх перед COVID-19 в школах Кот-д'Ивуара

© 2024 Жан М. Гнахоре \*,

\* доктор философии, Университет Алассана Уаттары (Буаке, Кот-д'Ивуар)

e-mail: [digbeutij@gmail.com](mailto:digbeutij@gmail.com)

**Аннотация:** Пандемия COVID-19 оказала глубокое влияние на жизнь людей и особенно негативное влияние на переживания людей, связанные со страхом заражения COVID-19. В нескольких исследованиях с использованием факторного анализа было заявлено о существовании двух факторов: А) эмоционального страха и В) физиологических проявлений страха. В этой статье мы стремились подтвердить эту факторную структуру с помощью подтверждающего факторного анализа и изучить, как эти два новых фактора FCV-19S объясняют изменчивость воздействия COVID-19 в девяти областях жизни. Участниками были учащиеся ( $n = 385$ ) из школ Кот-д'Ивуара. Результаты показали, что двухфакторная модель хорошо соответствует FCV-19S, обе подшкалы обладают превосходными психометрическими свойствами, а подшкала эмоционального страха в значительной степени объясняет изменчивость во всех девяти областях жизни. Однако подшкала физиологического страха в значительной степени объясняет изменчивость только в области физического здоровья вместе с эмоциональным страхом (34%).

**Ключевые слова:** COVID-19, школы Кот-д'Ивуара, страх перед COVID-19, шкала FCV-19S.

## **Introduction**

The COVID-19 pandemic has had a profound impact on the mental health of people across all populations (Isralowitz et al., 2020; Williams et al., 2022), and has particularly negatively impacted people's experiences related to fear and anxiety about contracting COVID-19 and the consequences of the COVID-19 pandemic (Reznik et al., 2022; Mauer et al., 2022; Warren et al., 2021). In response, researchers created and validated the COVID-19 Fear Scale (FCV-19S) to measure people's fear of COVID-19. The FCV-19S was originally created as a unidimensional measure, and many exploratory factor analyses (EFAs) have supported the univariate solution.

However, some EFAs have suggested two factors: 1) emotional fear and 2) physiological manifestations of fear. Both factors may contribute to mental health outcomes and correlate with anxiety, stress, and depression. Furthermore, other analyses of the FCV-19S have suggested that this scale may have a two-factor model consisting of specific factors (emotional and physiological fear) and a general factor (general fear). However, due to several studies suggesting a two-factor structure of the FCV-19S (Bottaro et al., 2022), we aim to confirm this factor structure using confirmatory factor analysis and then examine how these two FCV-19S factors explain variability in the impact of COVID-19 across multiple life domains.

It remains unclear in the literature how these new factors, emotional fear and physiological manifestations of fear, explain variability in the impact of COVID-19 across multiple life domains. However, multiple studies have shown that the unidimensional COVID-19 fear factor was correlated with multiple life domains impacted by the COVID-19 pandemic, including mental health, physical health problems, and work difficulties. It is possible that both emotional and physiological manifestations of COVID-19 fear may explain variability in the impact of COVID-19 on life domains. However, when controlling for the variability explained by each other, one of these factors may be the more important explanatory variable. In the current exploratory study, we first confirmed the new hypothesized two-factor and two-factor structures of the FCV-19S. We then presented descriptive statistics and construct validity for these new subscales. Finally, we tested whether these new subscales explain significant variability in the nine COVID-19 life domains measured by the Coronavirus Impact Domains Scale and examined whether previously reported associations between the FCV-19S and CIDS are driven by one or both of the new emotional and physiological fear subscales.

### **Method**

We assisted participants in completing the study via a website in spring 2022. Participants completed an informed consent document, a demographic survey, a

survey consisting of several measures of COVID-19 effects, and other measures not relevant to the current study.

The FCV-19S is a 7-item unidimensional measure of people's general fear of COVID-19. Participants rated items on a 5-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).

The COVID-19 Anxiety Scale is a unidimensional measure of anxiety about the COVID-19 pandemic. People rated five items on a 5-point scale ranging from "not at all" (1) to "almost every day" (5) over the past two weeks.

The CIDS is a multidimensional measure of the impact of the COVID-19 pandemic on people's lives. The scale measures nine domains containing six items each: (1) finances, (2) loved ones, (3) work, (4) safety, (5) school, (6) mental health, (7) physical health, (8) social activity, and (9) quality of life. Participants rated the extent to which each item applied to them on a 5-point scale, ranging from "not at all" (1) to "very applicable" (5).

### **Discussion and conclusion**

We conducted nine multiple regressions to test whether emotional fear or physiological fear explained variability in COVID-19 impact, with one multiple regression for each CIDS subscale as the dependent variable. All nine multiple regressions were significant,  $ps < .001$ , and although the emotional fear subscale significantly explained variability in all nine CIDS subscales, the physiological fear subscale significantly explained variability only in the physical health domain. This association between physiological fear and health was negative, suggesting that as physiological fear decreased, the impact of COVID-19 on an individual's physical health increased. The emotional fear subscale explained a significant portion of the variability across domains, ranging from 5% to 39%. In the current study, we confirmed the new hypothesized two-factor structure of the FCV-19S, which contains an emotional fear factor and a physiological expression of the fear factor. Our results further showed that the FCV-19S explained significant variability in the impact of

COVID-19 on people's lives. However, the emotional fear factor explained this significant variability, while the physiological expression of the fear factor explained significant variability only in the physical health domain. The results offer a nuanced perspective on the components of fear that are associated with the impact of the COVID-19 pandemic in different life domains.

We found that self-reported physiological fear only explained variability in the physical health subscale. This finding suggests that the physiological expression of fear does not explain variability in any other life domains except for a person's physical health, which was negatively associated; indicating that when people reported less physiological expression of fear, the impact of COVID-19 on physical health was greater overall. An explanation for this finding may be that the physiological fear subscale is only a physiological symptom of the emotional fear subscale (Bitan et al., 2020); physiological fear may not have the same impact on mental health and other behavioral domains of the CIDS. The negative association between physiological fear and impact on physical health may be present because less intense physiological fear may indicate less intense overall fear. Previous studies have shown that lower fear and vigilance about the pandemic may lead to subjectively reckless health behaviors, such as ignoring government policies or avoiding physical distancing during waves, thereby contributing to the higher impact on physical health in our study.

This study has several important implications. 1. The findings extend the recent research on the FCV-19S and confirm that it is a bifactor scale. Statistical analysis showed that the FCV-19S can be used as a multidimensional scale. 2. The study found that students experienced both emotional fear and physiological manifestations of fear. However, emotional fear explained more variability in the subjects' lives, indicating that emotional fear may be a useful focus when considering psychological treatments. 3. The study found that physiological fear only explained variability in the physical health domain of individuals, with a negative correlation. This finding suggests that the physiological fear subscale may be a symptomatic expression of the

emotional fear subscale, and this finding may help future researchers understand the relationship between the two FCV-19S subscales and their respective ability to explain variability in COVID-19 impact across life domains. We suggest that future researchers may consider extending our study to confirm the factor structure of the FCV-19S with a more heterogeneous sample and examine the longitudinal effects of COVID-19 fear on the causal effects of COVID-19 fear across life domains. Finally, researchers may consider exploring how to mitigate COVID-19 fear to limit the impact of COVID-19 on people's lives. Our study confirmed the novel two-factor structure of the FCV-19S and examined how the FCV-19S explains the variability in the impact of COVID-19 across life domains. The results showed that the FCV-19S is a multidimensional scale in which emotional fear explains the variability across life domains and physiological fear explains the variability in the physical health domain only. This study is the first to conduct a confirmatory factor analysis of the FCV-19S with a sample from Ivory Coast and examine how the two subscales may differentially explain the variability in the impact of the COVID-19 pandemic on students' lives.

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