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Original Article

Safety of healthcare professionals during COVID-19 in emergency and urgent care services: an exploratory study

Segurança dos profissionais de saúde na COVID-19 em serviços de urgência e emergência: estudo exploratório

Seguridad de los profesionales de la salud ante la COVID-19 en los servicios de urgencias y emergencias: estudio exploratorio

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ABSTRACT

Objective: To assess the perception of safety among healthcare professionals working in the Emergency Care Unit and the Mobile Emergency Care Service during the COVID-19 pandemic. **Method:** A cross-sectional, descriptive study conducted between 2022 and 2023 with 28 healthcare professionals. The validated instrument Questionnaire on Health Professional Safety in the COVID-19 Pandemic (QSP COVID-19) was used to evaluate perceived safety across organizational, emotional, professional, and structural dimensions. A score ≥ 75 was considered a positive perception. **Results:** The perception of safety was rated positively by 50% of the Mobile Emergency Care Service professionals and 37.5% of the Emergency Care Unit professionals. The professional dimension received a positive evaluation from 75% of participants in both services. In the other dimensions, positive perceptions among Emergency Care Unit and Mobile Emergency Care Service professionals were, respectively: emotional (56.3% vs. 58.3%), structural (31,3% vs. 58,3%), and organizational (50% vs. 41,7%). **Conclusion:** Despite the convenience sample, the findings highlight challenges that call for interventions to strengthen healthcare professionals' safety.
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DESCRIPTORS:
Working Conditions; Safety Management; Health Personnel; Emergency Medical Services; COVID-19.

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RESUMO

Objetivo: Avaliar a percepção da segurança do profissional de saúde da Unidade de Pronto Atendimento e do Serviço de Atendimento Móvel de Urgência no enfrentamento da pandemia de COVID-19. **Metodologia:** Estudo transversal, descritivo, realizado entre 2022 e 2023, com 28 profissionais de saúde. Utilizou-se o instrumento validado "Questionário de Segurança do Profissional de Saúde no Enfrentamento da Pandemia de COVID-19" (QSP-COVID-19), que avalia a percepção de segurança nas dimensões organizacional, emocional, profissional e estrutural. Considerou-se percepção positiva a pontuação ≥ 75. **Resultados:** A percepção da segurança do profissional de saúde foi avaliada positivamente no Serviço de Atendimento Móvel de Urgência por 50% dos participantes e, na Unidade de Pronto Atendimento, por 37,5%. A dimensão profissional teve avaliação positiva por 75% dos participantes em ambos os serviços. Nas demais dimensões, a percepção positiva por profissionais da Unidade de Pronto Atendimento e do Serviço de Atendimento Móvel de Urgência foram, respectivamente: emocional (56,3% vs. 58,3%), estrutural (31,3% vs. 58,3%) e organizacional (50% vs. 41,7%). **Conclusão:** Apesar da amostra de conveniência, os achados evidenciam desafios que demandam intervenções para fortalecer a segurança dos profissionais de saúde.

DESCRITORES:
Condições de Trabalho; Gestão de Segurança; Pessoal de Saúde; Serviços Médicos de Emergência; COVID-19.

RESUMEN

Objetivo: Evaluar la percepción de seguridad de los profesionales de la salud de la Unidad de Atención de Urgencias y del Servicio de Atención Móvil de Urgencias frente a la pandemia de COVID-19. **Metodología:** Estudio transversal, descriptivo, realizado entre 2022 y 2023, con 28 profesionales de la salud. Se utilizó el instrumento validado "Cuestionario de Seguridad del Profesional de la Salud ante la Pandemia de COVID-19" (QSP-COVID-19), que evalúa la percepción de seguridad en las dimensiones organizacional, emocional, profesional y estructural. Se consideró percepción positiva una puntuación ≥ 75. **Resultados:** La percepción de seguridad fue evaluada positivamente por el 50% de los profesionales del Servicio de Atención Móvil de Urgencias y por el 37,5% de los de la Unidad de Atención de Urgencias. La dimensión profesional obtuvo evaluación positiva por el 75% de los participantes en ambos servicios. En las demás dimensiones, la percepción positiva de los profesionales de la Unidad de Pronto Pago y del Servicio de Atención Móvil de Urgencia fue, respectivamente: emocional (56,3% vs. 58,3%), estructural (31,3% vs. 58,3%) y organizacional (50% vs. 41,7%). **Conclusión:** A pesar de tratarse de una muestra por conveniencia, los hallazgos evidencian desafíos que requieren intervenciones para fortalecer la seguridad de los profesionales de la salud.

DESCRIPTORES:
Condiciones de Trabajo; Administración de la Seguridad; Personal de Salud; Servicios Médicos de Urgencia; COVID-19.

INTRODUCTION

The COVID-19 pandemic has brought profound and multifaceted impacts to health systems on a global scale[1]. In Brazil, the Brazilian Unified Health System (UHS), responsible for exclusively assisting about 150 million people[2], carried out an emergency reorganization of its different points of assistance in order to face the health crisis[3]. Within the Emergency Care Network, mobile pre-hospital services, mainly represented by the Mobile Emergency Care Service (SAMU), and the Emergency Care Units (UPA) acted as essential entry points, being responsible for receiving and intervening quickly in critical situations of high complexity[3].

SAMU is structured to offer qualified and timely pre-hospital care to victims in emergency situations, integrating with the National Policy on Urgent Care[4]. During the pandemic, this service experienced a significant increase in demand, marked by an increase in the number of visits, removals and transports of patients with suspected or confirmed COVID-19[5]. This context intensified the work overload, exposing professionals to situations of high physical and emotional stress, aggravated by lack of resources, insecurity in the face of an unknown disease, loss of colleagues and patients, and constant fear of contamination[6].

UPAs, in the pandemic, were responsible for the care of acute clinical cases of an urgent nature[7]. These units underwent operational adaptations, reorganization of care flows, implementation of new protocols and increase in the volume of care due to the pandemic[7-8]. In addition to the difficulties faced by SAMU, UPA professionals reported additional challenges such as labor overload, absence of colleagues, lack of supplies, uncertainties regarding the disease and therapeutic processes[6], as well as episodes of social stigmatization[8].

Given the above, the COVID-19 pandemic has opened up working conditions that have historically been marked by precariousness[9] and highlighted, in a blunt way, the importance of health professional safety[10]. Although the topic had already been addressed in research prior to the pandemic[11-12], it has gained centrality in international debates - as emphasized in the Health Workers' Safety Charter[13], in scope reviews[14-15], and in research with qualitative[6,16] and quantitative approaches[17].

The safety of health professionals can be understood from four dimensions: organizational, emotional, professional and structural[18]. The organizational dimension refers to the presence of efficient management, effective communication, well-structured collaborative work, appropriate use of assistance protocols and access to continuing training. The emotional dimension refers to how professionals perceive and experience feelings, motivations, pride for the work performed and recognition, directly influencing their well-being and bond with the practice of care. The professional dimension concerns the technical competence and confidence for the safe exercise of activities, considering the integration of knowledge, skills and attitudes. Finally, the structural dimension includes the adequacy of human resources, the physical conditions of care spaces, as well as the availability of supplies, personal protection equipment and essential materials for safe health work[18].

In this sense, it is pertinent to evaluate the perception of UPA and SAMU health professional safety in coping with the COVID-19 pandemic in a Brazilian municipality through the "Questionnaire on health professional safety in the COVID-19 pandemic" (QSP COVID-19)[18].

OBJECTIVE

To evaluate the perception of UPA and SAMU health professional safety in coping with the

COVID-19 pandemic.

METHODOLOGY

Design, study site and period

This is a cross-sectional study, of descriptive and analytical nature, developed in services of the emergency network of a municipality of Minas Gerais, specifically in UPA and SAMU. Data collection occurred in two distinct periods: at the UPA, between August and September 2022; and at the SAMU, between July and August 2023.

Population, sample and study protocol

During the collection period, all health professionals working in the respective services were invited to participate in the study, regardless of the time of action, setting up an intentional and non-probabilistic sampling. The UPA had an eligible population of 151 health professionals, including doctors, nurses, nursing technicians, radiology technicians and pharmacists. The SAMU already had 34 professionals, including doctors, nurses, nursing technicians and first aid drivers.

At UPA, the invitation to participate was disseminated through an informative poster affixed next to the electronic point and by messages shared in institutional groups of WhatsApp®. The poster contained a QR code and the digital messages presented a link directing interested parties to read the Informed Consent Form (ICF) and accept it electronically on the Google Forms® platform. After free and informed consent, the participants had access to the collection instrument and proceeded with its self-filling.

At SAMU, an MSc student carried out the recruitment in person at appropriate times during the work routine. The data collection instrument was applied through an individual interview, conducted by the master's student in a reserved room. Due to the dynamic and emergency nature of the service, some participants received the two copies of the ICF along with the research instrument for self-filling until the end of the shift.

Data collection used the validated instrument QSP - COVID-19[18] and a questionnaire developed by the authors to characterize the participants. The QSP COVID-19 has 30 items that evaluate the safety of the professional in four dimensions (organizational, emotional, professional and structural dimension). For these items, participants assigned an answer according to the Likert type scale with the following response options: totally disagree; partially disagree; neutral; partly agree and fully agree. The score assigned to the scale options was: strongly disagree (0 points), partially disagree (25 points), neutral (50 points), partially agree (75 points) and strongly agree (100 points). Thus, the total score of the instrument varies from 0 to 100, where 0 represents the worst safety perception and 100, the best[18].

Statistical analysis and of the results

For each dimension of the QSP COVID-19, the score was calculated by the arithmetic average of the items that compose it. The overall safety score of the health professional was determined from the mean of the scores of the four dimensions, according to the formula: Health professional's safety = (organizational dimension score + emotional dimension score + professional dimension score + structural dimension score) / 4. It was considered as indicative of positive perception of security the score equal to or higher than 75 points[18].

The data were analyzed using the statistical software Statistical Package for the Social Sciences (SPSS), version 20.0. The descriptive analyses were expressed by means of absolute and relative frequencies, mean and standard deviation.

Ethical aspects

This study was approved by the Research Ethics Committee of the Dona Lindu Midwest Campus of the Federal University of São João del-Rei, under opinion n. 5.858.958.

RESULTS

The study sample consisted of 28 health professionals, being 16 workers from UPA and 12 from SAMU. According to table 1, which presents the characterization of participants, there was a predominance of females among UPA professionals (68.8%), while in SAMU the majority was male (75%). The mean age of UPA participants was 36.6 years (± 8.6), and in SAMU 37.3 years (± 5.7). In the UPA, only 18.8% of workers had statutory employment, while in the SAMU this proportion was 41.7%.

Table 1. Characterization of the research participants. City in Minas Gerais, 2023.

Variables	UPA		SAMU	
	N	%	N	%
Sex	16	100%	12	100%
Female	11	68.8%	3	25%
Male	5	31.3%	9	75%
Age (mean ± standard deviation)	36.6 ±8.6		37.3 ±5.7	
Covid-19 risk group				
Yes	2	12.5%	3	25%
No	14	87.5%	9	75%
Type of employment				
Statutory	3	18.8%	5	41.7%
Temporary contract	1	6.2%	3	25%
Other	12	75%	4	33.3%

Weekly work load				
40 hours	13	81.2%	8	66.7%
30 hours	3	18.8%	-	-
24 hours	-	-	1	8.3%
Other	-	-	3	25%
Time of work				
6 - 11 months	1	6.2%	1	8.3%
1 - 2 years	4	25%	3	25%
3 - 5 years	4	25%	5	41.7%
6 - 9 years	6	37.6%	3	25%
10 or more	1	6.2%	-	-

Note: UPA - (Emergency Care Unit); SAMU - (Mobile Emergency Care Service).

According to table 2, the health professional's safety score in coping with the COVID-19 pandemic varied between 45.8 and 91.6 in the UPA (68.7±13.7) and between 59.6 and 92 in the SAMU (75.5±10.8). Despite this, half of the SAMU professionals (50%) achieved a score equal to or greater than 75, a value that was observed in only 37.5% of UPA workers.

In the organizational dimension, 50% of participants from UPA and 41.7% from SAMU attributed scores of ≥ 75 points. It is noteworthy that the majority of participants in both services evaluated positively the questions Q1 and Q4. The practice of management in consulting the team about the problems faced daily was more often pointed out in the UPA (68.8%) than in the SAMU (16.7%).

Table 2. Description of the safety scores of healthcare professionals in coping with the COVID-19 pandemic, their respective dimensions (organizational, emotional, professional, and structural) and items stratified by study location. City in Minas Gerais, 2023.

Variables	**UPA**			**SAMU**		
	Minimum/maximum score	Mean (standard deviation)	Percentage of participants who assigned a score of ≥ 75 points.	Minimum/maximum score	Mean (standard deviation)	Percentage of participants who assigned a score of ≥ 75 points.
Safety of healthcare professionals in the face of the COVID-19 pandemic	45.8--- 91.6	68.7 (±13.7)	37.5%	59.6 --- 92	75.5 (±10.8)	50%
Organizational Dimension	32.5 --- 90	65 (±19.28)	50%	42.5 --- 95	66.9 (±16.9)	41.7%
Q1 - I have the support I need from other team members to provide care for suspected and/or confirmed cases	0 --- 100	78.1 (±25.6)	87.5%	75 --- 100	85.4 (±12.9)	100%

Q2 - The qualifications of the professionals on the team are sufficient to deal with the needed actions to deal with the pandemic.	0 --- 100	60.9 (±28.8)	62.5%	0 --- 100	70.8 (±29.8)	83.3%
Q3 - I can see that the health unit I work at is continuously working to improve the team to deal with the pandemic.	0 --- 100	54.7 (±31.9)	56.3%	25 --- 100	66.7 (±30.8)	58.3%
Q4 - I notice that the professionals in my team work together as a well-coordinated team.	25 --- 100	79.7 (±18.7)	93.8%	50 --- 100	81.2 (±15.5)	91.7%
Q5 - I have the time and opportunity to discuss with team members the situations experienced in dealing with the pandemic.	0 --- 75	53.1 (±30.1)	56.3%	0 --- 100	60.4 (±37.6)	50%
Q6 - I am encouraged to report any concerns I may have about my safety in my day-to-day work in the face of the pandemic.	0 --- 100	68.7 (±39.3)	75%	25 --- 100	83.3 (±24.6)	83.3%
Q7 - The unit's managers/coordinators/supervisors consult the team about the problems faced on a daily basis.	0 --- 100	59.4 (±34.0)	68.8%	0 --- 100	43.7 (±28.4)	16.7%
Q8 - The unit's managers/coordinators/supervisors listen and respond to workers' concerns.	0 --- 100	67.2 (±28.4)	81.3%	0 --- 100	60.4 (±34.5)	58.3%
Q9 - The unit's managers/coordinators/supervisors use mistakes as learning opportunities and not as criticism.	0 --- 100	59.4 (±32.7)	68.8%	0 --- 100	47.9 (±32.8)	25%
Q10 - All the information needed for decision-making is routinely available to me.	25 --- 100	68.7 (±25.0)	75%	0 --- 100	68.7 (±33.9)	58.3%

Emotional Dimension	46.4 --- 100	74.7 (±17.0)	56.3%	53.6---92.9	47.4 (±12.5)	58.3%
Q11 - I identify with my work.	0 --- 100	71.9 (±36.4)	68.8%	0 --- 100	66.7 (±32.6)	58.3%
Q12 - I feel this is the right job for me.	25 --- 100	84.4 (±25.6)	75%	25 --- 100	83.3 (±26.8)	75%
Q13 - My work fulfills me professionally.	50 --- 100	59.4 (±20.1)	18.8%	50 --- 50	50 (±0.0)	0%
Q14 - I am doing the job I have always wanted to do.	0 ---100	65.6 (±31.4)	68.8%	25 --- 100	72.9 (±24.9)	66.7%
Q15 - I feel I am doing important work.	75 --- 100	98.43 (±6.2)	100%	75 --- 100	97.9 (±7.2)	100%
Q16 - I am proud to work in the health sector.	25 --- 100	89.0 (±20.3)	93.8%	50 --- 100	87.5 (±16.8)	91.7%
Q17 – I have thought about quitting my job.	0 --- 100	54.7 (±44.9)	50%	0 --- 100	62.5 (±44.6)	58.3%
Professional Dimension	35 --- 100	78.7 (±15.3)	75%	40 --- 100	82.0 (±18.9)	75%
Q18 - I have sufficient knowledge to deal with the COVID-19 pandemic in the health service where I work.	0 --- 100	68.7 (±29.6)	81.3%	25 --- 100	87.5 (±22.6)	91.7%
Q19 - I have an attitude towards the COVID-19 pandemic in the health service where I work.	75 --- 100	87.5 (±12.9)	100%	25 --- 100	79.1 (±25.7)	75%
Q20 - I have sufficient skills to deal with the COVID-19 pandemic.	0 --- 100	78.1 (±23.9)	93.8%	25 --- 100	83.3 (±22.1)	91.7%
Q21 - The care I provide in the health service where I work is based on the official protocols for dealing with COVID-19.	25 --- 100	79.7 (±18.7)	93.8%	25 --- 100	83.3 (±22.1)	91.7%
Q22 - I feel safe to work in the COVID-19 pandemic.	0 --- 100	79.7 (±24.5)	93.8%	25 --- 100	77.1 (±27.1)	83.3%
Structural Dimension	9.0 --- 93.7	56.4 (±25.6)	31.3%	56.2--- 100	78.6 (±15.3)	58.3%
Q23 - I consider that the number of professionals in my health unit is sufficient to deal with COVID-19.	0 --- 100	45.3 (±42.0)	50%	0 --- 100	56.2 (±44.1)	58.3%

Q24 - I consider that the health unit where I work has a safe environment for dealing with COVID-19.	0 --- 100	37.5 (±36.5)	37.5%	0 --- 100	75.0 (±28.2)	83.3%
Q25 - I consider that the health unit where I work has a favorable environment in terms of infrastructure for dealing with COVID-19.	0 --- 75	39.1 (±32.9)	37.5%	0 --- 100	75 (±28.2)	83.3%
Q26 - I consider that the health unit provides adequate personal protective equipment for my work in the face of the pandemic.	0--- 100	67.2 (±41.5)	68.8%	75 --- 100	89.6 (±12.9)	100%
Q27 - I believe that the health unit has an adequate quantity of consumables to assist people with COVID-19.	25 --- 100	68.7 (±32.3)	68.8%	25 --- 100	83.3 (±22.2)	91.7%
Q28 - I believe that the health unit has consumables of adequate quality to assist people with COVID-19.	25 --- 100	67.2 (±31.2)	68.8%	25 --- 100	83.3 (±22.2)	91.7%
Q29 - I believe that the health unit has an adequate quantity of permanent materials to assist people with COVID-19.	0 --- 100	67.2 (±26.9)	81.3%	0 --- 100	83.3 (±28.9)	91.7%
Q30 - I believe that the health unit has permanent materials of adequate quality to assist people with COVID-19.	0 --- 100	59.4 (±30.1)	68.7%	0 --- 100	83.3 (±28.9)	91.7%

Q - Question; UPA - (Emergency Care Unit); SAMU - (Mobile Emergency Care Service).

In the emotional dimension, question 15 showed 100% positive perception of safety in both services. In addition, the majority expressed pride in working in the health area (UPA: 93.8%; SAMU: 91.7%). On the other hand, question 13 was positively evaluated by only 18.8% of UPA participants and by no SAMU professional.

In the professional dimension, 75% of UPA and SAMU participants assigned a score of 75. The question "I have sufficient knowledge to deal with the COVID-19 pandemic in the health service where I

work" was better evaluated by SAMU professionals (91.7%) compared to those of UPA (81.3%). Finally, the structural dimension was positively evaluated by 58.3% of SAMU professionals and 31.3% of UPA professionals.

DISCUSSION

The results of this study showed the perception of safety of UPA and SAMU professionals in coping with the COVID-19 pandemic in a Brazilian municipality. This is the first study that used the QSP COVID-19 in emergency services. Despite the limitations related to the number of participants, the only scenario evaluated and the design of the study, the findings contribute to the debate on the safety of health professionals in times of health crisis in two key services of the emergency system in Brazil.

The health professional's safety had a better percentage of positive evaluations by SAMU participants when compared to UPA. Although both services act in the care of emergencies and emergencies, SAMU is responsible for pre-hospital care, performing first aid and referring the victim to the emergency unit, having the UPA as the main entrance door. After the completion of this process, the SAMU team is released for new occurrences[5].

The UPA, in turn, besides receiving patients from pre-hospital care, also operates on an open-door basis[7], performing screening according to the Manchester protocol. Although its structure is aimed at attending moderate and severe cases, it faces recurrent — and not only in the pandemic period, overcrowding situations, which leads to overload for professionals, increased stress and difficulties associated with shortage of supplies[19].

Regarding the dimensions of the QSP COVID-19, participants reported gaps in the organizational dimension. In primary health care (PHC) services and average complexity of the same municipality, this dimension was positively evaluated by 50.6% of professionals[17]. Medical professionals, nurses and paramedics in a study conducted in five European countries highlighted the precarious working conditions and inadequate institutional management capacity, with no satisfactory perception of safety climate. This highlights the need for measures that strengthen the safety culture in health institutions, considering that positive working conditions, efficient management and teamwork contribute to the quality of care and increase patient safety[20].

A research carried out in the context of emergency care also identified organizational factors that affect occupational safety, such as teamwork climate, management performance, stress recognition, working conditions and staff satisfaction level[21]. The current study showed, from the answers obtained in questions one and four, a favorable teamwork in both services. Questions two and three showed weaknesses in the training of professionals in both UPA and SAMU. In the face of COVID-19, training activities not only favored the proper use of personal protective equipment[22], but also ensured that professionals were aligned with the most up-to-date and evidence-based guidelines[17].

Another frailty exposed in the organizational dimension was identified in question seven. Communication between professionals and managers is an important factor of security, because it allows clarification of issues of the work process, establishes trust, favors the acquisition of knowledge and transmits institutional support[23]. Research conducted in Portugal revealed the need for improvement in the performance of health service managers[24]. Already a study with Spanish nurses from the front line of COVID-19 pointed out that many professionals did not feel heard by their direct managers, facing narrowing opinions and low resolution of the needs presented[25].

Regarding the emotional dimension, professionals from UPA and SAMU pointed out weaknesses in questions 11, 13, 14 and 17. These responses show personal dissatisfaction among health professionals, a direct reflection of the pandemic period, characterized by work overload and increased occupational stress[26] of qualified professionals and physical infrastructure results in insecurity and moral suffering among frontline professionals, affecting their biopsychosocial, emotional and moral dimensions[6].

Despite these findings, the emotional dimension also showed potential. Questions 12, 15 and 16 stand out, which shows an ambivalence in the results, on the one hand the pride of the profession and perception of importance of the work that coexist with the intention of disconnection and low personal achievement, as well as in the study conducted in Canada[27]. In the study conducted by Rodarte et al.[17], which applied the QSP-COVID-19 to professionals of PHC and medium complexity, the emotional dimension presented the best performance, with 85.5% of participants demonstrating positive perception, expressed by feelings of pride, identification with the profession and satisfaction in the exercise of work. Such findings reinforce the need for institutional strategies aimed at valuing, welcoming and providing emotional support to these workers, especially in contexts of health crisis[6].

The items of the professional dimension allowed the investigation of the perception of the triad composed by knowledge, attitude and skill of health professionals. An integrative review[11] that mapped the safety of the professional in PHC highlighted that the lack of permanent education is a factor that can compromise the assistance and safety of the worker for the execution of good practices. Thus, good practices are directly related to the development of skills and competencies by professionals(11).

During the pandemic, health professionals faced constant changes in care protocols, driven by the accelerated advancement of scientific knowledge about COVID-19. The need for continuous updating made the learning process dynamic and required teams to be proactive in the face of new evidence[28]. Corroborating these findings, Freitas[6] states that the advancement of scientific knowledge has provided workers with a greater sense of security.

The results of the structural dimension show difference in the perception of safe environment and favorable atmosphere of SAMU compared to UPA. This performance may be related to the standardized

organization of ambulances, which follow a strict checklist with the description and quantity of mandatory materials, which are given at each shift exchange and promptly replaced, as established in the guidelines of the Ministry of Health[29]. Thus, operational standardization in the SAMU favors the safety and efficiency of care[29], while the structural precariousness of the UPA is perceived as a limiting factor to the quality of care provided[6].

In UPA, the environment and ambience were directly affected by working in temporary and adapted units[6,30], adding to the service above the infrastructure capacity of health facilities, which resulted in congestion and collapse of services[31]. In this context, UPA participants reported weaknesses in the adequate supply — in quantity and quality — of material resources. In the SAMU, there was no shortage of these resources during the COVID-19 pandemic. According to Muhammad et al.[32], access to and proper use of material resources give greater security to professional performance in the care of infectious diseases.

Question 23 was positively evaluated by 50% of UPA professionals and 58.3% of SAMU. This perception may be associated with the structural and historical shortage of human resources in the Unified Health System[9]. Qualitative research conducted in Minas Gerais at UPA[6], SAMU[6] and in the hospital context[33] showed that the perception of insufficient personnel is a critical and persistent point that requires strategic investments in adequate sizing of teams.

Finally, concerning the occupational characteristics of the participants, there was a predominance of the statutory bond among the SAMU professionals, which contrasts with the reality of other regions, in which CLT bonds, temporary or mediated by social organizations prevail[34]. The poor labor relations in the UHS is manifested through temporary contracts, lack of stability, absence of career plans and inadequate remuneration[35]. This structural fragility has a direct impact on the continuity of care, professional motivation and safety of emergency care workers, especially in times of health crisis, as indicated by evaluations of the Emergency Care Network in Brazil[36].

Study Limitations

The present study presents limitations that must be considered in the interpretation of the results. This is a convenience sample, composed of professionals from a single municipality, which restricts the generalization of the findings to other scenarios. In addition, the small sample size and cross-sectional nature of the research make it impossible to establish causal relationships between the analyzed variables. It is also noteworthy that the differences in the collection periods between the services (UPA and SAMU) may have influenced participants' perceptions, since the course of the pandemic and working conditions suffered variations over time. In addition, the different modalities of data collection — self-filling online at the UPA and face-to-face interviews or self-filling at the end of the shift at the SAMU — constitute a relevant methodological limitation, because the method of application of the instrument may interfere in

the level of reflection of the responses, constituting a potential bias that must be considered in the analysis of the results.

Contributions for the Nursing, Health and Political Areas

The study offers a relevant and unprecedented contribution by using a validated instrument to assess the safety of health professionals in coping with the COVID-19 pandemic. For nursing, subsidize the development of management strategies aimed at promoting safer and more resilient working environments. In the broader field of health and public policies, the findings reinforce the recommendations of international guidelines - the Health Workers' Safety Charter[13] and the Global Action Plan for Patient Safety 2021-2030[37], which recognize worker protection as an indispensable requirement for patient safety and the resilience of health systems.

CONCLUSION

The safety perception of health professionals working in UPA and SAMU during the COVID-19 pandemic was positively evaluated by 37.5% of UPA participants and 50% of SAMU participants. Although the professionals of UPA and SAMU showed high perception of professional safety in the professional dimension, relevant weaknesses persist in the emotional, organizational and structural dimensions. The pioneering application of the QSP-COVID-19 contributes to the advancement of knowledge by providing empirical evidence on the safety of health professionals in the context of urgency and emergency at the UHS.

The practical implications include the need for institutional and public policies aimed at improving working conditions, emotional and psychological and the continuous offer of training — aspects that strengthen both the safety of the health professional and the patient's safety. In line with international guidelines, the results reinforce that investing in the safety of health workers is an essential strategy for the resilience and quality of health systems. That the lessons learned during the pandemic result in more prepared and humanized health systems to face future public health emergencies.

REFERENCES

1. Haldane V, De Foo C, Abdalla SM, Jung AS, Tan M, Wu S, et al. Health systems resilience in managing the COVID-19 pandemic: lessons from 28 countries. Nat Med. [Internet] 2021 [citado 03 abr 2025]; 27: 964–980. Disponível em: https://doi.org/10.1038/s41591-021-01381-y

2. Universidade Federal de Goiás. Instituto de Patologia Tropical e Saúde Pública. Três décadas da criação do SUS - A maior política de inclusão social do Brasil. 2023. Disponível em: https://iptsp.ufg.br/n/174770-tres-decadas-da-criacao-do- sus-a-maior-politica-de-inclusao-social-do-brasil#home

3. Portela MC, Reis LGC, Lima SML. Covid-19: desafios para a organização e repercussões nos sistemas e serviços de saúde. Rio de Janeiro: Editora Fiocruz; 2022. Disponível em: https://doi.org/10.7476/9786557081587

4. Konder MT, O'Dwyer G. As Unidades de Pronto-Atendimento na Política Nacional de Atenção às Urgências. Physis. [Internet] 2015 [citado 23 mai 2025];25(2):525–45. Disponível em: https://doi.org/10.1590/S0103-73312015000200011

5. Rodrigues MPB, Silva ACC, Duarte GP, Pitanga KK, Traboulsi LS, Silva CTX. Efeitos da pandemia do novo coronavírus no serviço de atendimento móvel de urgência (SAMU) nas ocorrências em uma cidade do interior de Goiás. Evid. [Internet] 2023 [citado 12 fev 2025];23(1):77-88. Disponível em: https://doi.org/10.18593/evid.32566

6. Freitas ATS. Dimensões da segurança do profissional e vivências na urgência e emergência: o legado de uma pandemia [dissertação de mestrado]. Divinópolis: Universidade Federal de São João del-Rei; 2024. Disponível em: https://ufsj.edu.br/portal2-repositorio/File/pgenf/Dissertacoes/2024/resumo/Resumo%20-%20Amanda%20Tainara.pdf

7. Campos RKGG, Maniva SJCF, Santos MHS, Mesquita KKB, Pinheiro PNC. Implementation of a flowchart in emergency unit during the pandemic of COVID-19. Esc Anna Nery. [Internet] 2023 [citado 04 dez 2024];27:e20220233. Disponível em: https://doi.org/10.1590/2177-9465-EAN-2022-0233pt

8. Campos ICM, Alves M. Occupational stress related to the COVID-19 pandemic: the daily life of an emergency care unit. REME Rev Min Enferm. [Internet] 2022 [citado 13 fev 2025];26:e1430. Disponível em: https://doi.org/10.35699/2316-9389.2022.38796

9. Teixeira CFS, Soares CM, Souza EA, Lisboa ES, Pinto ICM, Andrade LR, et al. The health of healthcare professionals coping with the Covid-19 pandemic. Ciênc saúde coletiva. [Internet] 2020 [citado 04 mar 2025];25(9):3465–74. Disponível em: https://doi.org/10.1590/1413-81232020259.19562020

10. Lanza FM, Viegas SMF. Health professional safety: Toward a humanized, resilient, and sustainable health system. Rev. Enf. Ref. [Internet] 2025 [citado 10 ago 2025];6(4):1-3. Disponível em: https://doi.org/10.12707/RVI25ED1

11. Gontijo MD, Viegas SMF, Freitas ATS, Maia AFF, Silveira EAA, Quites HFO. Professional safety constructs in the context of Primary Health Care. Rev Bras Enferm. [Internet] 2020 [citado 23 nov 2024];73:e20190529. Disponível em: https://doi.org/10.1590/0034-7167-2019-0529

12. Silva LS, Menezes C, Montenegro LC, Oliveira PP, Viegas SMF. Segurança do profissional e problemas éticos e bioéticos no cotidiano da atenção primária: Vivências de enfermeiros. Rev. latinoam. bioet. [Internet] 2021 [citado 27 jan 2025];20(2): 103-119. Disponível em:

https://doi.org/10.18359/rlbi.4906

13. World Health Organization. Charter: health worker safety: a priority for patient safety. World Health Organization; 2020. Disponível em: https://iris.who.int/handle/10665/339287.

14. Oliveira Júnior J, Freitas ATS, Silva SPP, Silva BM, Viegas SMF. Segurança do profissional na atenção primária e serviços de referência no enfrentamento da pandemia de COVID-19: scoping review. CLCS. [Internet] 2024 [citado 17 mar 2025];17(1):8516-38. Disponível em: https://doi.org/10.55905/revconv.17n.1-514

15. Silva SPP, Freitas ATS, Lanza FM, Dutra IR, Viegas SMF. Culture and safety of healthcare professionals in urgent and emergency services during pandemics. Rev. Pesqui. (Univ. Fed. Estado Rio J., Online). [Internet] 2024 [citado 12 mai 2025];16:e-13349. Disponível em: https://doi.org/10.9789/2175-5361.rpcfo.v16.13349

16. Oliveira Júnior J. Segurança do profissional de saúde e vivências na atenção primária no Brasil e Chile: Legado de uma pandemia [dissertação de mestrado]. Divinópolis: Universidade Federal de São João del-Rei; 2025.

17. Rodarte AC, Costa KAR, Dutra HS, Silva SMDT, Viegas SMF, Lanza FM. Health Professionals' Safety in Facing the COVID-19 Pandemic: Perceptions from a Brazilian Municipality. COVID. [Internet] 2025 [citado 20 dez 2025]; 5(11):182. Disponível em: https://doi.org/10.3390/covid5110182

18. Lanza FM, Dutra HS, Rodarte AC, Silva SPP, Silva SMDT, Viegas SMF. Health Professional Safety in the COVID-19 Pandemic: The Validation of a Measurement Instrument. COVID. [Internet] 2025 [citado 12 mai 2025]; 5(3):37. Disponível em: https://doi.org/10.3390/covid5030037

19. Piffer L, Schmidt MLG, Massuda Júnior J. Ansiedade e Depressão entre Profissionais de Enfermagem em UPA durante a Pandemia da Covid-19. PSSA. [Internet] 2021 [citado 17 dez 2024];13(3):173-85. Disponível em: https://doi.org/10.20435/pssa.v13i3.1565

20. Kosydar-Bochenek J, Krupa S, Religa D, Friganović A, Oomen B, Brioni E, et al. The Perception of the Patient Safety Climate by Health Professionals during the COVID-19 Pandemic—International Research. Int. J. Environ. Res. Public Health. [Internet] 2022 [citado 28 abr 2025]; 19: 9712. Disponível em: https://doi.org/10.3390/ijerph19159712

21. Venesoja A, Lindström V, Aronen P, Castrén M, Tella S. Exploring safety culture in the Finnish ambulance service with Emergency Medical Services Safety Attitudes Questionnaire. Scand J Trauma Resusc Emerg Med. [Internet] 2021 [citado 04 jul 2025]; 29:148. Disponível em: https://doi.org/10.1186/s13049-021-00960-9

22. Costa KAR, Lanza FM, Lana FCF, Silva CC, Assis CCG, Laurindo CR, et al. COVID-19: Training

activities, adherence, and use of personal protective equipment in Primary Health Care. Rev Bras Enferm. [Internet] 2024 [citado 10 jun 2025];77:e20230179. Disponível em: https://doi.org/10.1590/0034-7167-2023-0179

23. Serrano-Ripoll MJ, Meneses-Echavez JF, Ricci-Cabello I, Fraile-Navarro D, Fiol-deRoque MA, Pastor-Moreno G, et al. Impact of viral epidemic outbreaks on mental health of healthcare workers: a rapid systematic review and meta-analysis. J Affect Disord. [Internet] 2020 [citado 04 fev 2025];277:347-357. Disponível em: https://doi.org/10.1016/j.jad.2020.08.034

24. Ferreira MMM, Teixeira ASC, Taveira-Gomes TSM. Safety Climate Evaluation in Primary Health Care: A Cross-Sectional Study. Int. J. Environ. Res. Public Health. [Internet] 2022 [citado 16 fev 2025]; 19(21):14344. Disponível em: https://doi.org/10.3390/ijerph192114344

25. González-Gil MT, González-Blázquez C, Parro-Moreno AI, Pedraz-Marcos A, Palmar-Santos A, Otero-García L, et al. Nurses' perceptions and demands regarding COVID-19 care delivery in critical care units and hospital emergency services. Intensive Crit Care Nurs. [Internet] 2021 [citado 21 mai 2025];62:102966. Disponível em: https://doi.org/10.1016/j.iccn.2020.102966

26. Mohammadi F, Tehranineshat B, Bijani M, Khaleghi AA. Management of COVID-19-related challenges faced by EMS personnel: a qualitative study. BMC Emerg Med. [Internet] 2021 [citado 16 jul 2025]; 21: 95. Disponível em: https://doi.org/10.1186/s12873-021-00489-1

27. Marceau M, Ledoux I, Lavoie S, Douma NB, Mailhot-Bisson D, Gosselin É. Exploration of the occupational and personal dimensions impacted by the COVID-19 pandemic for nurses: A qualitative analysis of survey responses. J. Adv. Nurs. [Internet] 2022 [citado 28 jul 2025]; 78(7): 2150-64. Disponível em: https://doi.org/10.1111/jan.15167

28. Marinelli NP, Albuquerque LP de A, Sousa IDB de. Protocolo de manejo clínico do COVID-19: por que tantas mudanças? Revista Cuidarte. [Internet] 2020 [citado 19 dez 2024];11(2). Disponível em: https://doi.org/10.15649/cuidarte.1220

29. Brasil. Portaria nº 356, de 8 de abril de 2013. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/sas/2013/prt0356_08_04_2013.html

30. Blanchard J, Li Y, Bentley SK, Lall MD, Messman AM, Liu YT, et al. The perceived work environment and well-being: A survey of emergency health care workers during the COVID-19 pandemic. Acad Emerg Med. [Internet] 2022 [citado 11 jun 2025];29(7):851-861. Disponível em: https://doi.org/10.1111/acem.14519

31. Ndayishimiye C, Sowada C, Dyjach P, Stasiak A, Middleton J, Lopes H, Dubas-Jakóbczyk K. Associations between the COVID-19 Pandemic and Hospital Infrastructure Adaptation and Planning-A

Scoping Review. Int J Environ Res Public Health. [Internet] 2022 [citado 23 jul 2025];19(13):8195. Disponível em: https://doi.org/10.3390/ijerph19138195

32. Muhammad ANA, Abdul MNA, Mohammed NA, Salleh SA, Periyasamy P, Kori N, et al. COVID-19 in Malaysia: exposure assessment and prevention practices among healthcare workers at a teaching hospital. J Infect Dev Ctries. [Internet] 2021 [citado 17 mar 2025];15(12)1816-24. Disponível em: https://doi.org/10.3855/jidc.15277

33. Roncalli, AA. Ambiente de Trabalho Saudável na Perspectiva da Equipe de Enfermagem no Cenário Hospitalar: O Contexto da Pandemia da Covid-19. [dissertação de mestrado]. Belo Horizonte, Universidade Federal de Minas Gerais; 2022. Disponível em: https://repositorio.ufmg.br/server/api/core/bitstreams/3e949d6b-e1e6-4ca9-a8eb-7ea784c1468c/content

34. Machado CV, Lima LD, O'Dwyer G, Andrade CLT, Baptista TWF, Pitthan RGV, et al. Gestão do trabalho nas Unidades de Pronto Atendimento: estratégias governamentais e perfil dos profissionais de saúde. Cad Saúde Pública. [Internet] 2016 [citado 25 mar 2025];32(2):e00170614. Disponível em: https://doi.org/10.1590/0102-311X00170614

35. Pereira TM, Oliveira RS, Morais HMM, Cunha EM. Expressões da precarização do trabalho: o caso da enfermagem em um hospital público de Pernambuco. Saúde debate. [Internet] 2025 [citado 04 set 2025]; 49(145): e9816. Disponível em: https://doi.org/10.1590/2358-289820251459816P

36. Tofani LFN, Furtado LAC, Andreazza R, Nasser MA, Bizetto OF, Chioro A. A Emergency and Urgent Health Care Network on scene: contingencies and production of care. Saúde debate. [Internet] 2023 [citado 03 ago 2025];46(134):761-76. Disponível em: https://doi.org/10.1590/0103-1104202213412

37. World Health Organization. Global Patient Safety Action Plan 2021–2030: towards eliminating avoidable harm in health care. World Health Organization; 2021. Disponível em: https://www.who.int/publications/i/item/9789240032705

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