

COVID-19 SERVICES PERFORMED BY ADVANCED EMERGENCY MOBILE SERVICE IN THE TAQUARA/RS REGION.

SERVICIOS COVID-19 REALIZADOS POR SERVICIO MÓVIL DE EMERGENCIA AVANZADO EM LA REGIÓN DE TAQUARA/RS

ATENDIMENTOS POR COVID-19 REALIZADOS PELO SERVIÇO MÓVEL DE URGÊNCIA AVANÇADO NA REGIÃO DE TAQUARA/RS.

¹Dalvan Ficanha

²Alexander de Quadros

³Morgana Thaís Carollo Fernandes

¹Acadêmico do Curso de Enfermagem das Faculdades Integradas de Taquara/FACCAT. Taquara/RS, Brasil.

E-mail: ficagnadalvan@yahoo.com.br
ORCID: <https://orcid.org/0000-0002-2639-0786>

²Enfermeiro. Mestre em Educação. Docente do Curso de Enfermagem das Faculdades Integradas de Taquara/FACCAT. Taquara/RS, Brasil.
ORCID: <https://orcid.org/0000-0002-3023-7514>

³Enfermeira. Mestre e Doutora em Saúde da Criança (PUCRS), Porto Alegre/RS, Brasil.
E-mail: morganafernandes@yahoo.com.br
ORCID: <https://orcid.org/0000-0002-7989-294X>

Autor correspondente

Alexander de Quadros

End. Rua Argentina, 280 – Sapucaia do Sul, RS – Brasil. CEP: 93226-010, Telefone: +55 (051)991612258
E-mail: alexanderquadros2005@yahoo.com.br

ABSTRACT

Objective: to characterize the profile of patients with COVID-19, assisted by the Mobile Emergency Service (SAMU) in the city of Taquara, Rio Grande do Sul. **Methods:** descriptive and exploratory, retrospective study with a quantitative approach, based on data obtained from the SAMU service bulletins in Taquara/RS, from March 2020 to March 2021. Sample consisted of 66 patients. **Results:** There was a predominance of males, 69.7% (n=46), with a mean age of 59.7 (dp=14.8) years. As for the destination, the ICU sector prevailed, 53.0% (n=35). A statistically significant association was obtained regarding the type of care provided to the patient (p=0.023), where the female sex was associated with the care, 65.0% (n=13). Patients with confirmed COVID-19 were also statistically associated with the shift from 12:00 to 17:59 min, 50.0% (n=16) (p=0.039). It was possible to infer that the characterization of these services is relevant to support the consolidation of public policies and health actions.

Keywords: COVID19; Emergency Medical Services; Mobile Emergency Units; Nursing.

RESUMEN

Objetivo: caracterizar el perfil de los pacientes con COVID-19, atendidos por el Servicio Móvil de Emergencia (SAMU) en la ciudad de Taquara, Rio Grande do Sul. **Métodos:** estudio retrospectivo, descriptivo y exploratorio, con abordaje cuantitativo, basado en datos obtenidos de los boletines de servicio del SAMU en Taquara/RS, de marzo de 2020 a marzo de 2021. Muestra compuesta por 66 pacientes. **Resultados:** Predominó el sexo masculino, 69,7% (n=46), con una edad media de 59,7 (dt=14,8) años. En cuanto al destino, predominó el sector UCI, 53,0% (n=35). Se obtuvo asociación estadísticamente significativa en cuanto al tipo de atención brindada al paciente (p=0,023), donde el sexo femenino se asoció a la atención, 65,0% (n=13). Los pacientes con COVID-19 confirmado también se asociaron estadísticamente con el turno de 12:00 a 17:59 min, 50,0% (n=16) (p=0,039). Fue posible inferir que la caracterización de estos servicios es relevante para apoyar la consolidación de políticas públicas y acciones de salud.

Palabras clave: COVID19; Servicios Médicos de Emergencia; Unidades Móviles de Emergencia; Enfermería.

RESUMO

Objetivo: caracterizar o perfil dos pacientes com a COVID-19, atendidos pelo Serviço Móvel de Urgência (SAMU) no município de Taquara, Rio Grande do Sul. **Métodos:** estudo descritivo e exploratório, retrospectivo com abordagem quantitativa, realizado a partir de dados obtidos nos boletins de atendimento do SAMU de Taquara/RS, no período de março de 2020 a março de 2021. Amostra composta por 66 pacientes. **Resultados:** Foi observada a predominância do sexo masculino, 69,7 % (n=46), com média de idade de 59,7 (dp=14,8) anos. Quanto ao destino, prevaleceu o setor de UTI, 53,0 % (n=35). Obteve-se associação estatisticamente significativa quanto ao tipo de atendimento realizado ao paciente (p=0,023), onde o sexo feminino associou-se ao atendimento, 65,0% (n=13). Associou-se estatisticamente também os pacientes com a COVID-19 confirmada ao turno das 12:00 às 17:59 min, 50,0 % (n=16) (p=0,039). Foi possível inferir que é relevante a caracterização destes atendimentos para subsidiar a consolidação de políticas públicas e ações em saúde.

Palavras-chave: COVID19; Serviços Médicos de Emergência; Unidades Móveis de Emergência;

Enfermagem.

INTRODUCTION

According to the World Health Organization (WHO)¹, in January 2020 a Public Health Emergency of international importance was decreed, after an outbreak of the disease caused by the new coronavirus, called COVID-19, being characterized as a pandemic in March of the same year. As of December 6, 2021, in the Rio Grande do Sul 1,495,752 cases of COVID-19 and 36,209 deaths have been confirmed. In Brazil 22,138,247 cases of COVID-19 and 615,570 deaths, in the world 265,194,191 cases of COVID-19 and 5,254,116 deaths⁽¹⁾.

One in six people with COVID-19 develops respiratory distress and becomes seriously ill, but for the most part, about 80% of people recover from the disease without the need for treatment or hospitalization. However, anyone who becomes infected with COVID-19 can become seriously ill⁽¹⁾.

The PNAU (National Policy for Emergency Care) was founded in 2003 and guided the organization of state, regional, and municipal emergency care systems, guided by the principles of the Unified Health System (SUS)⁽²⁾. SAMU (Mobile Emergency Care Service), the main element of mobile pre-hospital care, was consolidated by Decree 1.864/2003, as an indispensable component of the PNAU² to be

inserted in all national territory⁽³⁾.

The level of resolution of urgencies and emergencies in the health system is unsatisfactory, thus causing overcrowding of emergency rooms and hospitals, even when the diagnosis of pathology is not characterized as urgent or emergency. In Brazil this is understood as an unsatisfactory sphere of the health system, characterizing deficient spheres of SUS the urgencies and emergencies, in these that the guidelines of decentralization, regionalization, and hierarchization are little concretized⁽⁴⁾.

Regardless of having shown improvement in the assistance to clients in urgent and emergency circumstances, it still shows structural problems of the health system, resulting in difficulty of access to users, lack of qualification of professionals, insufficient specialized beds, weakened demand of reference resources, indispensable for the organization of the flows of integral attention to urgencies⁽³⁾.

SAMU is capable of directing, through a more comprehensive view, the health services system of a given locality, enabling the construction of solutions as well as the restructuring of existing activities and services, foreseeing alternative methods, and facilitating the resolution of several problems⁽⁵⁾.

Thus, the SAMU is considered a form of

observation of the entire Brazilian Health Care Network, making it essential to conduct new studies to trace the epidemiological and health profile of the patients assisted. It is also considered that such studies will contribute to the development of mechanisms aimed at the prevention of possible diseases, health policies, and programs, and improvement of the quality of care provided by these services due to the application of continuing education focused on the profile of care and customers⁽⁵⁾.

The following guiding question was used for this study: What is the profile of patients with COVID-19 seen by the Advanced SAMU in the municipality of Taquara/RS? This research aims to characterize the profile of patients with COVID-19, seen by the Advanced SAMU in the city of Taquara/RS.

METHODOLOGY

A descriptive, exploratory, and retrospective study with a quantitative approach was carried out in the municipality of Taquara, Rio Grande do Sul, Brazil, based on reports of SAMU calls between March 2020 and March 2021. All Covid-19 call reports treated by the Advanced Support Unit were included.

Statistical analysis was performed with the *Statistical Package for Social Sciences* version 25.0. Data were expressed as absolute and relative

frequencies, measures of central tendency (mean and median), and variability (standard deviation and interquartile range), with a study of the symmetry of continuous distributions performed by the *Kolmogorov-Smirnov* test. The comparison of continuous variables between two groups was performed by the *t-Student* test (independent groups) and when the analysis involved a comparison between three or more independent groups, by the analysis of variance (one way). The comparison between categorical variables was performed by *Pearson's Chi-square Test* or *Fisher's Exact Test*. For statistical decision criteria, a significance level of ($p < 0.05$) was considered.

The research was approved by the Research Ethics Committee of Faculdades Integradas de Taquara and by Plataforma Brasil CAAE: 48635521.7.0000.8135. Confidentiality of all data obtained for the analysis of this research was maintained by the precepts of Resolutions 510/16⁽⁶⁾ and 580/18⁽⁷⁾ of the Ministry of Health.

RESULTS

66 patients were evaluated in the period, 60.6% (n=40) in 2020 and 39.4% (n=26) in 2021, predominantly in the months of March, 27.3% (n=18); July, 16.7% (n=11); and January, 12.1% (n=8). Ages ranged from 25 to 86 years, with a mean of 59.7 (dp = 14.8) years, predominantly

male, 69.7 % (n=46). Cares to residential areas prevailed, 40.9% (n=27); followed by the municipal hospitals of Sapiranga, 28.8% (n=19); Taquara, 13.6% (n=9); and Parobé, 10.6% (n=7). As for the destination of patients, the intensive care unit in 53% (n=35) was the most frequent.

In 48.5% (n=32) of the cases, the diagnosis

of Covid-19 was confirmed. In the ventilation modality, the Hudson mask was used in 36.4% (n=24) cases. Notably, mechanical ventilation was used in 27.3% (n=18) of patients. In the modality of care, 56.1% (n=37) were inter-hospital (transports from one hospital to another reference health care institution).

Table 1: General Characterization of the sample of the Assistance provided by the Mobile Emergency Care Service of Taquara, Rio Grande do Sul, 2021.

Variables	Sample (n=66) ^A	
	no	%
Month of service		
April	4	6.1
August	5	7.6
December	4	6.1
February	3	4.5
January	8	12.1
July	11	16.7
June	4	6.1
May	3	4.5
March	18	27.3
November	2	3.0
October	1	1.5
September	3	4.5
Year of service		
2020	40	60.6
2021	26	39.4
Sex		
Female	20	30.3
Male	46	69.7
Age (years) AD=12 (6%)		
Mean ± standard deviation (amplitude)	59.7±14.8 (25 - 86)	
Origin		
Sapiranga Hospital	19	28.8
Hospital Taquara	9	13.6
Parobé Hospital	7	10.6
24-hour emergency service	1	1.5
Residence	27	40.9
Basic Health Unit	1	1.5
UPA Parobé	1	1.5
UPA Sapiranga	1	1.5
Destiny		
Sapiranga Hospital	1	1.5
Hospital	28	42.4
Residence	2	3.0
ICU	35	53.0

Diagnosis of COVID-19		
Confirmed	32	48.5
Suspected	34	51.5
Ventilation Mode		
Did not answer	2	3.0
Room air	7	10.6
Hudson's Mask	24	36.4
Nasal catheter	15	22.7
Mechanical ventilation	18	27.3
Type of Assistance		
Care.	29	43.9
Transport	37	56.1

A: Percentages obtained based on the total sample.

Source: Prepared by the authors.

Considering the comparisons about gender, a statistically significant association was identified with the type of patient care ($p=0.023$). The female gender was associated with the type of care, 65.0% ($n=13$); while with the male gender, the

association occurred with the type of care, 65.2% ($n=30$). When gender was compared to Covid-19 diagnosis, type of ventilation, and shift/period of care, no statistically significant results were detected.

Table 2: Distribution of Cares per COVID-19 as to, ventilation, care/transportation, and shift/period by gender.

Variables	sex ¹				P
	Female (n=20)		Male (n=46)		
	No	%	No	%	
COVID-19 diagnosis					0.485 ^B
Confirmed	11	55.0	21	45.7	
Suspected	9	45.0	25	54.3	
Ventilation Mode					0.734 ^C
Room air	3	15.8	4	8.9	
Hudson's Mask	8	42.1	16	35.6	
Nasal catheter	4	21.1	11	24.4	
Mechanical ventilation	4	21.1	14	31.1	
Type of Assistance					0.023 ^B
Care	13	65.0	16	34.8	
Transport	7	35.0	30	65.2	
Care Shift					0.568 ^C
From 00:00 to 05:59	2	10.0	8	17.4	
From 6 am to 11:59 am	7	35.0	9	19.6	
From 12 pm to 5:59 pm	6	30.0	16	34.8	
From 6 pm to 11:59 pm	5	25.0	13	28.3	

B: Chi-square test and Pearson's association test; C: Fisher's exact test (Monte Carlo simulation). E: Percentages obtained based on the total and cases of each sex.

Source: Prepared by the authors.

When comparisons involved COVID-19

with specific variables, referring to ventilation,

care/transport, and shift/period, a statistically significant association was detected exclusively with shift/period ($p=0.039$). The results pointed out that the group that had covid-19 *Confirmed* was significantly associated with care in the 12-

17:59 min shift, 50.0% ($n=16$); while patients with *Suspected* covid-19 were related to care in the 00-05:59 min shift, 20.6% ($n=7$); and 18-23:59 min shift, 35.3% ($n=12$).

Table 3: Distribution by Service/Transport and Service Period according to COVID19 classification

Variables	Diagnosis of Covid-19 ^E				P
	Confirmed (n=32)		Suspect (n=34)		
	No	%	no	%	
Ventilation Mode					0.221 ^C
Room air	3	9.7	4	12.1	
Hudson's Mask	13	41.9	11	33.3	
Nasal catheter	4	12.9	11	33.3	
Mechanical ventilation	11	35.5	7	21.2	
Type of Assistance					0.307 ^B
Care	12	37.5	17	50.0	
Transport	20	62.5	17	50.0	
Service Shift					0.039 ^C
From 00:00 to 05:59	3	9.4	7	20.6	
From 6 am to 11:59 am	7	21.9	9	26.5	
From 12 pm to 5:59 pm	16	50.0	6	17.6	
From 6 pm to 11:59 pm	6	18.8	12	35.3	

B: Pearson's Chi-square test of association; C: Fisher's exact test (Monte Carlo simulation). E: Percentages obtained based on total cases in each Covid-19 classification.

Source: Prepared by the authors.

In the comparison of the type of ventilation in relation to the characteristics of shift/period and the type of care, a statistically significant association occurred, about the latter a statistically significant association occurred ($p<0.001$). The result pointed out that the types of ventilation -

room air 85.7% ($n=6$) and nasal catheter type 80.0% ($n=12$) were associated with "Care". Mechanical ventilation was significantly associated with "Transport", 10.0% ($n=18$). Between the type of ventilation and shift/period, no significant result was detected.

Table 4: Ventilation mode by type of assistance and service shift of the Mobile Emergency Care Service of Taquara, Rio Grande do Sul, 2021.

Variables	Ventilation Mode ^E				P
	Room air	Hudson	Nasal catheter	Mechanical	

	(n=7)		(n=24)		(n=15)		ventilation (n=18).		<0.001 _c
	no	%	n	%	No	%			
Type of Assistance									
Care	6	85.7%	9	37.5%	12	80.0%	0	0.0%	
Transport	1	14.3%	1	62.5%	3	20.0%	18	100.0%	
			5						
Shift									
From 00:00 to 05:59	1	14.3%	4	16.7%	1	6.7%	4	22.2%	0.135 ^c
From 6 am to 11:59 am	two	28.6%	6	25.0%	6	40.0%	two	11.1%	
From 12 pm to 5:59 pm	1	14.3%	9	37.5%	two	13.3%	10	55.6%	
From 6 pm to 11:59 pm	3	42.9%	5	20.8%	6	40.0%	two	11.1%	

C: Fisher's Exact test (Monte Carlo Simulation). E: Percentages obtained based on the total number of cases in each ventilation classification

Source: Prepared by the author.

DISCUSSION

The results found in this study are similar to those found by the authors in 2017⁽⁸⁾, in their investigation regarding the epidemiology of trauma in care of the SAMU of Novo Hamburgo/RS in the first quarter of 2015, in which it was also observed the predominance of males 61.94% of cases. And reinforced by the study conducted in the SAMU of Cuiabá in Mato Grosso do Sul, which found similar data when the total number of 1,893 cases, 62.3% were male and 32.3% were female⁽⁹⁾.

The higher number of male patients seen may be related to the factor that men constantly used the services due to the aggravation of diseases. Women seek other services in the health care network, such as Primary Health Care (PHC), to perform preventive actions. In contrast, men tend to delay seeking care and are resistant to

seeking health promotion and prevention services⁽¹⁰⁾.

A study conducted in an emergency room in the city of Joinville, Santa Catarina, in 2015, showed some reasons why men do not seek care in the Basic Health Unit. They point to numerous arguments such as lack of time to seek health services, also linked to the fear of losing their jobs. It was also observed that users seek health services recognizing the practices referring to the immediate cure, because preventive actions demand time and for these men, would cause a financial loss, reinforcing the results found in this study, where most patients are male⁽¹¹⁾.

In the same study presented by the author in 2017⁽⁸⁾ performed in the first quarter of 2015 in the SAMU of Novo Hamburgo/RS, showed the difference between the average age, 37.83 years for the study of Novo Hamburgo, while the

average of the present study is 59.7 years, the study conducted in the Paranhana valley showed that the prevalent age in care reached predominantly middle-aged and elderly patients⁽⁸⁾.

Results found in the SAMU of Novo Hamburgo in 2015 8 show similarities between the months of care, referring to this study that showed a predominance of care in March with 37.1% and this study showed 27.3% of care in the same month.

In another similar study in the city of Ijuí, Rio Grande do Sul, the Advanced Support Unit (USA) of the Mobile Emergency Care Service (SAMU) attended 624 patients between September 2011 and August 2012. Of this total 433 (69.4%) of the calls were requests for rescue and 191 (30.6%) for transportation, while the one in this study showed different results, which were 29 (43.9%) for COVID-19 care and 37 (56.1%) for transportation⁽¹²⁾.

In the city of Porto Alegre/RS in the first quarter of 2016, 854 calls were made through the Advanced Support Unit (USA), which was made by telephone contact with the victims and their families and obtained the following results: 164 calls from the USA, being only 1.8% (n=3) exclusive for transportation, which presented different results from the present study that showed the superiority of 56.61% (n=37)⁽¹³⁾.

Reinforced by a study in Montes Claros⁽³⁾, Minas Gerais, which observed that for 26.03% (n=3,350) of the care provided, the Advanced Support Unit (USA) was used to transfer the patient to highly complex care or other cities while the present study presentation in Vale do Paranhana, used in 1005 of the attendances the Advanced Support Unit (USA).

Regarding the time of the service, the teams were called during the period from (06:00) in the morning to (23:59) at night. In the period between (00h00min) and (05h59min), there is a decrease in the number of calls, meaning only 14.3%. The reduction in calls during the night was also observed in Ribeirão Preto/SP¹⁴ and Ijuí in Rio Grande do Sul¹⁵, respectively, showed similar data for this study in which 34.8% (n=16) occurred in the hours from 12:00 pm to 5:59 pm and there was a decrease from 00:00 am to 5:59 am.

Research undertaken in southern Brazil in 2009¹⁶, during the Influenza A (H1N1) pandemic, showed that 93.3% required mechanical ventilation. In Mexico, results pointed out that 56% of the patients seen required mechanical ventilation⁽¹⁷⁾. In Canada, in 2019 a study revealed showed that 81% of patients seen, required invasive mechanical ventilation⁽¹⁸⁾. In Paraná, another study conducted indicated that ventilatory support was required in 73% of patients. While the

use of mechanical ventilation presented itself in 27.3% (n=18) of patients in the present study⁽¹⁹⁾.

CONCLUSION

Based on the data found, it is possible to recognize the need for actions that involve inter-sectoral participation and produce an impact on the current reality identified, guarantee the qualification and maintenance of the services provided by the SAMU and hospital units for the care of patients affected by COVID-19, improve the flows of the health care networks to ensure the quality of care, and preventive actions on this issue.

One limiting factor was the lack of publications related to the transportation of patients with COVID-19. The results showed the importance of conducting further studies on the transportation of patients with COVID-19 in this location and the establishment of improvement actions based on the indicators found that subsidize the management and contribute to the quality of care and the living conditions of individuals in this municipality.

This study's results are expected to support the practice of care and management, overcoming the obstacles encountered, enabling the knowledge and development of new studies on the transportation of patients with COVID-19, and improving the quality of care.

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