

Factors related to supportive reception with risk classification of the elderly in emergency facilities

Fatores relacionados ao acolhimento com classificação de risco a idosos em unidades de pronto atendimento

Factores relacionados con la acogida de ancianos con clasificación de riesgo en unidades de atención de emergencia

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ABSTRACT

Objective: to examine supportive reception with risk classification for the elderly in emergency facilities in a medium-sized municipality in southern Brazil. **Method:** in this exploratory, cross-sectional, quantitative study, data were collected, from January to March 2016, from medical records of older adults treated at two emergency facilities. Descriptive analysis of the data used the R program and the Chi-square test. **Results:** 2,927 elderly people were treated at these services, most of them women (55.7%), between 60 and 69 years old (48.7%), most often on Mondays (18.0%), and classified green (81.6%). **Conclusion:** high demand was found from younger elderly, mainly for conditions amenable to primary health care. **Descriptors:** User Embrace; Triage; Emergency Nursing; Aged.

RESUMO

Objetivo: analisar o acolhimento com classificação de risco a idosos em unidades de pronto atendimento em um município de médio porte do Sul do país. **Método:** Estudo transversal e exploratório de abordagem quantitativa. Os dados foram obtidos em prontuários de idosos atendidos em duas unidades de pronto atendimento. A coleta de dados ocorreu no período de janeiro a março de 2016. Foi realizada análise descritiva dos dados utilizando o programa R e o teste Qui-quadrado. **Resultados:** Foram identificados 2.927 idosos atendidos nesses serviços, a maioria mulheres (55,7%), entre 60 e 69 anos (48,7%), o dia da semana com maior número de atendimento foram as segundas-feiras (18,0%), com destaque para a classificação verde (81,6%). **Conclusão:** Evidenciou-se alta procura de idosos jovens, sobretudo por condições sensíveis à atenção primária à saúde. **Descritores:** Acolhimento; Triagem; Enfermagem em Emergência; Idoso.

RESUMEN

Objetivo: analizar la acogida de ancianos, con clasificación de riesgo, en unidades de atención de emergencia de un municipio mediano del sur del país. **Método:** estudio transversal y exploratorio con enfoque cuantitativo. Los datos se obtuvieron de los registros médicos de los ancianos atendidos en dos unidades de atención de emergencia. La recolección de datos tuvo lugar de enero a marzo de 2016. Se realizó un análisis descriptivo de los datos utilizando el programa R y la prueba de Chi-cuadrado. **Resultados:** se identificó que 2.927 ancianos fueron asistidos en estos servicios, la mayoría mujeres (55,7%), entre 60 y 69 años (48,7%), los días de la semana con la mayor cantidad de atención fueron los lunes (18,0%), con énfasis en la clasificación verde (81,6%). **Conclusión:** se evidenció una gran demanda en cuanto a ancianos más jóvenes, principalmente debido a condiciones sensibles a la atención primaria de salud. **Descriptor:** Acogimiento; Triaje; Enfermería de Urgencia; Anciano.

INTRODUCTION

Several estimates point out that the aged population in the world will rise from 554 millions in 2013 to approximately 1.6 billions until 2050. The phenomenon of population aging has shown far-reaching effects on the social, economic and especially health systems, as population growth is occurring in parallel with income inequalities, social support and gaps in health care due to complex patterns of disease burden and globalization of risk factors¹.

Such aspects are intensified in developing countries such as Brazil, as they have a lifetime of health risks associated with poverty and inadequate access to health care, which has resulted in aged people with higher incidence and prevalence of Chronic Non-Communicable Diseases (CNCDs)^{1,2}.

With the epidemiological transition, there is an increase in the exacerbations of chronic conditions in older adults, making them seek the health services more frequently, especially emergency units, which have been highlighted as a

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gateway for the users. These reasons can be justified by the emergency care modality, such as case management, 24-hour service, with guaranteed consultation and access to greater technological resources³.

In Brazil, the emergency context that has drawn the users' attention is represented by the Emergency Care Units (ECUs)^{4,5}. These are medium-complexity services, which aim at maintaining articulation with Primary Health Care (PHC), the Mobile Emergency Care Service (*Serviço de Atendimento Móvel de Urgência, SAMU*), Home Care and Hospital Care⁶.

In the same year when the ECUs were implemented, through the National Policy for the Humanization of Care and Management of the Unified Health System (*Sistema Único de Saúde, SUS*), the Ministry of Health published the document entitled "*Acolhimento e Classificação de Risco nos Serviços de Urgência*" ("Reception and Risk Classification in the Emergency Services"). The text deals with improving access to individuals, transforming the traditional method of entry by queues and order of arrival; proposing changes in the relationship between professionals and users regarding how to listen to their problems and demands, so that the approach to the patient goes beyond their complaints⁷.

Although risk classification provides humanization in the reception of individuals to the emergency services, it is known that some factors interfere in this practice, which has been the subject of research studies and debates among managers⁸. It is noted that, in the literature, some research studies address risk classification in different emergency services⁸, although the number of studies with older adults is scarce, mainly in the context of ECUs. Given the above, the following question was asked: Which is the relationship between risk classification and the gender, age, days of the week and month variables related to the care of older adults in ECUs from a municipality in Paraná?

Considering the importance of systematizing reception of older adults in order to provide qualified care in emergency situations, it is essential to conduct this research, whose objective was to analyze reception of older adults with risk classification in emergency care units from a medium-sized municipality in southern Brazil.

METHOD

This is a cross-sectional and exploratory study with a qualitative approach, developed in the two ECUs from a medium-sized municipality in northern Paraná (PR).

The municipality in question has the highest index of older adults among the eight municipalities of the state with more than 200,000 inhabitants. Currently, it has 397,436 inhabitants; of these, 54,190 are older adults, representing 13.6% of the population⁹. To attend to this contingent referring to the emergency intermediate complexity, the citizens count on two ECUs, both opened seven years ago. To preserve the identity of the institutions, they will be identified as ECU 1 and as ECU 2. ECU 1 is listed as size III, with 31 observation beds and three isolation beds; ECU 2 is classified as size II and has an observation room with 12 beds, including two isolation beds⁴.

The ECUs are open 24 hours a day, seven days a week, and reception is in charge by a nurse, who assesses the main complaint, signs and symptoms, preexisting comorbidities, medicines in use and priority of care. With this first approach, the professional classifies the care risk. The protocol used in the studied institutions is based on the Ministry of Health guidelines and uses four levels of risk classification: blue (non-urgent cases – they can wait up to 240 minutes), green (less urgent cases – they can wait up to 120 minutes), yellow (urgent cases – they can wait up to 60 minutes) and red (emergency cases – they require immediate care)⁷.

As inclusion criteria, all records of people aged 60 years or older who received care in the ECUs during November 2015 were selected.

Data collection was carried out between January and March 2016, using an instrument developed by the researchers, containing the following: sociodemographic data (age and gender) and care data (day of the week, day of the month and risk classification). Gender and age group were considered as the sociodemographic variables. The care data selected were the following: day of the week, day of the month, and risk classification. In this research, care in two emergency care units was considered as exposure, categorized as ECU 1 and ECU 2, and the outcome variable was the older adults' risk classification.

Subsequently, the data were categorized in a *Microsoft Office Excel* spreadsheet, version 2010, and checked for correction of possible typing errors. Absolute and relative frequencies were used in the description of the categorical variables. The Chi-square test was used to verify the proportions of the variables: gender, age groups, days of the week, days of the month and risk classifications. A statistical significance level of 0.05 was allowed. The statistical analysis procedures were performed with the aid of the *R software*.

The study was developed in accordance with the guidelines proposed by Resolutions 466/2012 and 510/16, and was approved by the institution's Standing Committee on Ethics in Research with Human Beings (Protocol #1,375,173).

RESULTS

Of the care services performed by the ECUs in November 2015, it is verified that 2,927 were offered to older adults, with 1,589 (54.3%) in ECU 1 and 1,338 (46.6%) in ECU 2. The participants' age varied from 60 to 103 years old, where almost half (48.7%) of the population assisted belonged to age group between 60 and 69 years old. Women predominated as the group which most sought the service (55.7%). The number of care services between the ECUs on the days of the week was similar, being 69.5% from Monday to Friday and 30.4% on Saturday and Sunday in ECU 1; whereas in ECU 2, the percentages were 65.4% and 34.5%, respectively (Table 1).

TABLE 1: Sociodemographic characterization, days when the services were offered, and risk classification of the care appointments by the ECUs. Maringá, PR, Brazil, 2016.

Variables	ECU 1		ECU 2		Total		p-value*
	N	%	N	%	N	%	
Gender							
Female	758	56.6	875	55.0	1,633	55.7	0.410
Male	580	43.3	714	44.9	1,294	44.2	0.430
Age in years old							
60 – 69	653	48.8	774	48.7	1,427	48.7	0.989
70 – 79	428	31.9	527	33.1	955	32.6	0.523
80 – 89	232	17.3	246	15.4	478	16.3	0.192
>90	25	1.8	42	2.6	67	2.2	0.203
Day of the week							
Weekdays	930	69.5	1,040	65.4	1,970	67.3	0.021*
Weekend	408	30.4	549	34.5	957	32.6	0.021*
Risk classification							
Blue	415	31.0	158	9.9	573	19.5	<0.001*
Green	470	35.1	787	49.5	1,257	42.9	<0.001*
Yellow	380	28.4	622	39.1	1,002	34.2	<0.001*
Red	73	5.4	22	1.3	95	3.2	<0.001*
TOTAL	1,338		1,589		2,927		

Note: *p-value<0.05 – Chi-square test.

In relation to the risk classification variables, different behaviors are noticed across the ECUs from the municipality. Although the numbers overlapped, in both services the green classification prevailed (less urgent cases) with 46.5% in ECU 2 and 35.1% in ECU 1. However, the second classification most used by the nurses was yellow (urgent cases) (39.1%) and, in ECU 1, it was blue (non-urgent cases) (26.1%). As for the other classifications, in ECU 2 it was followed by blue (9.9%) and finally, by red (1.3%). And, in ECU 1, 23.9% of the older adults treated were classified as yellow and 4.5% as red (Table 1).

In relation to the age stratifications associated with the risk classifications, significant differences are verified between the 60-69 and 80-89 age groups in the ECUs under study (Table 2).

TABLE 2: Distribution of the risk classification by age group of the ECUs from a municipality in Paraná. Maringá, PR, Brazil, 2016.

Age group	Risk classification																p-value*
	Blue		Green				Yellow				Red						
	ECU 1	ECU 2	ECU 1	ECU 2	ECU 1	ECU 2	ECU 1	ECU 2	ECU 1	ECU 2	ECU 1	ECU 2	ECU 1	ECU 2			
60-69	223	16.6	76	4.7	224	16.7	418	26.3	186	13.9	273	17.1	20	1.4	7	0.4	<0.001
70-79	112	8.3	57	3.5	161	12	262	16.4	123	9.1	199	12.5	32	2.3	9	0.6	0.083
80-89	77	5.7	21	1.3	73	5.4	92	5.7	63	4.7	128	8	19	1.4	5	0.3	<0.001
90-99	3	0.2	4	0.2	12	0.8	15	0.9	8	0.5	2	0.1	2	0.1	1	0.06	0.232
≥100	0	0	0	0	0	0	0	0	0	0	1	0.06	0	0	0	0	0.812
Total	415	31	158	9.9	470	35.1	787	49.5	380	28.4	622	39.1	73	5.4	22	1.3	

*p-value<0.05 – Chi-square test.

The days of the week presented a balanced distribution in the number of appointments between ECU 1 and ECU 2, which shows that there were more appointments on Monday, 241 and 286 (527), followed by Sunday with 220 and 283 (503) and by Saturday, with 188 and 239 (427) (Figure 1).

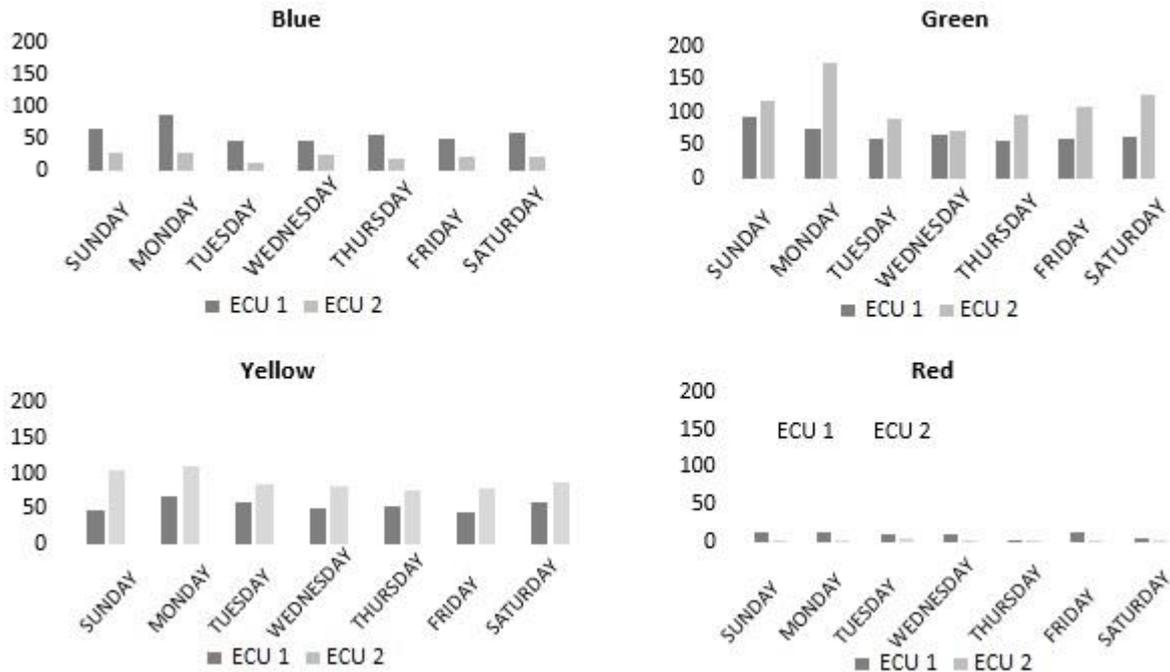


FIGURE 1: Distribution of the care appointments according to risk classification by day of the week in the ECUs, Maringá, PR, Brazil, 2016.

For the risk classifications, it is observed that the older adults seen in ECU 1 were more frequently classified as blue on Monday, followed by Sunday. On the other hand, ECU 2 presented the opposite: the greatest number of patients classified as blue was on Sunday, followed by Monday. As for green, in ECU 1 there were more appointments on Sundays, while in ECU 2 there were more on Mondays. Regarding the yellow classification, it was Monday in both units. Finally, the red classification was the most used on Sundays in ECU 1, and on Tuesdays in ECU 2 (Figure 1).

In relation to the appointments carried out on the days of the month, ECU 2 offered a greater number during almost the entire month, with a peak on the 21st. In ECU 1, the days with the most appointments were the 11th, 18th and 25th, with a low number on days 4, 12, 20 and 24 (Figure 2).

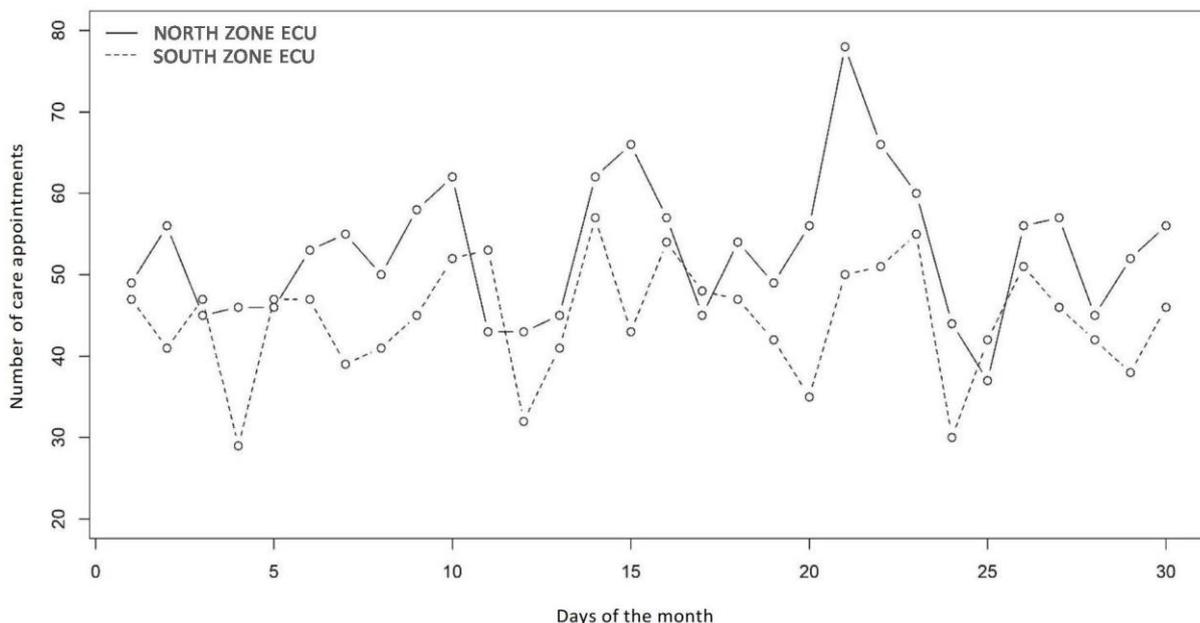


FIGURE 2: Daily appointments in the ECUs, Maringá, PR, Brazil, 2016.

DISCUSSION

In recent years, overcrowding in the emergency services has turned reception with risk classification into a primary tool in these points of the Health Care Network (*Rede de Atenção à Saúde*, RAS). This study allowed verifying the relationship between risk classification and variables such as gender, age group, days of the week and of the month, as well as between ECUs from a municipality in Paraná. The results show the need to standardize reception with risk classification and the emerging and effective importance of implementing the functions of Primary Health Care (PHC), in order to consolidate the Unified Health System () and offer qualified care to older adults.

There is predominance of assistance to women, with ECU 1 and ECU 2 assisting 56% and 55%, respectively. This result is similar to the one found in a research study carried out in an ECU from Minas Gerais, where 57% of the patients under study were female⁵. A number of studies point out that, in general, women seek the health services more often than men^{10,11}; this phenomenon can be related to the concern of this population about health care¹². In addition to that, there is the fact of the feminization of old age, due to factors such as male excess mortality¹³, and that the municipality studied has 56.5% of aged women¹⁴.

The age group that made the most use of the ECUs was that of individuals from 60 to 69 years old. This finding is repeated in several studies, indicating predominance of people in their productive age who seek emergency care^{6,10,15}. One of the conditions that justify the high demand of young older adults in the medium-complexity emergency service is the maintenance of their work activities, which makes it difficult to search for PHC, due to the service hours and to bureaucratic aspects of this care level⁴.

On the other hand, participation in the labor market and greater circulation in the urban perimeter contribute to increasing exposure to risk factors, such as traffic accidents and traumas, responsible for the high rate of access to the health system by mobile pre-hospital care among men aged 60 to 69 years old¹⁶. The aforementioned is a service that mediates users' access to the health services, especially the ECUs, which have an open door for the provision of intermediate-complexity care.

The fact of having more young older adults in the ECUs also indicates more frequent exacerbation of their chronic conditions. A research study carried out to identify the reasons that led older adults with Primary Care Sensitive Conditions (PCSCs) to seek the service of an ECU, identified that 49.6% were young older adults (60-69 years old) and the main complaints were related to diseases of the musculoskeletal system and connective tissue, as well as of the respiratory and circulatory systems⁴.

The potential use of emergency units is associated with the impossibility of solving these problems in PHC services, which is related to the use of the Manchester Risk Classification, as it characterizes cases as "non-urgent" or as "low urgency"¹⁰. It is observed that, in both ECUs in this study, the care of older adults with clinical situations that receive the PCSC blue and green classifications stood out, with 66.1% in ECU 1 and 59.4% in ECU 2. The results also point out the PHC weaknesses in performing its functions as care organizer and coordinator, which causes fragmentation of care and generates great challenges at all points in the RAS.

Such fact has worried managers and authorities at a global scale. In the literature, experiences from other countries are found to minimize the difficulties between the points of the RAS, and the development of policies with the objective of reducing the demand for emergency care services, by burdening unnecessary costs on the health system¹⁰. For example, in the United States of America, an intervention study was carried out to integrate users seen in emergency rooms with the PHC services¹⁶.

It is also known that the levers to reduce the unnecessary search for emergency services are also at the levels of the broader social determinants of health, such as income, employment, schooling, housing and crime levels¹⁰.

The study results point out discrepancies between the ECUs studied. In both, there was predominance of the green classification: 35.1% and 49.5% of the appointments in ECU 1 and ECU 2, respectively. However, when comparing the other classifications, it is verified that, in ECU 2, the older adults were classified as yellow (39.1%), blue (9.9%) and red (5.4%); whereas in ECU 1 they were classified as blue (31%), yellow (28.4%) and red (5.4%), respectively.

The screening system allows duly trained nurses to assign clinical priority to the patients based on the presentation of their signs and symptoms¹⁷. Although most of the nurses working in emergency services receive preparation from the institutional screening protocol, risk classification is not always standardized. Among the reasons are divergences of opinions, not only among nurses, but also among other team members; as well as the occurrence of severity sub-classifications and over-classification¹⁷.

Recognizing the physiological particularities of aging, it can be asserted that acute care in emergency services is increasingly complex, and that the assessment and management of older adults in these services is more time

consuming and requires specialized skills^{18,19}. Thus, there is an emerging need to implement permanent education actions for standardization in risk classification, in order to reduce the subjectivity bias attached to functionality and to the clinical decision process in the care provided to older adults²⁰.

The relationship between the risk classification and the days of the week shows that green was more attributed to Sundays by the nurses working in both ECUs. This finding shows that, as this is a population with acute complications, their clinical condition does not allow them to wait until one weekday, when the PHC services are operational.

It is noteworthy that the highest number of appointments, adding all risk classifications, was on Mondays in the two Units. This corroborates a research study showing that there is twice as much chance of seeking the emergency services on weekdays, sometimes establishing inappropriate use of the ECUs²¹. Similarly to other studies, it points to the disarticulation of the care network, mainly due to the population's irregular access to the other services and to the lack of PHC resoluteness^{10,22,23}.

Regarding the older adults' demand for emergency services throughout the month, it is worth noting that, although ECU 1 is classified as size III by the Ministry of Health, in ECU 2 there were more appointments. ECU 1 overlapped ECU 2's number of appointments only on three days: 11th, 18th, and 25th. This is a considerable fact, as the ECUs receive funding and offer resources according to their size classification. There was a higher number of appointments in the smaller Unit, pointing to the need for a review of the local and municipal management, in the investigation of possible differences and interventions in the difficulties faced for the care of users in these services.

Study limitations

As limitations, the study used secondary data referring to registration in the database, which depends on the information recorded by the Unit's professionals, and which can interfere with its quality. Another fact is that the study portrays the reality of the Units from one municipality, which can limit generalization of the findings. However, the results provide an analysis perspective for application to other realities, which represents one of the recommendations for new studies.

CONCLUSION

According to the risk classification categories with the studied variables, reception of aged individuals between the ECUs showed that young older adults have present frequent exacerbations of their chronic conditions, leading them to seek this care level, especially due to PCSCs and on Mondays. This characteristic represents certain fragmentation of the Care Network, with impairment of the entire health system.

From this study, it was possible to identify an important discrepancy between the number of appointments and the risk classifications of the Units. Such findings may help to guide training for standardizing reception with risk classification, in addition to contributing to the improvement of the PHC functions, in order to offer comprehensive and longitudinal assistance to the older adults, providing quality of life and, at the same time, consolidation of the SUS.

The results can also contribute to local management in the organization of the RAS, as they contain important data to assess and reorganize this point of care in the municipality, indicating the importance of this type of study being replicated in other locations as evaluative and management support for the health system.

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