

Civil protection dimensions of risks in the COVID-19 era

Elías Alexander Vallejo Montoya¹, Cruz García Lirios^{2*}, Víctor Hugo Meriño Córdoba¹, Héctor Enrique Urzola Berrio³

¹Universidad Católica Luis Amigo

²Universidad Autónoma de la Ciudad de México

³Universidad Antonio José de Sucre

*Correspondence Author: Cruz García Lirios, Department Social Work, Uaemex.

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Abstract

Civil protection has been weighted from objective scales. In the COVID-9 era, the subjective dimension explains the trust between the parties involved. The present work used the subjective version of civil protection in the face of the pandemic. Therefore, the objective of the study was to validate the scale to be able to contrast the hypothesis of differences between the theoretical structure with respect to the empirical test of the present work. A cross-sectional, psychometric and correlational study was carried out with a sample of students selected for their academic training and work area. The results confirm two of the three theoretical factors, although the validity and the percentage of explained variance point out the hegemony of the dimension of stigma towards authorities. When comparing the results with the state of the art, the convergence between the studies of stigma is noted, but the inclusion of variables and indicators related to trust is suggested in order to extend the model, the constructs and the reagents for the empirical demonstration.

Keywords: covid-19; reliability; factorial model; civil protection; validity

Introduction

Civil protection plays a fundamental role in risk management and in the response to the COVID-19 pandemic (Di Lorenzo & Di Trollo, 2020). COVID-19 is an infectious disease caused by the SARS-CoV-2 virus and has been an unprecedented global crisis that has affected all levels of society and posed significant challenges to public health, the economy, and the social welfare. Civil protection is the organizational structure and the set of measures established by governments and competent authorities to protect the population and property in disaster or emergency situations. In the context of COVID-19, civil protection has played an essential role in coordinating and executing measures to prevent the spread of the virus, protect the vulnerable population and maintain the operation of essential services.

Some of the key civil protection actions against COVID-19 include:

1. Planning and coordination: Civil protection has been responsible for preparing response plans and inter-institutional coordination to address the pandemic, establishing clear roles and responsibilities for different actors (Morettini et al., 2020).
2. Information and communication: Civil protection has worked to disseminate updated and reliable information on COVID-19, including preventive measures, health recommendations, and changes in restrictions or regulations (Scharte, 2021).

3. Establishment of medical care centers: Civil protection has collaborated in setting up additional medical care centers, such as field hospitals, to deal with the increase in cases and guarantee adequate care (Roncone et al., 2021).

4. Distribution of resources and supplies: Civil protection has been responsible for distributing personal protective equipment (PPE), diagnostic tests, ventilators, and other necessary medical supplies to health workers and patients (Olimid & Olimid, 2022).

5. Coordination of the emergency response: Civil protection has worked with other government agencies, health organizations and volunteers to coordinate efforts and guarantee a comprehensive and effective response (Roth et al., 2022).

6. Support for vulnerable groups: Civil protection has paid particular attention to the most vulnerable groups, such as the elderly, people with disabilities and disadvantaged socioeconomic sectors, to ensure that they receive the necessary support and care (Firza & Monaco, 2022).

It is important to highlight that the COVID-19 pandemic has been an unprecedented challenge for civil protection systems around the world (Maiorano et al., 2020). It has required a coordinated, rapid and flexible response to face the evolution of the situation and protect the health and well-being of the population. As more has been learned about COVID-19, civil

protection strategies have evolved to adapt to new scientific information and changing conditions.

The organizational structure of civil protection is that revealed by the division of Comprehensive Disaster Risk Management (GIRD). In this sense, the organizational hierarchy around decision-making in the face of disaster risks (Sangiorgio & Parisi, 2020). It is appreciated that, because of a crisis, the Civil Protection Directorate emerges as a response to the event of disaster risk. In this sense, the underlying commissions support the strategies and instruments to reduce the impact of disruptive agents.

The administrative scale of the resources is essential to achieve the GIRD (Katsikopoulos, 2021). The lack of budget in the sectors in charge of reducing disaster risks, as well as influence peddling or nepotism that distinguishes the dependencies, impacts the strategies that arise within them and as a result of personal initiatives.

The problems derived from the lack of budget are connected to the problems of corruption within institutions in charge of the rights and guarantees of citizens (Holt et al., 2022). This is the case of the local CDMX police who are in collusion with a private ambulance transfer service subsystem. In other words, the problem revolves around the increase in disaster risks due to the increase in population since these are socially constructed, as well as the corruption of the institutions in charge of diagnosing, evaluating, reducing and rebuilding the areas affected by disasters. disaster risks. In this way, the culture of risk prevention as a factor for saving resources and channeling them to communities and sectors whose environmental rights are violated is the central axis of the administrative and civil protection agenda regarding the risks associated with the pandemic.

The Civil Protection Scale is a tool used to measure the level of risk or emergency in the face of an adverse event, such as natural disasters or crisis situations, and thus allow better coordination of response and protection actions of the population (Fattorini & Regoli, 2020). This scale can vary depending on the country and the specific civil protection system but is generally based on a set of levels or categories that indicate the severity of the event. Low Risk Level (Green): Indicates that there is no immediate danger and that the situation is under control (Michail et al., 2022). An emergency response is not required, but prevention and surveillance measures are maintained.

Moderate Risk Level (Yellow): Means that there is a potential risk and additional precautions should be taken (Pagano et al., 2020). It may be necessary to activate contingency plans and maintain vigilance for possible developments. High Risk Level (Orange): Indicates that the risk is significant and that significant impacts are expected (Comfort et al., 2020). It is probable that emergency plans are activated and measures are taken to protect the population and property.

Very High-Risk Level (Red): It means that a major emergency or disaster has occurred and that an immediate and coordinated response is required (Motta et al., 2020). Resources are mobilized and all civil protection protocols are activated to deal with the situation.

It is important to consider that each country may have its own scale of civil protection adapted to its reality and specific risks (Gualano et al., 2021). Additionally, colors and levels may vary by region or jurisdiction. The civil protection scale serves as a guide for decision-making and coordination of actions to protect the population and minimize the impacts of adverse events.

However, civil protection has not been measured from its subjective dimensions. The objective of this work was to establish the reliability and validity of the Subjective Civil Protection Scale.

Method

An exploratory, cross-sectional and psychometric study was carried out with a sample of 100 students ($M = 29.34$ DE = 4.56 age and $M = 9'985.28$ DE =

562.3 USD per month) from the area of social sciences with postgraduate training and professional and work experience.

The Subjective Civil Protection Scale was used, which includes three dimensions related to stigma towards risk communication, the usefulness of public services and the capacity of health professionals (Goniewicz et al., 2020). Each item includes five response options ranging from 0 = "not at all satisfactory" to 5 = "quite satisfactory". The reliability of the scale reached values higher than the minimum acceptable threshold of .60 and the validity higher than the permissible factorial weight of .300.

The respondents were contacted through their institutional emails (Lastrucci et al., 2021). They were informed of the objectives and people responsible for the project. The confidentiality and anonymity of the responses and the non-affectation of their institutional and employment status are guaranteed in writing. The homogenization of the concepts was established through focus groups of 10 participants. The standardization of the reagents was established using the three-phase Delphi technique qualification, comparison and reiteration or modification.

The data was processed in Excel and JASP version 14. The reliability, adequacy, sphericity, validity, fit, and residual coefficients were estimated (Gerhold, 2020). Values close to unity were interpreted as evidence of non-rejection of the null hypothesis regarding the significant differences between the theoretical structure and the one observed in the present work.

Results

The reliability reached alpha and omega values between 0.622 and 0.713, although the values removing the items ranged between 0.601 and 0.651. The adequacy values (Kayser Meyer Olkin) oscillate between 0.314 and 0.749, which indicates that the sample is relevant for the analysis of the dimensions established in the theory. The sphericity values suggest that the sample may also be representative for multivariable analyzes [$X^2 = 201.235$ (36 gl) $p = .001$]. In the case of the number of dimensions, the eigenvalues indicate a maximum allowable value, as well as the perceived civil protection theory.

The empirical test of the model was established once the factorial weights ranged between 0.411 and 0.973 for the first factor. In the case of the second factor, the values oscillated between 0.458 and 0.722, the third factor being demonstrated with relationships from 0.429 to 0.545. Thus, the first factor explained 23% of the total variance, the second reached 11% and the third 0.90%. These results indicate that the theory of perceived civil protection is consistent with the first factor related to risk communication stigma, but not consistent with the theoretical dimensions of the utility of public services and the capacity of health professionals. In order to empirically test these findings, a confirmatory test was carried out with 90 students. The results show associations between the first and second factors, but only the first factor included the minimum indicators of construct validity.

The fit and residual parameters [$X^2 = 25.551$ (12 gl) $p = 0.012$] suggest non-rejection of the hypothesis regarding the significant differences between the theoretical structure of three components and the empirical observations of this work.

Discussion

The contribution of this work was to establish the factorial structure of three components of the civil protection of risks in the face of the pandemic. In relation to the state of the art where three factors related to stigma towards health authorities (Fois et al., 2021), the usefulness of public services (Gallo and Trompetto, 2020) and the capacity of health professionals are noted. (Sanchez et al. 2022) the present work found the prevalence of the first dimension. In other words, the risk communication of COVID-19 is assumed as a strategy of distrust between the authorities regarding the hearings. The

extension of the study towards the inclusion of satisfaction with the dissemination of the health crisis is recommended.

The limits of the work refer to the inclusion of dimensions and indicators related to trust between authorities and users of public health services. In this sense, organizational studies warn that distrust of authorities is transferred to health professionals (Laciano et al., 2020). In the present work, the factor that measures the perceived capacity of health workers was rejected due to the insufficient number of indicators.

Another limit of the work is related to the sample made up of students. In the literature review, the students participate in the development of the instrument, but in the present work the respondents were participants in both reliability and validity. In this way, the increase in items will make it possible to expand the dimensions of analysis and the total variance explained.

Conclusion

The objective of this study was to establish the reliability and validity of an instrument that measures perceived civil protection against COVID-19. The results show that the theoretical structure can be contrasted, although the number of indicators must be increased in order to increase the variance and find the three predominant factors reported in the literature. Precisely, the limits of the work are found in the reliability, although the validity only demonstrated two factors, one of which did not reach the minimum number of indicators. Therefore, it is recommended to increase the sample and the reagents in order to be able to demonstrate the theoretical structure.

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