

# Quality of life of a group of Ecuadorian health professionals in covid-19

*Calidad de vida de un grupo de profesionales de salud ecuatorianos en covid-19*

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## Abstract

**Introduction:** Covid-19 was the cause of a pandemic that claimed thousands of human lives. The pandemic has caused health professionals mental health problems that influence emotional, psychological and social well-being, which affects the way they think, feel and act in daily life. **Objective:** To determine the quality of life of health personnel during the Covid-19 pandemic in public institutions in the city of Cuenca. **Material and methods:** Descriptive, cross-sectional and observational study. The study sample was 338 health professionals belonging to the Ministry of Public Health of the Canton Cuenca, province of Azuay - Ecuador, doctors, nurses, dentists, psychologists, assistants and biochemists who work at different levels of care were included. Two WHOQOL surveys and the Lazarus and Folkman scale of coping modes were used, for the tabulation of the data the RStudio statistical program was used. **Results:** In the psychological domain, no significant destructuring was found in the personnel studied. In the field of health, it should be noted that the personnel studied reported the inability to carry out the activities they need and the difficulty in moving from one place to another. **Conclusions:** When investigating the relationship of health personnel with the environment, no statistically significant alteration was found, but it was evidenced that social support is a protective factor for the mental health of personnel.

**Keywords:** Quality of life, Covid-19, Health Personnel, Health Personnel.

## Resumen

**Introducción:** El Covid-19 fue el causante de una pandemia que cobró miles de vidas humanas. La pandemia a causado en los profesionales de salud problemas en su salud mental que influye en el bienestar emocional, psicológico y social, que afecta a la forma de pensar, sentirse y actuar en el diario vivir. **Objetivo:** Determinar la calidad de vida del personal de salud durante la pandemia Covid-19 en las instituciones públicas de la ciudad de Cuenca. **Material y métodos:** Estudio de tipo descriptivo, transversal y observacional. La muestra de estudio fue 338 profesionales de la Salud pertenecientes al Ministerio de Salud pública del Cantón Cuenca, provincia del Azuay - Ecuador, se incluyeron médicos, enfermeras/os, odontólogos, psicólogos, auxiliares y bioquímicos que laboran en los diferentes niveles de atención, se utilizó dos encuestas WHOQOL y la escala de modos de afrontamiento de Lazarus y Folkman, para la tabulación de los datos se usó el programa estadístico RStudio. **Resultados:** En el dominio psicológico no se encontró una desestructuración importante en el personal estudiado. En el ámbito de la salud cabe recalcar que el personal estudiado refirió la incapacidad para realizar actividades que necesita y la dificultad para desplazarse de un lugar a otros. **Conclusiones:** Al indagar la relación del personal de salud con el entorno no se encontró una alteración estadísticamente significativa, pero se evidencio que el apoyo social es un factor protector para la salud mental del personal.

**Palabras clave:** Calidad de vida, Covid-19, Personal de Salud, Personal Sanitario.



Covid-19 was the cause of a pandemic that claimed thousands of human lives, even so, 80% of cases were mild, between 13% and 16% severe cases, 6% critical cases and 3% lethal. In order to curb contagion in the population, measures such as quarantine and curfew were necessary. At the beginning, it was said that it affected mostly the vulnerable population; however, in countries such as Ecuador, cases of young patients with no additional pathologies who died from the virus were identified, knowledge about the COVID 19 virus was null due to its recent appearance, and its pathophysiology and treatment was uncertain. The systemic behavior was very variable from one person to another, with greater affection in the elderly population, patients with comorbidities and immunosuppressed patients. However, in Ecuador, a prolonged quarantine was implemented for the general population, as an attempt to control contagion and the need to impact morbidity and mortality due to this cause. The COVID 19 virus appears to have an impact on the health of the population worldwide and the consequences of this pandemic in the population on the quality of life in general in the long term are not yet known<sup>1</sup>.

The transmission mechanism is from a contaminated person to a healthy person by means of saliva in aerosols and droplets. As a preventive measure, the general population was asked to use masks, hand hygiene with alcohol, frequent hand washing, social distancing of at least 2 meters, prohibition of social gatherings, food disinfection, healthy balanced diet to strengthen the immune system. All procedures were carried out to prevent the spread of the COVID 19 virus, as a function of health promotion and disease prevention in the population<sup>2</sup>.

The symptoms and complications due to the COVID 19 virus were systematic and changing in each person, the most common associated to the respiratory system with: cough, dyspnea, fever. Other manifestations such as: anosmia, headache, dermatological symptoms, urological symptoms, Kawasaki syndrome are atypical symptoms in this pathology<sup>2</sup>. The sequelae of this pathology on the other hand are very uncertain, some patients did not present, in others they manifested critically at pulmonary, cardiovascular, neurological and psychological levels. The fear in the general population due to the inefficiency of the Health System that was not prepared to fight this pandemic required policies and emergency protocols that were not sufficient to face the magnitude of the public health problem at international level. The deterioration of the functional capacity of patients due to symptoms and complications had a negative impact on their quality of life<sup>3</sup>.

The pandemic has caused millions of health professionals mental health problems that influence their emotional, psychological and social well-being, affecting the way they think, feel and act in their daily lives; it also determines how they handle situations that affect the physical, psychological and spiritual well-being of health professionals. Work overload, lack of personnel, extended schedules are the cause of increased psychological risk such as depression, anxiety, frustration and fear of health personnel. The fear of health personnel due to lack of human resources, infrastructure and supplies added to the wave of ill-

ness and death was the cause of the deterioration of mental health and quality of life of this population<sup>4</sup>.

According to Torres-Muñoz V, Farias-Cortés JD, Reyes-Vallejo LA G-D-BC, in the year 2020, carried out in the country of Mexico, in the Fundación Clínica Médica Sur a bibliographic review was conducted on the mental state of health personnel in times of pandemic; the results obtained from the collection of information indicate a possible presence of anxiety, stress, fatigue; It is necessary to pay attention to these emotional states, which may represent alterations in mental health; in this way it will be possible to classify and act in time avoiding damage to third parties in the care and deterioration or recovery in the quality of life of health personnel and their families<sup>5</sup>.

In the research of Ferreira do Nascimento et al, in 2020, conducted in Brazil, they measured the difficulties and fears of nurses facing the COVID-19 pandemic. They identified, as results, the difficulties presented by the nurses that occur due to the precautions with the health of the community (the family and the patients themselves). There is little concern for themselves, in relation to the understanding of their individual health and the value of their lives, even with changes in the work routine, assuming specific care. The high work overload due to the pandemic affected the mental health of these professionals<sup>6</sup>. The research by Koppmann A, Cantillano V, Alessandri C, carried out in Chile, at the Las Condes clinic, describes concepts and factors associated with stress presented by health professionals in the face of COVID 19, and proposed evaluation methods as a strategy for the detection and adequate management of work fatigue in health personnel<sup>7</sup>.

From another point of view, quality of life can be understood as employee satisfaction, the absence of illnesses and the complete well-being of the personnel; from another point of view, it is a concept that encompasses objective and subjective indicators with the purpose of meeting the goals of the companies without causing harm to the employee<sup>8</sup>. According to the World Health Organization (WHO), health is the complete physical, psychological and social well-being, where it is considered that health is a fundamental right and it must have optimal conditions and resources for its good development and thus achieve the satisfaction and fulfillment of the person in the different areas to achieve an optimal quality of life<sup>9-11</sup>.

During the COVID-19 pandemic, health personnel presented alterations in the quality of life manifested by nervousness in 70%, fatigue in 80%, due to this, health personnel requested the increase of occupational specialists in 52% to reduce the indicators of work overload, poor working conditions, or poor management of emotions in confinement<sup>10</sup>. The lack of family support, family rejection, poor use of social networks predisposed health personnel to a negative attitude, increasing anxiety by 40%, 20% depression and stress associated with the fear of catching the disease and infecting those closest to them, Another factor that influenced the health personnel was the post-traumatic stress of the personnel, for which the creation of protocols, guidelines, telemedicine and protection measures reduced somewhat the anxiety of the personnel in the face of working hours, overload of functions, among others<sup>11,12</sup>. The

factors associated with a poor quality of life presented by health personnel were sedentary lifestyle, alcohol consumption, smoking, poor diet due to lack of time or confinement, which led to chronic diseases or their exacerbation<sup>13</sup>.

This research was conducted with the objective of identifying the quality of life of health personnel during the Covid-19 pandemic in public institutions in the city of Cuenca. With the study of variables such as: age, sex, area of rotation, work zone. And variables of the study such as: type of vaccine against COVID19, number of times they were infected by COVID 19, perception of physical, psychological and environmental health, and other variables such as interpersonal relationships.

## Methodology

A descriptive, cross-sectional and observational study was carried out prior to the authorization of an ethics committee in human beings. The study population consisted of health professionals belonging to the Ministry of Public Health (MSP) of the canton of Cuenca, province of Azuay - Ecuador, health professionals working at different levels of care, who wished to participate voluntarily and signed the informed consent form, were included in this study. Professionals who could not take part in the study due to personal or health reasons were excluded. The sample was probabilistic, and the sampling technique used was proportional allocation, the sample size was calculated with the percentage formula for a finite population ( $n = 2836$ ), confidence level of 95% ( $Z \text{ alpha} = 1.96$ ), power of proof 12% (0.12) and precision 5% (0.05) being composed of 181 participants. The technique used was the online survey through Google Drive, an optimal tool considering the difficulty of collecting information in environments where there is limited access to the study population. The WHOQOL instrument was included as a data collection instrument, it contains twenty-six questions in total; which includes one of global Quality of Life and another of general health and 24 questions related to different domains: Physical (Facets: Pain and Discomfort, Energy and Fatigue, Sleep and Rest), Psychological (Facets: Positive and Negative Feelings, Body Image, Self-Esteem and Thinking, Learning, Memory and Concentration), Social Relationships (Facets: Personal Relationships, Social Support and Sexual Activity), and Environment (Facets: Physical Safety, Home Environment, Environment (Physical, Transportation). In addition, socio-demographic variables such as age, sex, area, type of vaccine and number of infections were established. The variables of the WHOQOL instrument were analyzed according to their nature, using measures of central tendency and dispersion for quantitative variables and frequencies of presentation for categorical variables. Data analysis was performed using the freely available R statistical program.

## Results

Table 1 shows the distribution of the health personnel of the Ministry of Public Health (MOH) according to sociodemographic characteristics, where a mean age of 23-25 years was observed, a minimum age of 20-22 years and a maximum age of 25 years, it was also determined that, of the total population, 82.9% was female, with regard to the place of work, 57.5% was in the urban area, and 58.6% was in the hospital area.

**Table 1. Distribution of the study population according to sociodemographic variables.**

VARIABLE		FREQUENCY	PERCENTAGE
AGE	AGE 20-22	44	24,3
	AGE 23-25	91	50,3
	AGE OVER 25	46	25,4
	TOTAL	181	100,0
SEX	MAN	31	17,1
	WOMAN	150	82,9
	TOTAL	181	100,0
ZONE	URBANA	104	57,5
	RURAL	77	42,5
	TOTAL	181	100,0
ROTATION AREA	COMMUNITY	75	41,4
	HOSPITALARY	106	58,6
	TOTAL	181	100,0

Regarding the type of vaccine used by the health personnel, the highest proportion was Pfizer with 38.7%, followed by Sinovac with 32.6%, and the lowest proportion was the Moderna vaccine with 0.6%. Regarding the number of infections among the personnel, 40.3% had been infected at some time, followed by 33.7% who had never been infected (Table 2).

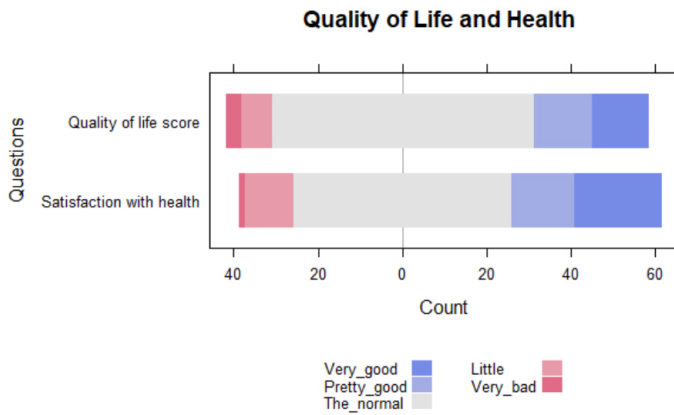
**Table 2. Distribution of the study population according to the vaccine applied.**

VARIABLE		FREQUENCY	PERCENTAGE
VACCINE APPLIED	ASTRA ZENECA	49	27,1
	MODERNA	1	0,6
	NINGUNA	2	1,1
	PFIZER	70	38,7
	SINOVAC	59	32,6
	TOTAL	181	100,0
NUMBER OF CONTAGIONS	1 TIME	73	40,3
	2 TIMES	34	18,8
	MORE THAN 2 TIMES	13	7,2
	NONE	61	33,7
	TOTAL	181	100,0

In the quality-of-life items issued to the health personnel in the study, in response to the question How would you rate your quality of life, the personnel responded 62.4% normal followed by 13.8% not very good. As for the question "How satisfied are

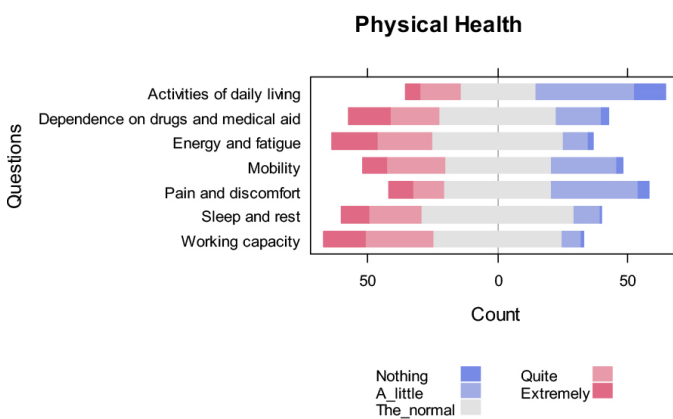
you with your health? 51.9% responded that it is normal, followed by very bad 20.4% (Figure 1).

**Figure 1. Distribution of the reagents issued by the health personnel according to the perception of life-health.**



In the reagents issued of physical health in health personnel in the study respond to the question to what extent do you think the pain prevents you from doing what you need to do, the staff responds 38.1% a little, followed by 29.3% the normal, regarding the question How much do you need any medical treatment to function in your daily life? They answer normal by 45.3%, followed by quite a lot by 18.8%, regarding the question Do you have enough energy for your daily life? Respondents answered 50.8% as normal, 21% quite a lot and 17.1% exaggeratedly on the question Are you able to move from one place to another? Respondents indicate normal by 40.9%, 25.4% indicate a little, regarding How satisfied are you with your sleep? They respond that it is normal 41.4%, a little 33.1%. The question How satisfied are you with your ability to perform your daily living activities? They indicate that 58.6% feel normal, 20.4% feel fairly satisfied. Regarding How satisfied are you with your ability to work? 49.7% feel normal, followed by 26% feel quite satisfied (Figure 2).

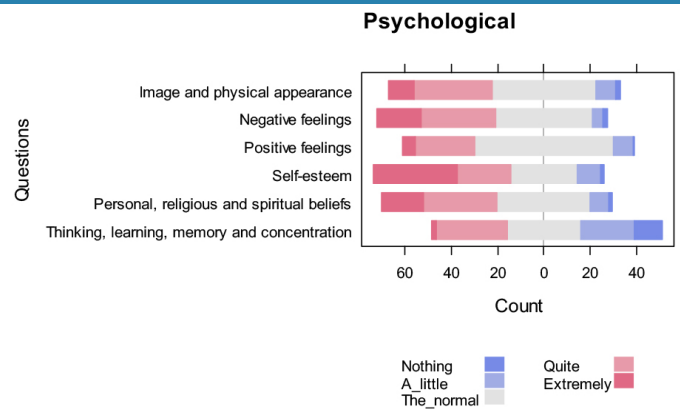
**Figure 2. Distribution of the reagents issued by the health personnel according to the perception of physical health.**



In the psychological health of the health personnel in the study, in response to the question "How much do you enjoy life?", the personnel answered 44.8% enjoy life normally, followed by 33.7% enjoy life quite a lot, and to what extent do you feel that your life has meaning? They answer 42% that their life has meaning, and 32% feel that life has a lot of meaning, in relation to the question "What is your ability to concentrate? Respondents answered that their level of concentration is normal, 25.4% indicated that it is quite good. Respondents indicate 28.7% is normal and 23.2% is quite a lot, regarding How satisfied are you with yourself? They answer that it is normal in 40.3%, quite a lot in 32%. The question How often do you have negative feelings, such as sadness, hopelessness, anxiety, depression? They indicate that 32% feel normal, 30.4% feel quite satisfied (Figure 3).

In the survey, 49.7% feel normal and 22.7% feel quite satisfied with their personal relationships, and in the question "How satisfied are you with your sex life", 48.1% feel normal and 12.7% feel quite satisfied. They answer that 48.1% feel normal and 12.7% feel quite satisfied, in relation to the question How satisfied are you with the support you get from your friends? They answer that 49.2% feel normal and 22.1% are quite satisfied (Figure 4).

**Figure 3. Distribution of the reagents issued by health personnel according to psychological perception.**



**Figure 4. Distribution of the items reported by the health personnel according to the perception of the interpersonal relationship**

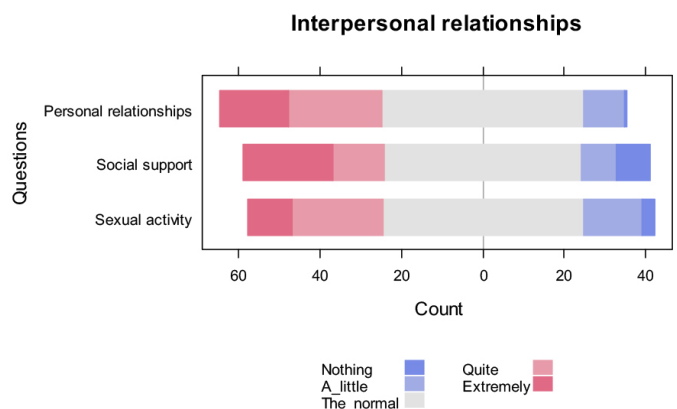
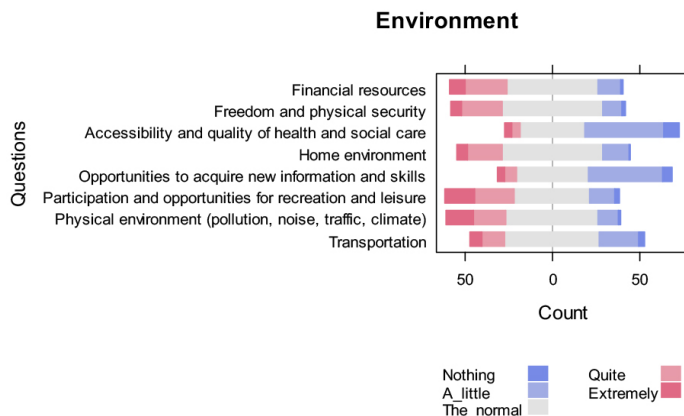


Figura 5. Distribución de los reactivos emitidos por el personal de salud según la percepción del entorno.



In the survey, the responses of the health personnel to the question “How safe do you feel in your daily life? They indicate that 51.9% feel normal, 24.3% quite satisfied, according to the question How healthy is the physical environment around you? They indicate that 58% feel normal, 23.2% are quite satisfied, similarly in relation to the question Do you have enough money to cover your needs? They answer that 37% feel normal, 8.8% feel as if nothing. In relation to the question “How available is the information you need in your daily life? They answer that 58% feel normal and 19.9% are quite satisfied, as well as to what extent do you have the opportunity to engage in leisure activities? Respondents say that 40.9% feel normal and 7.2% are quite satisfied, and to what extent are you satisfied with the conditions of the place where you live? They answer that 43.1% feel normal and 23.2% are quite satisfied and how satisfied are you with the access you have to health services? They answer that 53% feel normal and 18.8% are quite satisfied, likewise in relation to How satisfied are you with your transportation? They respond that 54.1% feel normal and 22.7% are somewhat satisfied (Figure 5).

## Discussion

In the study by Pires, Bosco, Nunes, de Almeida, Lemos, Ferrão, et al. describe in terms of gender, the overall average quality of life score was higher in men (68.0) than in women (65.7). In terms of domains, there was no difference between the sexes; in both, the environmental domain score was the most compromised and the psychological domain (self-esteem, body image, appearance, feelings, etc.) was the least affected. The psychological aspect is usually reported as the most compromised, both in studies with the general population and with health professionals. However, regardless of gender, the environmental domain (related to home environment, economic resources, leisure, physical environment) was the most compromised in this study<sup>14</sup>. In this study, there was no significant sample in the psychological domain.

In this study no significant difference was found in the quality of life between men and women; it was found in the environment domain that only 24.3% are quite satisfied with the security they feel in their daily life followed by 51.9% who feel normal; with respect to whether they have enough money to cover their needs, 37% feel normal, which is a low percentage. Regarding the opportunities for leisure activities, 40.9% of the participants feel normal, only 7.2% are quite satisfied, with a high rate of personnel satisfied with their leisure activities. As a contribution to the above, the need for a more careful and detailed look at the factors that affect QOL in the health personnel's environment domain, post-covid-19, stands out, since, in the face of this pandemic, much more support is required from the environment, which can, in the long term, generate well-being for health personnel in relation to home, leisure, and economic resources.

In the study, a higher prevalence of people in urban areas than in rural areas was found. In the interpersonal relationship items, the participants were quite satisfied and felt normal in their personal relationships, satisfaction with their sexual life and with the support of friends. In a study conducted in the oncology area during the COVID 19 pandemic, they found that in hospital areas the staff had a higher level of burnout than in out-of-hospital areas. They describe in the theme main problems in the workplace finding less contact with people; in patient care greater patient needs/anger in the face of the pandemic; and health those investigated refer concern for personal or family health/fear of COVID-19. The most common stressors respondents reported experiencing at home due to COVID-19 also included 3 main themes: health isolation/loneliness, family and children with school online/homeschooling, and financial job insecurity. They concluded that pandemic-related stressors for health care workers were found<sup>15</sup>.

When measuring the quality of life in health personnel in this study 13.8% considered that it was little and 62.4% normal and 20.4% reported being very bad in their health satisfaction associated with 38.1% referring a little interference to perform what they need, 25.4% little in their ability to move from one place to another, 33.1% are little satisfied with their sleep, Grelher, Guerin, Levavasseur, Caillot, Benichou, Caron. In their study they highlight the overall high resilience of hospital health care

workers during the first wave of COVID-19, with only a slight decrease in reported professional quality of life (-0.4 points on average) compared to the marked drop in their personal quality of life. life (-1.7 points on average). However, while physicians reported not being greatly affected by the COVID-19 crisis in their professional quality of life, nurses expressed more suffering. This socio-professional hierarchy was clearly delineated in the multivariate analysis. They conclude that younger age and nursing occupation increase the risk of adverse psychological outcomes, while a managerial role and receiving social support from peers or family members reduce it<sup>16</sup>.

The lack of knowledge of the origin, the consequences and the lack of guidelines in the treatment of COVID 19, generated fear in health personnel in the face of the uncertainty of the future of the world's population. In the worst moments of the pandemic, front line personnel, called all workers in COVID areas, were faced with the dilemma of fulfilling their duties in the face of the fear of losing their lives due to the high risk of contagion and the progressive increase in the mortality rate. The hope of reducing morbimortality due to the virus was placed in the vaccine. In our study we found a 63.3% infection rate and only 1.1% were not vaccinated. Arribas-García et al.<sup>17</sup>. In their study, they recommend permanent motivation, support from authorities and continuous education to improve the quality of life of the personnel. Similarly, a psychological support protocol was needed to improve the satisfaction of daily needs and communication for the well-being of the personnel, with the elaboration of permanent edu-communicational material for health officials and to establish assertive communication among them<sup>18,19</sup>.

## Conclusions

In the psychological domain, no significant destructuring was found in the personnel studied; however, it should not be ignored that some signs and symptoms that endanger the health and integrity of the health personnel may occur in late stages; it is important to follow up the health workers as health processes and occupation control.

In the area of health, it should be emphasized that the personnel studied reported the inability to perform activities they need and the difficulty in moving from one place to another; it would be important to identify the factors that interfere with these activities and intervene in a future study to improve the quality of life of the health personnel and the quality and warmth of patient care.

When investigating the relationship of health personnel with the environment, no statistically significant alteration was found, but it is necessary to emphasize that working conditions and remuneration generate a better quality of life for health personnel; increasing job satisfaction, self-esteem and resources to establish a more solid personal life to face stressful situations in extraordinary cases such as a pandemic.

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