

ASSOCIATION OF THE FREQUENT USERS PROFILE WITH THE CHARACTERISTICS OF USING AN EMERGENCY SERVICE

ASSOCIAÇÃO DO PERFIL DE USUÁRIOS FREQUENTES COM AS CARACTERÍSTICAS DE UTILIZAÇÃO DE UM SERVIÇO DE EMERGÊNCIA

ASOCIACIÓN DEL PERFIL DE USUARIOS FRECUENTES CON LAS CARACTERÍSTICAS DE USO DE UN SERVICIO DE EMERGENCIAS

Bianca Campos Teixeira Moniz Frango ¹
Ruth Ester Assayag Batista ²
Cássia Regina Vancini Campanharo ²
Meiry Fernanda Pinto Okuno ²
Maria Carolina Barbosa Teixeira Lopes ²

¹ Hospital 9 de Julho. São Paulo, SP – Brazil.
² Universidade Federal de São Paulo – UNIFESP, Escola Paulista de Enfermagem. São Paulo, SP – Brazil.
Corresponding author: Bianca Campos Teixeira Moniz Frango. E-mail: biancamoniz@hotmail.com
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ABSTRACT

Objective: to characterize the profile and outpatient care of frequent users of an emergency service, and to associate the sociodemographic and clinical patterns of users with the purpose of the emergency service. **Method:** Retrospective analysis and analytical examination performed at the Emergency Department of a university hospital, located in the city of São Paulo. Were used Patient records who sought emergency care at least four times in a twelve-month period, from September 2013 to August 2014. **Results:** Included 480 patient records (2,808 visits). The mean number of visits was 5.85, and the sample ranged from 4 to 28 visits. 44.4% of the patients were classified as green after a risk classification, 13.1% as orange and 8.1% as red, and the majority of these visits were performed on Mondays. 69.1% had the outcome of hospital discharge. Non-urgency visits predominated. **Conclusion:** Emergency services can develop strategies together with Basic Health Units that facilitate case management to fully meet users needs at the appropriate level of care, implementing a system flow and counter flow of patients.

Keywords: Emergency Service, Hospital; Health Services Misuse; Health Services Needs and Demand.

RESUMO

Objetivo: caracterizar o perfil e os atendimentos dos usuários frequentes de um serviço de emergência e associar as características sociodemográficas e clínicas dos usuários com as características de utilização do serviço. **Método:** estudo retrospectivo e analítico realizado no serviço de emergência de um hospital universitário localizado no município de São Paulo. Foram incluídos prontuários dos pacientes que procuraram o serviço de emergência no mínimo quatro vezes num período de 12 meses entre setembro de 2013 e agosto de 2014. **Resultados:** incluídos 480 prontuários (2.808 atendimentos). A média de atendimentos foi de 5,85, sendo que a amostra variou de quatro a 28 atendimentos. Foram classificados como verdes após a classificação de risco 44,4% dos pacientes; como laranja, 13,1%; e como vermelho 8,1%, sendo que a maioria desses atendimentos foi realizada às segundas-feiras; 69,1% tiveram como desfecho a alta hospitalar. Predominaram os atendimentos não urgentes. **Conclusão:** os serviços de emergência podem elaborar estratégias junto com as unidades básicas de saúde que facilitem o gerenciamento dos casos a fim de suprir integralmente as necessidades dos usuários no nível adequado de assistência, implementando um sistema de fluxo de referência e contrarreferência dos pacientes.

Palavras-chave: Serviço Hospitalar de Emergência; Mau Uso de Serviços de Saúde; Necessidades e Demandas de Serviços de Saúde.

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RESUMEN

Objetivo: caracterizar el perfil y la atención de usuarios frecuentes de un servicio de emergencias y asociar sus características sociodemográficas y clínicas con las del servicio. **Método:** se trata de un estudio retrospectivo y analítico llevado a cabo en el servicio de urgencias de un hospital universitario de la ciudad de San Pablo. Se incluyeron los expedientes de los pacientes que se dirigieron al servicio de emergencias al menos cuatro veces durante doce meses, entre septiembre de 2013 y agosto de 2014. **Resultados:** Incluidos 480 expedientes (2.808 consultas). Hubo un promedio de 5,85 consultas y la muestra varió de 4 a 28 consultas. Después de la clasificación de riesgo 44,4% de los pacientes fueron clasificados como verde, 13,1% como naranja y 8,1% rojo y la mayoría de estas consultas ocurrieron los lunes. El 69,1% de los pacientes tuvo alta hospitalaria. Los datos indican el carácter no urgente de las consultas. **Conclusión:** los servicios de emergencias deben elaborar estrategias en conjunto con las unidades básicas de salud para facilitar la gestión de los casos con la finalidad de satisfacer plenamente las necesidades de los usuarios con buena atención, implementando un sistema de flujo de referencia y contra-referencia de los pacientes.

Palabras clave: Servicio de Urgencia en Hospital; Mal Uso de los Servicios de Salud; Necesidades y Demandas de Servicios de Salud.

INTRODUCTION

Currently, the reality of emergency services (ES) worldwide is overcrowding, and this situation becomes more worrying considering that the estimate will be a 46% increase in the demand for hospital beds until 2027, caused by the increase of the life expectancy of the population. Overcrowding is characterized by all occupied service beds, patients bedridden in the corridors, waiting time over one hour for care, high pressure for new care, and tension by the care team.¹

ES assists a considerable volume of patients that could be attended in services of less complexity. However, these services receive little encouragement from the public power to care for these patients, do not have the adequate physical structure for such assistance, nor they have the necessary materials for care, as well as professionals trained to do it. Also, primary care is organized to perform scheduled care, causing surplus demand to be referred informally to ES.²

The Family Health Strategy (ESF) was implemented in large urban centers in different ways, which becomes a problem for its consolidation and to be an agent in changes in practices. With the structural problems typical of large cities, the strategy ends up being inserted peripherally and without major impacts on the organization of basic health actions. Thus, the traditional model of care is maintained, with health cut by public health programs, instability of promotion and surveillance actions, focusing on spontaneous demand, disease, and medical professional care. The ESF is a paradigmatic, historical, procedural and tense change in political conflicts in the health system. Therefore, deviations in the principles have intrinsic structural causes.³ Thus, the demand for hospital services is due to the fact that they constitute complex institutions with technological resources, a multi-professional and interdisciplinary approach, so their actions include health promotion, diagnosis, treatment and rehabilitation.⁴

The population believes that ES provides fast, safe and effective care because it has the capacity to handle the most serious cases. This fact, associated with dissatisfaction with the primary care services, leads to overcrowding of the ES.² Whether,

in national or international experiences, it is a common reality that ES is the main entry point of the patient into the health system. A study carried out in southern Brazil showed that 58.2% of the patients reported having sought the emergency room because they believed that this service would be more able to assist them than the health units.³

In this context, a growing interest was directed to a group of patients that directly contributed to this number of visits to the services, which are called frequent patients (FP). The threshold used in the studies ranges from three to 20 service visits in a one-year period.⁵⁻⁷

In a study of 49,603 PFs performed between 2000 and 2001, there were four visits representing 25% of all patients in the service. Therefore, they would be administratively and economically significant. When defined as four or more annual visits, PFs have 4.5 to 8.0% of all patients and 21.0 to 28.0% of all visits.⁸

PFs are mostly white, younger than 65 years old, with a mean age of 40 years old, becoming sicker than occasional patients and more likely to be hospitalized than any other patient.⁹ A study conducted with PF in Rio Grande do Sul, Brazil, has shown that some patients attribute the various visits to ES to chronic diseases, that is, non-emergency conditions that could be met in other services.¹⁰

In response to this problem, institutions around the world, such as Australia, Canada, the United States, the United Kingdom, Sweden, the Netherlands and Spain performed targeted interventions for PFs with the objective of reducing the number of annual visits, treating their comorbidities and meet their social needs. Interventions include individualized care plans, case management, and partnerships with primary care.¹⁰⁻¹²

OBJECTIVES

Because of the overcrowding of the ES, the objectives of this study were to characterize the profile, complaints, and care of the PFs and to associate sociodemographic and clinical characteristics with the characteristics of the service use.

METHODS

This is a retrospective and analytical study performed in the ES of a university hospital located in the city of São Paulo, of high complexity, in which about 1,000 patients are attended daily in the ES.

Records of patients over 18 years old who sought ES at least four times in the 12-month period (September 2013 to August 2014) were included in the study. The access to the medical records was authorized by the coordination of the institution and it was done through online access since the medical records are digitized. The search occurred in November and December of 2014 in the institution.

To define the sample size for the service profile of the PFs, the sample size was used for the proportion. The parameters used were p , that is, the proportion of individuals with the characteristic of interest in the population. There was 50% ratio, considered as the "worst case"; d , that is, the desired difference between sample proportion and population proportion (sample error). A sample error of 5% (standard) was used; α , that is, level of significance (bilateral). A significance level of 5% (standard) was used. Considering these parameters, the study was composed of 480 PFs, which totaled 2,808 visits.

The first 40 patients from each month, from September 2013 to August 2014 were included, selected to avoid selection bias. The first patient care was selected to identify the patient's profile. Return visits were excluded for the delivery of test results, medication administration, acupuncture, and incomplete data sheets.

To obtain the data, the ES service record was used, which contains data such as age, gender, referred skin color, origin, ES arrival time, day of the week and month of care, main complaint according to the compromised organ system, signs and symptoms presented, pain score reported by the patient, personal antecedents and life habits, color of risk classification at the end of the evaluation performed by the nurse, medical specialty of the attendance, diagnostic hypothesis, requested tests and outcome of the patient. The data were inserted into a spreadsheet.

At the study hospital, the risk classification is performed by nurses and an institutional protocol is used. The risk rating scale categorizes patients into five priority levels, which are represented by color. They are red (emergency, patient should receive immediate medical attention); orange (patient should be evaluated by the doctor within 10 minutes); yellow (patient should be evaluated by the doctor within 60 minutes); green (patient should be evaluated by the doctor within 120 minutes); and blue (the patient can wait up to 240 minutes to be assisted).¹¹

This study was approved by the Research Ethics Committee of the Federal University of São Paulo (CAAE 40827514.7.0000.5505).

For descriptive analysis of the categorical variables, frequency and percentage were calculated. For the descriptive analysis of the continuous variables, the mean, standard deviation, median, minimum and maximum were calculated. The chi-square test

was used to compare the categorical variables by severity (color of the risk classification) and, when necessary, the likelihood ratio test. To compare age by the color of the risk classification, variance analysis (ANOVA) was used, which was also used to compare the variables of care with the categorical variables. Pearson's correlation coefficient was used to relate age to care variables. A significance level of 5% (p -value <0.05) was adopted.

The study aims to contribute to the creation of strategies together with the basic health units for the management of cases to meet the needs of patients at the appropriate level of care, contributing to a better resolution of the health-disease process of patients and generating a new flow of patients within the health system, effective and dynamic.

RESULTS

In this study, there were 480 PFs of the ES included. There was a predominance of female patients ($n=310$, 64.6%) and the age ranged from 18 to 98 years old, with a mean of 54.2 (± 20.4). Patients classified as red according to the protocol were significantly older than those classified as blue ($p=0.0352$). There was no statistically significant relationship between gender and color of the risk classification (RC).

The prevalent comorbidity was systemic hypertension ($n=227$, 47.3%), and less frequently heart disease ($n=106$, 22.1%), diabetes mellitus ($n=84$, 17.5%), and pneumopathies ($n=52$, 10.8%). Patients who reported previous stroke had a higher percentage of classification in red and orange ($p = 0.0301$), and patients with heart disease presented a higher percentage of red classification ($p = 0.0018$) (Table 1).

Patients were given daily medication ($n=321$, 66.9%) as hypotensive agents ($n=150$, 31.3%) and diuretics ($n=102$, 21.3%). There was no statistically significant relationship between medications in use and RC color. Regarding lifestyle, some patients were smokers ($n=58$, 12.1%) or alcoholics ($n=35$, 7.3%). Some patients reported having allergies ($n=85$, 17.7%) and had undergone some surgery ($n=121$, 25.2%).

Some patients reported a psychiatric illness ($n=22$; 4.5%) such as depression ($n=13$; 59%), panic disorder ($n=3$, 13.6%) and bipolar affective disorder ($n=3$, 13.6%). However, 7.9% ($n=38$) of the patients used medications such as antidepressants ($n=30$, 6.3%) or antipsychotics ($n=7$, 1.5%).

In this research, it was observed that 2,808 attendances of the PFs were performed. The mean number of visits per patient was 5.85 (± 2.79), and the sample ranged from four to 28 visits. Patients who had four visits during the year were 25.4% of the total attendance of the PFs, and a single patient who returned 28 times corresponded to 0.9% of the total. Patients who performed previous surgeries had a higher number of visits ($p=0.0309$) when compared to those who did not.

Table 1 - Association of age and comorbidities of study patients with categories of risk classification. São Paulo, SP, Brazil, 2016

Risk classification	Red	Orange	Yellow	Green	Blue	Total	p-value
Age							
Average (SD)	59.93 (18.01)	56.73 (21.2)	53.26 (21.0)	54.05 (20.35)	41.4 (17.67)	54.25 (20.46)	0.0352
Median	63.5	64	54.5	55	36	55	
Min-max	21-92	22-95	18-97	19-98	21-82	18-98	
Total	44	45	120	256	15	480	
Stroke							
No	38 (8.5%)	40 (8.9%)	109 (24.3%)	246 (54.9%)	15 (3.3%)	448 (100%)	0.0301*
Yes	6 (18.8%)	5 (15.6%)	11 (34.4%)	10 (31.3%)	0 (0%)	32 (100%)	
Total	44 (9.2%)	45 (9.4%)	120 (25%)	256 (53.3%)	15 (3.1%)	480 (100%)	
Cardiopathy							
No	24 (6.4%)	34 (9.1%)	93 (24.9%)	211 (56.4%)	12 (3.2%)	374 (100%)	0.0018
Yes	20 (18.9%)	11 (10.4%)	27 (25.5%)	45 (42.5%)	3 (2.8%)	106 (100%)	
Total	44 (9.2%)	45 (9.4%)	120 (25%)	256 (53.3%)	15 (3.1%)	480 (100%)	

The analysis of variance (ANOVA) was used.

Almost all patients (n=2752, 98.0%) were coming from their own homes. In only 1.7% (n=47) of the visits, the patients were referred from other health services, such as outpatient clinics, basic health units or other hospitals, and 0.3% (n=9) came from the street. Table 2 shows that patients from the same residence were more classified in green and blue, and those from other health services in the red color (p<0.0001).

The private transport medium was the most used by PF (n=2742, 97.6%). In 1.2% (35) of the visits, the patients were taken to the ES by the SAMU or rescue. These attendances had a higher percentage of RC in the red color, and the PFs

that sought the service through their own transport had a higher percentage of classification in yellow, green and blue (p<0.0001) (Table 2).

The period of greatest demand for the service was the morning (n=1027, 36.6%), and the lowest demand was in the night II (n=207, 7.4%), which included the period from 0 to 5:59. The PFs that entered the dawn showed a high percentage of RC in the red color and those that arrived in the morning had a green color (p=0.0029) (Table 2).

The recurrent days of the week were Monday (n=496, 17.7%) and Wednesday (n=442, 15.7%) and the least recurrent days were Saturday (n=313, 11.1%) and Sunday (n=334, 11.9%).

Table 2 - Association of origin, means of transport, time of arrival at ES and laboratory tests of study patients with categories of risk classification. São Paulo, SP, Brazil, 2016

Risk classification	Red	Orange	Yellow	Green	Blue	Total	p-value
Origin							
Home	204 (7.4%)	356 (12.9%)	843 (30.6%)	1240 (45.1%)	109 (4%)	2752 (100%)	<0.0001*
Others	24 (42.9%)	11 (19.6%)	13 (23.2%)	8 (14.3%)	0 (0%)	56 (100%)	
Total	228 (8.1%)	367 (13.1%)	856 (30.5%)	1248 (44.4%)	109 (3.9%)	2808 (100%)	
Transportation							
Own	194 (7.1%)	353 (12.9%)	845 (30.8%)	1241 (45.3%)	109 (4%)	2742 (100%)	<0.0001
Others	34 (51.5%)	14 (21.2%)	11 (16.7%)	7 (10.6%)	0 (0%)	66 (100%)	
Total	228 (8.1%)	367 (13.1%)	856 (30.5%)	1248 (44.4%)	109 (3.9%)	2808 (100%)	
Time of arrival at ES							
0 to 5:59	27 (13%)	36 (17.4%)	56 (27.1%)	77 (37.2%)	11 (5.3%)	207 (100%)	0.0029*
6 to 11:59	72 (7%)	112 (10.9%)	308 (30%)	496 (48.3%)	39 (3.8%)	1027 (100%)	
12 to 17:59	74 (7.6%)	127 (13%)	296 (30.4%)	441 (45.2%)	37 (3.8%)	975 (100%)	
18 to 23:59	55 (9.2%)	92 (15.4%)	196 (32.7%)	234 (39.1%)	22 (3.7%)	599 (100%)	
Total	228 (8.1%)	367 (13.1%)	856 (30.5%)	1248 (44.4%)	109 (3.9%)	2808 (100%)	

*Chi-square test. Others: clinics, UBS or other hospitals.

The visits performed on Mondays had a higher percentage of RC in the green color ($p=0.0020$). The visits performed in the months of January, May, July, and August had more patients in the yellow category; and in the period from September to December they had green color ($p<0.0001$).

Patients complained of respiratory distress ($n=477$, 17%), dyspnea ($n=209$, 43.8%), cough ($n=172$, 36%) or ventilator-dependent chest pain ($n=51$; 10.6%); muscle pain ($n=413$, 14.7%), such as lower limb pain ($n=80$, 19.3%), lumbar spine ($n=78$, 18.8%) and feet ($n=40$, 9.6%); abdominal pain ($n=85$, 28.5%), vomiting ($n=56$, 18.7%) and increased abdominal volume ($n=54$, 18.1%); nonspecific complaints ($n=261$, 9.3%), as nonspecific malaise ($n=76$, 29.1%), fever ($n=29$, 11.1%) and generalized algia ($n=29$; 11.1%); and neurological ($n=255$, 9.1%), such as headache ($n=121$, 47.4%), dizziness ($n=54$, 21.1%) and convulsive crisis ($n=15$, 5.8%).

The less frequent complaints were endocrinological ($n=12$, 0.4%), such as hypoglycemia or hyperglycemia; ($n=19$; 0.7%), as allergic reactions (generalized pruritus or oral cavity edema); and traumas ($n=22$, 0.8%), such as falling from height and vehicular accidents. There was no significant statistical association between gender, age, personal history, life habits and medication use with complaints reported by PF.

Treatments considered trauma or polytrauma had a higher percentage of RC in red color. The attendances that had the musculoskeletal diseases as complaint, such as pain in lower limbs, lumbar spine and feet; skin and attachments, such as lesions and abscesses; and otolaryngological complaints, such as otalgia, odynophagia and nasal bleeding, present a higher percentage of RC in the green color ($p<0.0001$). Most patients were classified as green ($n=1248$, 44.4%) and yellow ($n=856$, 30.5%), with the lowest percentage being orange ($n=367$, 13.1%), red ($n=228$, 8.1%) and blue ($n=109$, 3.9%).

The specialty with the greatest number of visits was the Clinical Medicine ($n=1154$, 41.1%), followed by Orthopedics ($n=328$, 11.7%) and General Surgery ($n=326$, 11.6%). Psychiatry ($n=51$, 1.8%) and neurosurgery ($n=9$, 0.3%) were the smallest number. The PFs attended by the Cardiology specialty was more classified in the red color, and those attended by Clinical Neurology were more classified as yellow and Orthopedics and Otorhinolaryngology in the green color ($p<0.0001$).

Concerning the pain complaint, there were 37.1% of the patients reporting some level of pain ($n=1043$), and 33.5% patients did not have the diagnostic hypothesis in the record ($n=940$). PFs diagnosed with hypoglycemia, hepatic encephalopathy, decompensated diabetes mellitus, diabetic ketoacidosis, traumatic brain injury, short-term injury and sepsis presented a higher percentage of RC in red color. Those diagnosed with bruising or muscular pain, low back pain, abscesses, dermatitis, herpes zoster, head and neck cancer and otitis exhibited a higher percentage of green color ($p<0.0001$).

The most requested tests were laboratory (blood) ($n=968$, 34.5%) and radiography ($n=705$; 25.1). The PFs classified in the colors red, orange and yellow had a higher percentage of laboratory tests. The patients were classified as red, with more radiographs, electrocardiogram (ECG) and tomography, and orange and yellow had urine and ultrasonography tests ($p<0.0001$).

The most observed outcome in the study sample was hospital discharge ($n=1939$, 69.1%), followed by hospital admission ($n=379$, 13.5%) and outpatient referral ($n=195$, 6.9%). Reduced portion was referred to UBS ($n=104$; 3.7%) and only one patient died. Other outcomes were return scheduling in the ES ($n=122$; 4.3%) and evasion of the PFs ($n=68$; 2.4%).

DISCUSSION

The results of this study revealed that the PFs were mostly female, corroborating national and international findings, although the predominance of females over males is small.¹² Usually when women are affected by some disease, there are diseases of low lethality, but that have a strong individual and social impact¹³, and seek care, which may justify the fact of female predominance. Regarding the mean age found among the UFs, it was 54.2 years old, similar to a study conducted in the South of the country, in which the mean age was 53.3 years old, as well as the range of variation (18 to 98 years old), which was 18 to 93 years old.¹² Studies show that PFs are older than casual patients⁹ and people of higher ages are more likely to become PF.⁵

In this demographic scenario, the most prevalent comorbidities found in PFs reinforce other studies, such as circulatory, endocrine or respiratory problems.^{5,10} A study conducted in Australia showed that the most recurrent chronic problems among PFs were systemic arterial hypertension, depression, asthma and diabetes.⁹ Faced with these facts, studies have associated high frequency of visits to ES with exacerbations of chronic diseases such as cancer, cardiovascular, pulmonary or gastrointestinal diseases.⁵ Complaints related to altered mental status were found in only 2.0% of the patient's assistants. This finding is inconsistent with two other studies: in one of them, there was 49% of the PFs had some mood disorder or schizophrenia,⁶ while such we found this personal antecedent in only 4.5% of our sample. In another international study, there were also high percentages of mental illness among patients who visited the emergency department 10 or more times, about half had a history of psychiatric illness.¹⁴ PFs are considered more vulnerable patients by the association of several factors such as divorce, unemployment, institutionalization, substance abuse and mental illness, which leads to a rate of 4.6 more hospitalizations for mental illness.¹⁵

Regarding the living habits, alcoholism was found in this study in 7.3% of the PFs, while another national study¹² ob-

tained a lower rate, 4.7%. This same study showed that 2.1% of the PFs were drug users, while in our study there were no drug users. The high alcohol intake rate can be considered, since other findings show lower rates, between 3 and 4%.^{5,6}

Considering the recurrence of the PFs that comprised the sample (four to 28 visits) of this study, it was concluded that it was smaller than the result found in another study¹², in which there was a variation from four to 58 consultations. It should be noted, that the average number of visits per patient was relatively similar, with 5.85 in this study and 6.59 in the other study. PFs who performed four visits in the period of our study represent 37.2% of the sample, and in that study, 24.4%. The PF who carried out 28 visits represents 0.2% of the sample, and in that study the PF who performed 58 visits represents 0.3% of the sample.¹²

Regarding the origin, most of the PFs (98%) came from their own homes, that is, they searched the service by spontaneous demand and used their own means of transportation to reach the service (97.6%). In RC, the patients from the residence were assigned, more frequently, yellow, green and blue, that is, they were classified as non-urgent care ($p < 0.0001$). This result may be related to the greater number of demand for spontaneous demand.¹² Some research has shown that the rate of PFs reaching ES by ambulances, such as SAMU or rescue is high, ranging from 10.4¹⁵ to 25%.¹⁵ Meanwhile, our study revealed a smaller number, 1.2%, as well as another survey¹¹ conducted in Brazil, which was 2.3%. Patients admitted to the service by this transportation had a higher percentage of RC in the red color ($p < 0.0001$), and it was possible to show the urgency of the visits.¹⁶ In only 1.7% of the visits, the PFs came from other services such as outpatient clinics or basic health units. It is a very low rate when compared to another survey conducted in Londrina, which showed that 16.2% of users were referred to these services.¹⁷

Regarding the period of the day that the patient seeks for care, the morning period was the one with the highest demand, which corresponded to 36.6% of the visits. This result corroborates a study¹² carried out in Porto Alegre, where 59.1% of the visits were performed in the same period. Monday and Wednesday were the days when the PFs most sought the service. This result is similar with another study,¹¹ which found the days Thursday (17.7%) and Friday (17.7%) as a result. The visits performed on Mondays showed a higher percentage of RC in the green color ($p = 0.0020$), that is, they were classified as non-urgent care. This finding emphasizes that on the day when there is a greater demand for ES, most of the visits are not urgent. Therefore, it could be performed in health services of less complexity.

Faced with this pattern of use of ES by the PFs, who seek care more commonly in the morning and on working days, it is inferred that the restrictions of the hours of operation of other health services are not an isolated cause as to the reasons for searching for the ES, since in those periods those services are in

operation. Other research has also shown this fact, both in the US⁶ and in Portugal.¹⁰

As for the reasons that motivated the search for ES, a systematic review of the literature⁶ revealed rates similar to those found in this study, such as respiratory complaints (17%), muscle complaints (14.7%) and gastrointestinal complaints (10.6%). A study carried out in Australia emphasized that PFs commonly have complaints related to clinical health problems, while non-frequent patients have more problems associated with external causes or traumas.¹⁸ This may in part justify the low incidence of cause-related complaints and traumas in this study.

Regarding risk classification, patients classified as red (6.9%) and blue (2%) had values similar to those of the study carried out in the South of the country.¹⁰ However, our study found lower values (18%) and yellow (38.6%), and a higher percentage of visits classified as green (34.6%).¹⁰ Another study carried out in the interior of São Paulo also showed that most patients of ES are classified as non-urgent (18%) and low risk (67%).

Regarding the medical specialties that had the greatest number of visits, there were registered Medical Clinic, Orthopedics, and General Surgery. Such finding goes to the research conducted in the United States of America, which found such specialties related to complaints as problems with alcohol, back pain, and abdominal pain.²⁰

Regarding the number of procedures performed, the PFs classified into categories considered to be more serious (red, orange and yellow) had a higher percentage of tests, such as X-rays, ECG, and tomography. A study carried out in Belo Horizonte concluded that the RC of the Manchester Screening System was considered a predictor of the severity of the patient. This finding can be compared with the number of exams performed by the PFs classified in the colors red, orange and yellow.¹¹

Regarding the patient outcomes, the most frequent in this study was hospital discharge (69.1%), a higher value when compared to the survey¹² performed in the South of Brazil, which found a rate of 46.5%. The hospital admission rate was 13.5%. Surveys have shown that PFs are more likely to be hospitalized aftercare in ES than casual patients.^{5,6} Authors show different mortality rates among PFs, but all indicate that indices are higher than in occasional patients.^{5,12} Research conducted in Brazil found that 3.9% of PFs died in ES, while our study found 0.2%.¹²

It is important to emphasize that in a scenario of high demand in the ESs, the PFs have a significant impact on the functioning of these units and challenge the resolution of the primary health services.¹² Because they are a global reality, emergency units have been the focus of studies and some implemented interventions showed positive results. A US study aimed at the better coordinating care and reducing visits by PFs to ES showed that after naming a community health assistant to assist patients in identifying their needs, as well as

developing a clinical staff plans of interdisciplinary care, there was a reduction in visits to ES and also in costs.²¹ Other interventions have been implemented, such as management of the cases of these PFs by multi-professional teams, carried out by telephone contacts and appointment of a referral nurse from the basic network at the discharge of the ES.²² However, some strategies are difficult to implement in large urban centers.

We emphasize that the population is affected by socio-economic issues and by a high prevalence of chronic diseases, which shows the importance of the healthcare network, which could impact on the reduction of demand by the PFs for the ESs. Assistance is needed, ranging from continuous actions to prevent injuries to exacerbations. It is important to emphasize that even low complexity cases must be welcomed and assisted according to their needs to ensure SUS principles for its patients. Qualified and continuous multidisciplinary care, high effective guidelines and awareness of patients about health care networks can reduce the use of ESs. Communication between the different health services is essential, forming a flow of reference and counter-reference, so patients always have continuity in treatment.

CONCLUSION

In this study, almost all patients were from their own home by private transportation. Most of them were classified in green color and the period of more demand for the service was the morning. The main complaints were respiratory, muscular and gastrointestinal. The specialties with the greatest number of appointments were Clinical Medicine, Orthopedics, and General Surgery. The PFs attended by the specialty of Cardiology were more classified in red color and those attended by Orthopedics and Otorhinolaryngology were classified in green color. Those classified as red have used more specific diagnostic features. Most of the PFs were discharged from hospital and only a small portion was referred to UBS.

The ESs can contribute to the identification of the PFs and develop strategies together with the basic health units that facilitate the management of the cases. In this way, it improves the articulation between health systems to fully meet the needs of patients at the appropriate level of care. Also, measures such as specific discharge guidelines and awareness can help improve this picture.

It is recommended to carry out studies that implement ways of performing a flow of care with reference and counter-reference of the patients to verify the decrease of the overcrowding of the ESs.

This study was limited to having been carried out in a single center and having found the incompleteness of some customer service records.

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