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FACTORS ASSOCIATED WITH INADEQUATE HOSPITALIZATION OF OLDER ADULTS IN THE EMERGENCY SERVICE OF THE HOSPITAL EDGARDO REBAGLIATI MARTINS 2017

FACTORES ASOCIADOS A HOSPITALIZACIONES INADECUADAS DE ADULTOS MAYORES EN EL SERVICIO DE EMERGENCIA DEL HOSPITAL NACIONAL EDGARDO REBAGLIATI MARTINS 2017

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ABSTRACT

Introduction: Inadequate hospitalizations (IH) alter hospital management and much more when they are carried out in the elderly population; therefore, identifying the factors is relevant at the national and local levels. **Objective:** To determine the factors associated with IH in older adults in the Emergency Service (ES) of the Edgardo Rebagliati Martins National Hospital (HNERM) during 2017. **Methods:** Observational, analytical, cross-sectional study. A sample of 414 patients randomly selected from 18 250 patients admitted during the study period was selected. Collection forms were used, and medical records were reviewed. With the help of the SPSS 25 program, the Chi-square test was performed, and the simple Prevalence Ratio (PR) and adjusted (Rpa) were calculated. The level of significance was 5%. **Results:** The frequency of IH was 11,8%. The epidemiological factors associated with IH were ages from 75 to 84 years RPa=5,80 (2,20-15,27) and from 85 to more years RPa=8,22 (2,76-24,44), the female sex RPa=2,20 (1,11-3,10), the occupation as a housewife RPa=3,39 (1,13-10,17) and the accompaniment of the spouse RPa= 9,16 (2,59-32,38), child RPa= 3,72 (1,14-12,14), parents RPa= 8,50 (1,88-38,44) and siblings RPa=22,42 (5,78-86,97). The organizational factors associated with IH were internist treating physician RPa=2,90 (1,38-6,07) and admission morning shift RPa=4,84 (1.67-14.06). **Conclusions:** There are factors associated with IH in older adults in the SE of HNERM.

Keywords: Hospitalization; Adult; Management. (Source: MeSH - NLM).

RESUMEN

Introducción: Las hospitalizaciones inadecuadas (HI) alteran la gestión hospitalaria y mucho más cuando estas son realizadas en población adulta mayor, por tal la identificación de los factores es de relevancia en el ámbito nacional y local. **Objetivo:** Determinar los factores asociados a HI de adultos mayores en el Servicio de Emergencia (SE) del Hospital Nacional Edgardo Rebagliati Martins (HNERM) durante el año 2017. **Métodos:** Estudio observacional, analítico, transversal. Se seleccionó una muestra de 414 pacientes seleccionados aleatoriamente de 18 250 pacientes admitidos en el periodo de estudio. Se utilizaron fichas de recolección y se revisaron historias clínicas. Con ayuda del programa SPSS 25 se realizó la prueba Chi cuadrado y se calculó la Razón de Prevalencias simple (RP) y ajustada (Rpa). El nivel de significancia fue del 5%. **Resultados:** La frecuencia de HI fue de 11,8%. Los factores epidemiológicos asociados a HI fueron las edades de 75 a 84 años RPa=5,80 (2,20-15,27) y de 85 a más años RPa=8.22 (2,76-24,44), el sexo femenino RPa=2,20 (1,11-3,10), la ocupación ama de casa RPa=3,39 (1,13-10,17) y el acompañamiento del cónyuge RPa= 9,16 (2,59-32,38), hijo/a RPa= 3,72 (1,14-12,14), padres RPa= 8,50 (1,88-38,44) y hermanos RPa= 22,42 (5,78-86,97). Los factores organizativos asociados a HI fueron médico tratante internista RPa=2,90 (1,38-6,07) y turno mañana de admisión RPa=4,84 (1,67-14,06). **Conclusiones:** Existen factores asociados a las HI de adultos mayores en el SE del HNERM.

Palabras clave: Hospitalización inadecuada; Factores asociados; Protocolo de Evaluación de la Adecuación. (Fuente: DeCS BIREME).

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INTRODUCTION

All countries worldwide have experienced growth in the proportion of [1] people 60 years and over in the population, being called the older adult population [2]. According to statistics provided by the World Health Organization (WHO), in 2019, more than a billion people were 60 years of age or older, while by 2030, it is expected that one in six people in the world will be in this age range. In the year 2050, the proportion of this population group would be 22%, doubling the ratio identified in 2015 (12%)[3].

This new population distribution, known as population aging, began in high-income countries, such as Japan, Korea, France, Sweden, and the United Kingdom[4]. Still, later, specifically by 2050, two-thirds of this population will be concentrated in low- and middle-income countries[3].

The significant change in the world population causes each country to carry out a diversity of adaptations structured in the various social sectors [1] prioritizing health care because it is a basic need for every person. Therefore, a large part of health spending is provided to hospital services, with [5] making them effective during and for care. The rational use of beds and adequate hospital stay are valuable indicators of quality and management[6].

Under these indicators, it has been possible to identify that in some cases, health care may be unnecessary through the evaluation of inadequate hospitalizations (IH) [7] since these increase hospital costs, reduce the resources available for patients in critical situations, generate poor health services, increase the mortality rate and put the patient at risk of suffering from nosocomial infections, thereby altering[8].

Inappropriate hospitalizations are diverse worldwide , varying between 9% and 23% [9], while in China, this frequency is 5,6%, specifically in patients 65 years of age or older [7]. In the case of Europe, the rate of inappropriate hospitalization varies from 6% to 78% in elderly patients [8], while in Latin America, unjustified hospital admissions run between 6% to 54%[10]. And in the case of the national environment, the frequency of IH ranges from 1,8% to 11,7%[11,12].

In these hospitalizations, it has been possible to identify studies, mainly in the international environment, that have placed their associated factors, such as for example, sex, insurance coverage[13], service for which the patient was admitted, care shift [12], admission diagnosis, time of illness, among others. Still, these factors are linked to IH in the hospital setting but are not specific to the emergency service, as is done in this study.

Because in Peru, the process of population aging has also been identified through the report provided by the "National Institute of Statistics and Informatics (INEI)" where the proportion of the older adult population increased by 13% in 2021, compared to 1950, which was 5,7%, and that in the last three months of 2021, 39% of Peruvian households had at least one person over 60 years of age among their members, Being in Metropolitan Lima the province with the highest proportion (41,8%)[14] , it is that this study is carried out under the institutional reality of the HNER M, specifically in the SE of adults. For this reason, this study aims to determine the factors associated with IH of older adults in the emergency service of the Hospital Edgardo Rebagliati Martins, 2017.

METHODS

Design and study area

This study is observational, analytical, and cross-sectional carried out from the clinical records of the HNERM, administered by the Social Security of Health (EsSalud) and categorized in the third level of care 2, located in the district of Jesús María, department of Lima, Perú.

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Population and sample

The study population consisted of 18,250 elderly patients hospitalized in the SE of the HNERM from January to December 2017 (sample frame). To calculate the sample size, the formula was applied to estimate a proportion when the size of the population[15] is known; Given that the prevalence of IH in HNERM emergencies was unknown, a proportion of 50% (p=0,50) was assumed, in addition, a confidence level of 95% (Zα=1,96). A precision error was considered of 5% (d=0.05). The calculated sample size was 376; then, considering a sample loss of 10%, the final sample size was nf = 376 + 376x10% = 413.6 = 414.

Medical records (CH) of elderly patients of either sex were considered inclusion criteria. , hospitalized in the HNERM SE during the study period. While the exclusion criteria were: CH of patients with mental pathology, CH of patients who arrived dead at the HNERM emergency room or who died within 24 hours of admission, CH that did not contain all the information required by the study, Illegible HC, and HC of patients who did not sign the informed consent for invasive diagnostic procedures and methods.

Variables and instruments

The dependent variable of the study was HI, with a Yes/No dichotomous response option, for which the "Appropriateness Evaluation Protocol-AEP" was used, which measures the degree of adequacy of the hospital use and is the most widely used revision technique in the United States and Europe. German and Restuccia[16] proposed it consists of a set of explicit and objective criteria that require hospital admission.

The validity of this protocol has been reported in various international studies, such as the elaborated by Peiró et al.[17] in Spain, who identified a high degree of interobserver reliability (specific agreement >64% and kappa >0,75), as well as reasonable validity (specific agreement >61%, kappa >0,64), thus demonstrating high reliability and moderate validity, and in elaborated by Sánchez et al.[18] in Mexico, where the inter-rater agreement of hospital admissions presented a kappa coefficient >0.70; then, when calculating the specificity and negative predictive value to detect adequate admission, the values found were >94% and >98%, respectively. In addition, this instrument has been applied in a variety of studies in the national environment, such as example, the one prepared by Contreras and Galarza[19] at the Dos de Mayo National Hospital, and the one carried out by Valentín[11] at the Daniel Teaching Hospital Alcides Carrion of Huancayo.

While the independent variables were divided into two groups: Epidemiological factors; age (polytomous: from 65 to 74 years, 75 to 84 years, and from 85 to more years), Sex (dichotomous: female, male), level of education (polytomous: illiterate, primary, secondary, superior), occupation (polytomous: pensioner, housewife, teacher, others (not specified in the HC), Person who brings or accompanies you to the hospital (polytomous: spouse, child, parents, siblings, other relatives (not specified in the HC), Other non-family members (without specification in the HC) and area of origin (polytomous: (Central Lima, East Lima, North Lima, South Lima, Others (provinces). Organizational factors: cause of hospitalization (polytomous: various causes), a specialty of the treating physician (polytomous: emergency physician, internist, general surgeon, traumatologist, other health professionals), admission shift (polytomous: morning, afternoon, evening), and reference (dichotomous: yes, no). "other" categories of the various variables were not considered factors since they inv they show many aspects or types.

Procedures

The collection technique was documentary research, that is, data collection from secondary sources; in this case, the review of HC was carried out, the H: C were listed: as making up the sample frame (18,250 elderly patients hospitalized in the SE HNERM during January to December of the year 2017) and with the help of the SPSS 25 program, with the option "select cases", 414 HC

were identified by means of and by means of the simple random technique. Once the units to be studied were defined, the following procedure was carried out: First, the Directorate and Training, Teaching and Research Support Unit of the HNERM Hospital Edgardo Rebagliati Martins was asked for permission to access and review the physical CH; however, it was the same internal staff who provided these stories for the researcher to review and include in the study those that met the selection criteria.

Second, the HC physical medical records were reviewed until the required sample was completed. Third, according to whether they met one or more PSA criteria, they were grouped as IH, adequate hospitalization; if they did not have any criteria, they were considered in the IH group. Fourth, once the review of the HCs was concluded, the construction of a data sheet was started in the statistical program SPSS 25 to carry out the corresponding statistical analysis. Fifth, the manuscript was drafted.

Statistical analysis

The descriptive analysis of the qualitative variables was carried out using absolute frequencies (n) and percentages (%). The bivariate analysis was performed using the Chi-square test, a level of statistical significance of 5%. Regression analysis was performed to determine the factors associated with IH, the simple Prevalence Ratio (PR) and adjusted (PRa) were calculated, with their respective 95% confidence interval.

Ethical aspects

The institutional permits of the nosocomial entity were obtained for the development and execution of this research, and the approval of the Institutional Ethics Committee and the confidentiality of the HC patients were maintained. Physical selected by encoding the data used.

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RESULTS

In the present investigation, 414 patients hospitalized in the SEHNERM during 2017 were included. The frequency of IH was 11,8% (n=49), while that of adequate hospitalizations was 88,2% (n= 365).

Table 1. Epidemiological factors in elderly patients hospitalized in the SE - HNERM

Epidemiological factors	Total		Hospitalization				p*
			Inadequate		Adequate		
	n	%	n	%	n	%	
Age							
From 65 to 74 years old	150	36.2	17	34.7	133	36.4	0.875
From 75 to 84 years old	119	28.7	13	26.5	106	29.0	0.867
From 85 years old to older	145	35.0	19	38.8	126	34.5	0.633
Sex							
Female	205	49.0	31	63.3	174	47.7	0.040
Male	209	50.5	18	36.7	191	52.3	
Level of education							
Illiterate**	4	1.0	0	0.0	4	1.1	-
Primary	67	16.2	4	8.2	63	17.3	0.105
Secondary	86	20.8	13	26.5	73	20.0	0.290
Higher	88	21.3	12	24.5	76	20.8	0.556
No data**	169	40.8	20	40.8	149	40.8	-

Occupation							
Pensioner	323	78.0	28	57.1	295	80.8	<0.001
Housewife	35	8.5	12	24.5	23	6.3	<0.001
Teacher	24	5.8	4	8.2	20	5.5	0.450
Others	32	7.7	5	10.2	27	7.4	0.490
Person who brings or accompanies you to the hospital							
Spouse	83	20.0	12	24.5	71	19.5	0.408
Child	204	49.3	23	46.9	181	49.6	0.728
Parents	19	4.6	6	12.2	13	3.6	0.006
Siblings	18	4.3	5	10.2	13	3.6	0.032
Other relatives	72	17.4	3	6.1	69	18.9	0.027
Other non-relatives**	18	4.3	0	0.0	18	4.9	-
Area of origin							
Lima Central	253	61.1	36	73.5	217	59.5	0.059
Lima Eastern	42	10.1	3	6.1	39	10.7	0.321
Lima Northern **	13	3.1	0	0.0	13	3.6	-
Southern Lima	51	12.3	3	6.1	48	13.2	0.160
Others	55	13.3	7	14.3	48	13.2	0.826
Total	414	100	49	100	365	100	

* Chi square test

** The Chi-square test is not calculated since it only occurs in one group.

Of the 414 patients, 36.2% were between 65 and 74 years old, 50.5% were male, 21.3% had higher education, 78% were pensioners, their kids accompanied 49.3%, and 61.1% were from central Lima. However, significant differences were observed in terms of sex, occupation, and person accompanying him since the proportion of women (p-value =0,040) of the occupation housewife (p <0.001) and of the accompanying parents (p=0.006) and siblings (p=0.032) was higher in the group of patients with inadequate hospitalizations; while the proportion of pensioner occupation (p<0.001) and the accompaniment of other family members (p=0.027) was higher in the group of patients with adequate hospitalizations. Table 1

Table 2. Organizational factors in elderly patients hospitalized in the Emergency Service of the Hospital Edgardo Rebagliati Martins

Organizational factors	Total		Hospitalization				p*
			Inadequate		Adequate		
	n	%	n	%	n	%	
Cause of hospitalization							
Cerebrovascular accident**	24	5.8%	0	0.0%	24	6.6%	-
Appendicitis**	15	3.6%	0	0.0%	15	4.1%	-
Fracture* *	31	7.5%	0	0.0%	31	8.5%	-
Acute respiratory infection**	19	4.6%	0	0.0%	19	5.2%	-
Pneumonia	39	9.4%	3	6.1%	36	9.9%	0.400

Sepsis**	15	3.6%	0	0.0%	15	4.1%	-
Head injury**	15	3.6%	0	0.0%	15	4.1%	-
Hepatic encephalopathy* *	12	2.9%	0	0.0%	12	3.3%	-
Chronic kidney disease**	11	2.7%	0	0.0%	11	3.0%	-
Digestive bleeding**	12	2.9%	0	0.0%	12	3.3%	-
Acute myocardial infarction ST**	10	2.4%	0	0.0%	10	2.7%	-
Atrioventricular block**	9	2.2%	0	0.0%	9	2.5%	-
Choledocholithiasis**	8	1.9%	0	0.0%	8	2.2%	-
Acute coronary syndrome**	10	2.4%	0	0.0%	10	2.7%	-
Hemoptysis**	7	1.7%	0	0.0%	7	1.9%	-
Intestinal obstruction**	7	1.7%	0	0.0%	7	1.9%	-
Diabetic foot**	7	1.7%	0	0.0%	7	1.9%	-
Others	163	39.4%	46	93.9%	117	32.1%	<0.001
Specialty of the treating							
Physician Emergency	238	57.5%	26	53.1%	212	58.1%	0.504
Physician Internist	16	3.9%	6	12.2%	10	2.7%	0.001
General surgeon **	38	9.2%	0	0.0%	38	10.4%	-
Traumatologist**	34	8.2%	0	0.0%	34	9.3%	-
Others	88	21.3%	17	34.7%	71	19.5%	0.014
Admission shift							
Morning	173	41.8%	35	71.4%	138	37.8%	<0.001
Afternoon	150	36.2%	10	20.4%	140	38.4%	0.014
Night	91	22.0%	4	8.2%	87	23.8%	0.013
Reference							
Yes	43	10.4%	7	14.3%	36	9.9%	
No	371	89.6%	2	85.7%	329	90.1%	0,.341
Total	414	100%	49	100%	365	100%	

* Chi square test

** The Chi-square test is not calculated since it only occurs in one group

Of the 414 patients, 9.4% were hospitalized for pneumonia, emergency physicians treated 57.5%, 41.8% were admitted on the morning shift, and 10.4% were referred. However, significant differences were observed in terms of the cause of hospitalization, the specialty of the treating physician, and the care shifts since the proportion of patients with other causes of hospitalization (p-value <0.001), treated by internists (p=0.001) and other specialists (p=0.014) and attended in the morning shift (p<0.001) was higher in the group of patients with IH while the proportion of patients attended in the afternoon (p=0.014) and night shifts (p=0.013) was higher in the group of patients with adequate hospitalizations. Table 2

Table 3. Epidemiological factors associated with inappropriate hospitalizations of older adults in the Emergency Service of the Edgardo Rebagliati Martins Hospital.

Epidemiological factors	PR (IC95%)	Pra (CI 95%)
Age	Ref.	Ref.
From 65 to 74 years old	0.90 (0.49-1.63)	5.80 (2.20-15.28)
From 75 to 84 years old	1.19 (0.70-2.01)	8.22 (2.76-24.4)
From 85 years old to older	1.77 (1.02-3.04)	2.10 (1.11-3.98)
Sex Female		
Level of education		
Primary	Ref.	Ref.
Secondary	1.39 (0.78-2.48)	0.90 (0.39-2.04)
Higher	1.20 (0.67-2.21)	1.08 (0.47-2.50)
Occupation		
Pensioner	0.39 (0.22-0.63)	0.266 (0.08-0.819)
Housewife	3.51 (2.02-6.10)	3.39 (1.13-10.18)
Teacher	1.44 (0.58-3.68)	0.68 (0.21-1.88)
Others	Ref.	Ref.
The person who brings it or accompanies the hospital		
Spouse	1.29 (0.71-2.38)	9.17 (2.59-32.39)
Son/	0.91 (0.54-1.52)	3.72 (1.14-12.14)
Parents	2.90 (1.41-5.97)	8.50 (1.89-38.44)
Siblings	2.50 (1.13-5.54)	22.42 (5.78-86.98)
Other relatives	Ref.	Ref.
Area of origin		
Central	1.76 (0.98-3.22)	0.67 (0.30-1.45)
Lima East	0.59 (0.20-1.79)	0.19 (0.05-0.58)
Lima South	0.46 (0.15-1.44)	0.29 (0.08-1.29)
Others	Ref.	Ref.

PR: Prevalence ratio, RPa: Prevalence ratio adjusted

Between epidemiological factors , the Prevalence Ratio (PR) allowed to identify the female sex PR=1.76 (1.02-3.04), housewife occupation PR= 3.51 (2.02-6.10) and parental accompaniment PR= 2.90 (1.43-5.96) and siblings PR= 2.50 (1.13-5.54) as epidemiological factors associated with inadequate hospitalizations. The adjusted Prevalence Ratio (PRa) made it possible to confirm these factors and identify others, that is, at ages 75 to 84 years PRa=5.80 (2.20-15.27), from 85 to more years PRa= 8.22 (2.76-24.4), the female sex RPa=2.10 (1.11-3.99), the housewife occupation RPa=3.39 (1.13-10.17) and the accompaniment of the spouse RPa= 9.16 (2.59-32.38), child RPa= 3.72 (1.14 -12.14), parents RPa= 8.50 (1.80-38.44) and siblings RPa= 22.42(5.78-86.97) as epidemiological factors associated with IH . Table 3

Table 4. Organizational factors associated with inappropriate hospitalizations of older adults in the Emergency Service of the Edgardo Rebagliati Martins Hospital

Organizational factors	PR	RPa
Cause of hospitalization		
Pneumonia	0.63 (0.21-1.92)	0.58 (0.16-2.01)
Treating physician specialty		
Emergency	0.84 (0.49-1.42)	1.02 (0.57-1.88)
physician Internist	3.47 (1.74-6.94)	2.91 (1.38-6.07)
Others	Ref.	Ref.
Admission shift		
Morning	3.48 (1.93-6.27)	4.84 (1.68-14.06)
Afternoon	0.451 (0.232-0.8878)	1.46 (0.46-4.67)
Night	Ref.	Ref.
Reference	1.44 (0,70-3.002.999)	1.83 (0.90-3.72)

PR: Prevalence ratio, RPa: Adjusted prevalence ratio

Among the organizational factors, the Prevalence Ratio (PR) made it possible to identify the specialty of the treating physician internist PR=3.47(1.74-6.94) and the morning admission shift PR=3.48 (1.93-6.27) as organizational factors associated with IH. The adjusted Prevalence Ratio (PRa) allowed us to confirm this result: specialty of the treating physician internist PRa=2.91 (1.38-6.07) and the morning admission shift PRa=4.84 (1.65-14.06).

DISCUSSION

When analyzing patients hospitalized in the ES emergency service of the study institution, it was identified that 11.8% of hospitalizations were inadequate. Studies have been identified that have carried out the same analysis both in the national and international environment; for example, similar results were found by Baroni et al.[13] who, when conducting their study in a health institution in Iran, were able to identify that 14% of hospitalizations were inappropriate. A similar situation was found by Rahimi et al.[20] where inappropriate hospitalizations were 13.8%. While in the national environment, Borda [21] when carrying out his research at the Luis N. Sáenz PNP Hospital, found that 15% of hospitalizations in the general surgery service were inadequate, and Valentín [11] , when developing his study in a Huancayo hospital, found that 1.8% of hospitalizations were inappropriate, performed by the medical oncology service. All these results show that less than a quarter of hospital admissions are inappropriate or unnecessary, not only in the national environment but also in the international environment; this could be due to various reasons or factors that, in the present study and within the local environment have been analyzed, based on the author's clinical expertise.

When identifying the associated factors, it was found that age was an epidemiological factor for inappropriate hospitalizations because the older the patient, the greater the possibility of being hospitalized inappropriately. Almost similar results were identified in the study performed by Li et al.[22] who, when evaluating the days of inappropriate HI hospitalization in a tertiary hospital in Wuhan, found that age between 60 and 69 years was a factor for such hospitalizations (p=0.012, OR=2.54). This would imply that older adult patients are the ones who are more likely to be hospitalized inappropriately, which could be assumed as the prevention that the health personnel adopts to protect the patient's health, considering that, during this stage of life, the presence of pathologies is more frequent.

Additionally, it was found that the female sex was also an epidemiological factor for inappropriate hospitalizations, which has not been identified as a factor associated with these hospitalizations in other related investigations but has been found in a way that describes that female patients are the ones who mainly present this type of hospitalization[11].

While the occupation of housewife was another epidemiological factor found; where Contreras and Galarza[19] contrast with what was mentioned since they showed that patients who were students and/or employees were the ones who had a double risk of being hospitalized unnecessarily (p=0.01, OR=2.35). The disparity in results could be based on the fact that those patients who have a definite occupation are more likely to have some type of occupational accident, causing them to be the ones who require more health care and, given the need to receive a definitive diagnosis, their hospitalization results be prolonged and inadequate in the face of waiting for results.

Likewise, the presence of a person accompanying the patient to the hospital, specifically parents, siblings, and spouses, turned out to be another epidemiological factor, completely contrasting with what identified by Hwang et al. [23] since they found that the admission method, specifically when the patient goes to the hospital alone, was associated with more days of inadequate hospitalization (p =0.05).

Given these results, it could be mentioned that, when the patient is accompanied by a family member, in general, they ask for the best care for their patient, thus generating a prolonged and unnecessary stay until they obtain a response from the specialists on the health of this But it can also be mentioned that, if the patient goes to a health institution on their own, this can generate unnecessary hospitalization, because the administrative process, obtaining medications, among other aspects necessary for patient care are detained until the arrival of a family member, triggering what was described above.

On the other hand, the organizational factors identified were the treating physician, specifically the internist.

Regarding this, Contreras[24] found that the inappropriate hospitalizations occurred mainly when they came from general medicine (92%), gastroenterology (71.43%), and hematology (62.50%) (p=0.001). In contrast, the admissions produced by outpatient clinics of other specialties than medicine had twice the probability of inappropriate admission (p=0.04 OR=2.10) and when hospitalization is generated by the general practitioner (p=0.001). In agreement with what was identified by Borda[21], who showed that the inadequate hospitalizations were mainly when the origin of admission was from an outpatient clinic (p=<0.001), and the results of Sarzo et al.[25] , add that the admission diagnosis is a factor that was associated with inappropriate hospitalization (p=0.003).

The similarities of the results mentioned show that the specialist doctor's attention, judgment, and expertise are relevant to giving the hospitalization order and avoiding inappropriate hospitalizations.

Another organizational factor found was the admission shift, specifically the morning, as evidenced Chirinos[12] where the admission shift was also a factor for inadequate hospital admission, but specifying that it was the afternoon shift, disagreeing with what was identified in this investigation. This could be due to the difference in the population analyzed in both studies, since in the present study, they were older adults. In contrast, in the study above, it was pediatric patients.

It is concluded that the frequency of IH was 11.8% in the SE–HNERM. Service Emergency of the Edgardo Rebagliati Martins Hospital There were factors associated with inadequate IH hospitalizations: epidemiological (female sex, age, occupation as a housewife, accompanying parents and accompanying siblings) and organizational factors (internist treating physician and the morning admission shift). Additionally, the afternoon and evening admission shifts were found as organizational factors.

It is recommended to plan and execute strategies aimed at medical personnel, specifically those who work in the SE of the study hospital, to update their knowledge about hospitalization criteria, with the frequency of reducing the frequency of HI in

this service.

In addition to greater awareness of specialists about the importance and need of the patient to be hospitalized or not, since this generates a reduction in the availability of hospital beds, causing patients who really need them to not be able to occupy them. And encourage the development of research related to the subject of study, contemplating not only hospitalization in the SE of the study institution, but of the entire nosocomial institution, as well as the identification of other factors that may be associated with IH in other nosocomial realities.

Finally, the main limitation of this study is that the results obtained will be useful only for the hospital environment under study, demonstrating the reality found in a specific year, for which they cannot be extrapolated to other nosocomial instances. Subsequently, the variables analyzed in this study were of interest to the researcher, which is why he limited the comparison of the results, considering that, in several of them, these variables were not analyzed, but this can also be considered as an opportunity to the expansion of scientific evidence both in the international environment and even more so in the national one, considering the little evidence found in this regard.

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