

Factors determining patient admittance to the observation and consultation areas of the Emergency Department on workdays versus weekends

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A – Study Design, **B** – Data Collection, **C** – Statistical Analysis, **D** – Data Interpretation, **E** – Manuscript Preparation, **F** – Literature Search, **G** – Funds Collection

Summary Background. In Poland, as in the world at large, Emergency Departments (EDs) face a formidable problem as they are overloaded with an excessive number of patients. It was decided to investigate whether there are any factors which determine patient admittance rates to the observation and consultation areas of EDs.

Objectives. The aim of this study is to determine whether differences in the rates of patient visits to emergency rooms (observation and consultation areas) on workdays and on weekends, are significantly determined by sociodemographic variables, patients' beliefs and knowledge about the functioning of EDs and primary healthcare facilities (PHFs) or health-related variables.

Material and methods. A total of 164 patients from the ED of the University Clinical Hospital in Opole were examined. The diagnostic survey method was employed, using the Satisfaction with Life Scale (SWLS), the Hospital Anxiety and Depression Scale (HADS) and an original questionnaire of the authors' own design.

Results. Neither age ($p = 0.059$), sex ($p = 0.687$), marital status ($p = 0.585$), place of residence ($p = 0.423$), employment status ($p = 0.401$), the presence of chronic diseases ($p = 0.936$) nor a lack of trust in primary care physicians ($p = 1.000$) determined the ED admittance rates on weekdays versus weekends. People who did not know where to seek medical help at night and on national holidays were more likely to visit the ED on weekends than on weekdays (28.5%; 23% vs 10.98%; 9, $p = 0.010$).

Conclusions. It is difficult to define the characteristics of healthcare service recipients visiting the ED in terms of whether the admittance is on a workday or a weekend day. During each shift, the ED staff should be prepared to receive patients of different sociodemographic backgrounds and health statuses, possessing different levels of knowledge and beliefs about the functioning of EDs and PHFs.

Key words: emergency service, hospital emergency medical services, patient admission, emergency treatment, patients.

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Background

The State Medical Rescue System in Poland was established in order to provide medical assistance to the population in the event of a sudden health threat. One of the organizational units of the State Medical Rescue System is the Emergency Department (ED) of hospitals. This department's main task is to provide healthcare services consisting of initial diagnosis and treatment to the extent necessary to stabilize the vital functions of people who are in a state of emergency [1].

In Poland, as well as in other countries around the world [2], hospital emergency departments face a formidable problem, being overloaded with an excessive number of patients arriving for treatment. This phenomenon is referred to in the literature as "overcrowding." Having to provide services to an excessive number of patients with a limited ED staff may lead to a number of adverse effects, such as overloading the ED staff, risking delays in identifying patients who are in life-threatening situations or exposing patients to medical errors. One of the reasons for "overcrowding" in EDs is the prevailing public perception that treatment in these departments allows shorter wait times for consultation with specialists than outpatient settings. In principle, EDs have become the "victim" of their very good organization, equipment and 24-hour availability [3].

Guła and Karwan [4] have pointed out a systematic increase in the number of patients receiving care at EDs from 2009 to 2012. They demonstrated the extent to which ED services are overused in unjustified cases in their study, which showed that 37%–45% of the patients admitted were not at risk of a sudden threat to their health. According to data from the Supreme Chamber of Control (*Najwyższa Izba Kontroli*), about 80% of the patients in some EDs did not meet the statutory criteria of experiencing a threat to life and health [5]. Pilip et al. reported an increase in the total number of patients admitted to the ED as a result of these patients failing to use the Nighttime and Holiday Healthcare services (NHH; *Nocna i Świąteczna Opieka Zdrowotna*). This resulted in a 25% increase in the number of services provided in 3 consecutive years of the study. Some of the patients included in their study were unaware of the existence of the NHH centers or were unable to identify how services are provided in such a facility. At the same time, the authors pointed to the growing number of patients reporting to the emergency department without a referral (1,421 people in 2009 vs. 2,694 people in 2011) [6]. An upward trend in the number of notifications to emergency departments has also been observed in other European countries; for example, Norwegian studies have also reported an annual increase in the number of patients using EDs [7].



One of the reasons for ED overcrowding is the prolonged hospitalization of patients arriving at the emergency department in order to repeat or expand diagnostic tests due to the lack of beds in the target departments [8]. A review of the literature reveals that the causes of ED overcrowding are the large number of patients waiting for medical examination, delays in starting the treatment of examined patients, difficulties in discharging patients from the department at the end of their stay, an insufficient number of specialists and medical staff in general, delays in making decisions on the further treatment of patients, insufficient resources of diagnostic laboratories, delays in processing admissions to other hospital departments, insufficient size of the emergency department and long wait times for *triage* [9–11]. Excessive patient admittance may be caused by unmet healthcare needs [12], the presence of multiple diseases, polypharmacy, old age [13–16] or chronic diseases – in particular, cardiovascular diseases (group “I” in the ICD-10 classification), symptoms, signs and abnormal test results (group “R”) and injuries and poisonings (group “S”) [17].

ED patients are often people who experience anxiety disorders. One study conducted in the United States reported that over the years 2009–2011, there were 1,247,000 anxiety-related ED visits recorded annually, constituting 0.93% of all ED visits. Anxiety disorders most often accompany cardiovascular or respiratory diseases, addictions or other mental illnesses [18]. Anxiety disorders were diagnosed in this study more often than depression (93% vs. 60%) and were the most common cause of non-cardiologic chest pain.

Reviewing the literature shows that there are many reasons why patients report to the observation and consultation areas of the ED. Previous studies have also shown that patient admittance to emergency departments may be seasonal, i.e., it may depend on the day of the week, the time of day or even the season [4, 7, 19]. According to Guła and Karwan [4], most patient visits take place on Mondays, Fridays and Sundays between 8:00 a.m. and 9:00 p.m. A Norwegian study, on the other hand, points to Monday as the day with the highest number of patients admitted (20 more than on the other days of the week). The largest load on the rescue department took place between 2:00 p.m. and 3:00 p.m. (about 8.5% of daily visits), while in the study group the people who came to the emergency room on weekends sought help between 7:00 a.m. and 3:00 p.m. (45%). According to these researchers, January, March and December saw the highest ED load (in January 2011, they recorded 16% more visits than in June of the same year) [7]. The seasonality of visits is also described by Hartmann et al. According to them, twice as many patients are admitted in the winter months (December – 10.6%, February – 10%) as in the summer months (July – 5.5%, August – 5.46%), and the largest number of patients seek help in the emergency department after the district outpatient clinic closes, i.e., between 6 p.m. and 8 p.m. [20].

Considering the above findings, it was decided to determine whether there are any factors influencing patient admittance to the observation and consultation areas of the ED. The results of these studies could be useful for the development of guidelines aimed at creating solutions at the private healthcare facility (PHF) level, allowing for a reduction in the number of patients admitted to the ED for non-emergency reasons.

Objectives

The aim of this study is to determine whether differences in patient admission to the observation and consultation areas of emergency departments on workdays and on weekends are significantly determined by factors such as 1) sociodemographic variables; 2) patients’ beliefs and knowledge about the functioning of EDs and PHFs; or 3) health-related variables.

Material and methods

Study design

A cross-sectional study was conducted from 01/09/2017 to 31/12/2017. The study participants were enlisted from among the ED patients of the University Clinical Hospital in Opole. The method of diagnostic survey and questionnaire was used. The study also used data from the CompuGroup Medical Clininet computer system, version 7.69.8, which is used in the ED of the University Clinical Hospital in Opole. The data necessary to analyze the day of the week and time of the patient’s admittance and to establish the diagnosis with which the patient was discharged/transferred to another department/hospital (according to the ICD-10) were taken from this system.

Setting

ED patients received questionnaires after leaving the *triage* office in which they were registered to the doctor of the conservative section of the ED. Filling in the questionnaire was tantamount to agreeing to participate in the study. Prior to the study, the patients were informed about the purpose of the study, the anonymity of the study, the voluntary nature of participating in the study and their ability to leave the study at any stage. The study was started after obtaining the consent of the Institutional Review Board at Opole Medical School – No. 15/PI/2017.

Participants

A total of 164 ED patients were studied. The criteria for inclusion in the study were age, logical contact with the patient, consent to participation in the study, fluency in Polish, admission to the ED in an emergency mode independently and appearing without a referral from a PHF or outpatient specialist care doctor, with symptoms of the cardiovascular system or of internal origin, in a non-life-threatening state of health. The following patients were excluded from the study: patients under the age of 18 years, those who were not fluent in Polish, those who were admitted to the ED by referral or brought by the Emergency Response Team (EMT) and patients with injuries or in critical condition without logical contact.

The majority of the respondents were men (52.73%, 93/164), people under the age of 40 (44.55%; 72/164) or over the age of 51 (35.98%; 59/164), people in relationships (75.61%; 124/164), people living in cities (60.98%; 100/164), people with secondary or higher education (62.81%; 103/164) and working people (68.29%; 112/164) (Table 1).

Variable	n	%	
Age	< 40 years	72	43.90%
	40–50 years	33	20.12%
	≥ 51 years	59	35.98%
	total	164	100.00%
Sex	male	93	56.71%
	female	71	43.29%
	total	164	100.00%
Marital status	in a relationship	124	75.61%
	not in a relationship	40	24.39%
	total	164	100.00%

Table 1. Sociodemographic data			
Variable		n	%
Place of residence	countryside	64	39.02%
	town or city	100	60.98%
	total	164	100.00%
Education	primary school	17	10.37%
	junior high school	11	6.71%
	basic vocational	33	20.12%
	secondary	52	31.71%
	higher	51	31.10%
	total	164	100.00%
Employment status	employed	112	68.29%
	unemployed	52	31.71%
	total	164	100.00%
Financial situation	very good	13	7.93%
	rather good	97	59.15%
	average	48	29.27%
	rather poor	6	3.66%
	total	164	100.00%

n – number; % – percentage.

Variables

The sociodemographic variables included the age, sex, marital status, place of residence, level of education and employment status of the subjects, as well as a self-assessment of their financial situation. The patient's beliefs and knowledge about the functioning of EDs and PHFs were measured by variables such as a lack of trust in the patients' family physicians, a lack of trust in the NHH physicians, a lack of patients' knowledge about where to seek medical assistance at night and on holidays, patients' beliefs that the physicians on duty in the ED had more experience and the patients' beliefs that the ED physicians had better diagnostic capabilities. The health of the subjects was measured using the following variables: the presence of chronic disease in the patient, the patient's level of anxiety, depression and satisfaction with their life and the intensity of the symptoms for which the patient was admitted to the ED).

Data sources/measurement

Two standardized questionnaires and a questionnaire of the authors' own design were used for the study. The Satisfaction with Life Scale by E. Diener, R.A. Emmons, R.J. Larsen and S. Griffin — and adapted by Z. Juczyński — was used to assess the life satisfaction of people admitted to the ED. The SWLS consists of five statements referring to the subject's life to date. The respondent refers to them by selecting one of seven possible answers, where "1" means that the respondent does not agree with the statement at all and "7" means that he or she completely agrees with it. The range of results is between 5 and 35 points. All of the responses selected by the respondent are summed up and the result is calculated on a T-score scale. The Cronbach alpha reliability score for the SWLS is 0.81 [21].

The HADS (Hospital Anxiety and Depression Scale) by A.S. Zigmond and R.P. Snaith is used to assess the severity of anxiety and depression. It is a screening tool for detecting anxiety- and depression-related disorders and testing their severity, but it is not a method for diagnosing them. The Cronbach alpha reliability score for the subscale of anxiety is 0.81 and for the subscale of depression it is 0.89 [22]. The questionnaire consists of 16 statements, including 8 on anxiety and 8 on depression.

The task of the respondent is to respond to the statements on a scale of 0–3 points. The cut-off threshold is defined as 7 points for anxiety and 7 points for depression, which represents normal levels; 8–10 points is the limit, while 11–21 points is the high level appropriate for the disease.

We also used our own original questionnaire, which consists of closed and open questions with both single-choice questions (metric questions; the predominant symptom for which the patient sought care at the ED; medications taken; distance from the patient's place of residence to the ED, PHF or NHH center and their attitude towards that distance; the severity of somatic symptoms and anxiety concerning their health) and multiple-choice questions (factors determining their admittance to the ED instead of a PHF or NHH center; coexisting diseases). It also includes numeric scales on which the respondents indicated the severity of individual somatic symptoms and the severity of anxiety over their health, with the lowest possible value that patients could mark being "0" and the highest being "10".

Statistical analysis

For quantitative variables, mean distribution values are provided (depending on the normality of the variable distribution), while for qualitative variables, quantity and interest are provided. The normality of the distribution of quantitative variables was studied using the Shapiro–Wilk test. In order to investigate the relationship between two nominal (category) variables, the chi-squared test was used. In cases where the dependent variable was measurable on at least an order scale and did not have a distribution consistent with the normal one, a non-parametric Mann–Whitney U test was used to compare the two groups. Results with a *p*-value of ≤ 0.05 were considered significant.

Results

Sociodemographic variables and patient admittance to the ED

Variables such as age, sex, marital status, place of residence and employment status did not significantly determine the admittance rate to the ED on weekdays versus weekends (Table 2).

Patient's beliefs and knowledge about the functioning of EDs and the possibilities of receiving medical assistance

A statistically significant result was noted in two factors relating to the patients' beliefs and their knowledge about the functioning of EDs and the possibility of receiving medical assistance. One of these factors was the subjects' lack of knowledge about where medical assistance was provided at night and on non-working days, while the other was their fear of losing their life or sustaining injury (the subjective feeling that "something bad would happen to him/her"). People who did not know where to seek medical help at night and on national holidays were significantly more likely to visit EDs on weekends than on weekdays (28.5%; 23 vs. 10.98%; 9). Those who did know were more likely to visit the ED on weekdays than on weekends (89.02%; 73 vs. 71.95%; 59). On the other hand, the people who felt a subjective threat to their life and health were significantly more likely to be admitted on weekdays than on weekends (39.02%; 32 vs. 21.95%; 18). The patients who did not indicate this factor were more likely to be admitted during weekends. Factors such as a lack of trust in the PHF doctors or in the NHH doctors, the experience of the ED doctors, the better diagnostic resources in EDs, a subjective feeling of panic over their health, living in close proximity to an ED or a conviction about the intensity of their perceived symptoms did not significantly determine the ED admittance rate on weekdays versus weekends (Table 3).

Table 2. Analysis of the influence of sociodemographic variables on ED admittance rate on weekdays and weekends

Variable	Variable category	Day of the week		Level of significance
		weekdays <i>n</i> (%)	weekend days <i>n</i> (%)	
Sex	female	42 (51.22)	29 (35.37)	$p = 0.059$
	male	40 (48.78)	53 (64.63)	
Age	< 40 years	37 (45.12)	35 (42.68)	$p = 0.687$
	41–50 years	18 (21.95)	15 (18.29)	
	≥ 51 years	27 (32.93)	32 (39.02)	
Marital status	in relationship	60 (73.17)	64 (78.05)	$p = 0.585$
	not in a relationship	22 (26.83)	18 (21.95)	
Place of residence	countryside	35 (42.68)	29 (35.37)	$p = 0.423$
	town	47 (57.32)	53 (64.63)	
Employment	employed	59 (71.95)	53 (64.63)	$p = 0.401$
	unemployed	23 (28.05)	29 (35.37)	

n – number; *p* – level of significance.

Table 3. Analysis of factors related to the patients' beliefs and knowledge about the functioning of EDs and the possibility of receiving medical care and admittance to the ED

No.	Factor determining admittance to the ED	Weekdays <i>n</i> (%)	Weekend days <i>n</i> (%)	Level of significance
1.	No specific factor was indicated	73 (89.02)	73 (89.02)	$p = 1.000$
	I do not trust the primary care physicians	9 (10.98%)	9 (10.98)	
2.	No specific factor was indicated	73 (89.02)	59 (71.95)	$p = 0.010$
	I do not know where to seek medical attention at night or on non-working days	9 (10.98)	23 (28.05)	
3.	No specific factor was indicated	76 (92.68)	79 (96.34)	$p = 0.493$
	I do not trust the NHH doctors	6 (7.32)	3 (3.66)	
4.	No specific factor was indicated	50 (60.98)	64 (78.05)	$p = 0.027$
	I felt like something very bad was going to happen to me	32 (39.02)	18 (21.95)	
5.	No specific factor was indicated	66 (80.49)	67 (81.71)	$p = 1.000$
	I believe that the doctor at the ED is more experienced	16 (19.51)	15 (18.29)	
6.	No specific factor was indicated	50 (60.98)	47 (57.32)	$p = 0.751$
	I believe that the doctor in the hospital has better diagnostic capabilities	32 (39.02)	35 (42.68)	
7.	No specific factor was indicated	68 (82.93)	76 (92.68)	$p = 0.095$
	I felt a sudden panic attack because of my health	14 (17.07)	6 (7.32)	
8.	No specific factor was indicated	72 (87.80)	67 (81.71)	$p = 0.385$
	I live close to the ED	10 (12.20)	15 (18.29)	
9.	No specific factor was indicated	58 (70.73)	56 (68.29)	$p = 0.865$
	I thought the symptoms of my illness were very severe	24 (29.27)	26 (31.71)	

n – number; *p* – level of significance.

Table 4. Relationship between the day of ED admittance and the presence of chronic diseases

Variable		Day of the week		Level of significance
		weekdays <i>n</i> (%)	weekend days <i>n</i> (%)	
Chronic diseases	yes	39 (48.15)	41 (50.00)	$p = 0.936$
	no	42 (51.85)	41 (50.00)	
Total		81 (100.00)	82 (100.00)	

n – number; *p* – level of significance.

Health condition variables and admittance to the ED

The presence of chronic diseases did not determine patients' visits to the ED on weekdays versus weekends ($p = 0.936$) (Table 4).

Individuals arriving at the ED on weekdays did not differ from those arriving on weekends in terms of life satisfaction ($U = 3043.50$; $p = 0.195$), severity of anxiety ($U = 3126.00$; $p = 0.301$) or severity of depression ($U = 3043.50$; $p = 0.190$) (Table 5).

Table 5. The relationship between the day of ED admittance and the patient's satisfaction with their life and the severity of anxiety and depression (in)

Variable	Weekdays					Weekend days					Test result	
	M	SD	Me	Min	Max	M	SD	Me	Min	Max		
SWLS	22.3	5.74	22	7	35	23.5	5.81	23.5	11	34	U = 3,043.50	<i>p</i> = 0.195
HADS anxiety	13.57	2.94	14	7	19	13.14	2.66	13	7	17	U = 3,126.00	
HADS depression	11.7	2.44	11.5	4	20	11.21	2.24	11	6	17	U = 3,043.50	<i>p</i> = 0.190

M – mean; SD – standard deviation; Me – median; Min – minimum; Max – maximum; SWLS – Satisfaction with Life Scale; HADS anxiety – anxiety level measured by the Hospital Anxiety and Depression Scale; HADS depression – depression level measured with Hospital Anxiety and Depression Scale; U – Mann-Whitney U test; *p* – level of significance.

Table 6. Relationship between the day of admittance to the ED and the severity of the ailment

Variable	Weekdays					Weekend days					Test result	
	Min	Max	Q1	Me	Q3	Min	Max	Q1	Me	Q3	U	<i>p</i>
Chest pain severity	4	10	6.25	8	9	1	10	3.25	7	10	402	0.161
Heart palpitation severity	4	10	5	8	9	4	9	4.25	6	8.5	61.5	0.159
Dyspnea severity	4	10	5.25	9.5	10	4	8	4.25	5	7.25	10.5	0.089
Cough severity	5	10	5.75	8.5	9.75	3	4	3	3.5	4	0	0.009
Stomach pain severity	5	10	6	8	9.25	3	10	5	7.5	9	168	0.407
Diarrhea severity	3	10	3.5	8	10	8	8	8	8	8	7.5	1
Vomiting severity	6	10	6	8	-	8	9	8	8.5	9	6	1
Fever severity	4	8	4	5	8	6	6	6	6	6	6	0.643
Headache severity	3	8	3.5	6	7.5	2	9	4	4	5	66	0.423
Severity of symptoms other than those mentioned above	5	10	6	7	9.5	4	7	4	4	7	13.5	0.014

M – mean; SD – standard deviation; M – median; Min – minimum; Max – maximum; U – Mann-Whitney U test; Q1 – first quartile; Q3 – third quartile; *p* – level of significance.

Statistically significant differences were noted in the intensity of the patients' coughing, which was indicated more often by people admitted to the ED on weekdays (Me = 8.5; min-max = 5–10) than on weekends (Me = 3.5; min-max = 3–4). Differences were also noted in relation to the broadly understood remaining symptoms, which were also indicated more frequently by patients appearing on weekdays (Me = 7; min-max = 5–10) than on weekends (Me = 4; min-max = 3–10). The severity of chest pain, heart palpitations, dyspnea, abdominal pain, diarrhea, vomiting, fever and headache did not significantly differ between patients being admitted to the ED on weekends and those appearing on weekdays (Table 6).

Discussion

A previous study reported that the volume of patients at emergency departments, which are always open, increases during weekends and national holidays due to the interruption of services in other departments [23]. Our own study showed that factors such as sociodemographic variables, some patients' beliefs about PHF doctors, a lack of trust concerning NHH doctors, convictions about the better diagnostic resources of ED doc-

tors, patients' distance to an ED, chronic disease in a patient, the level of anxiety and depression in a patient and the level of a patients' perceived satisfaction with life did not influence emergency department admittance rates on weekdays versus weekend days. There are a few similar studies in the literature.

Scantlebury et al. [24] claims that demographic characteristics were the strongest predictors of accident and emergency services usage rates. The authors used the Index of Multiple Deprivation (IMD), which consists of seven domains: income, employment, health and disability, education, housing, the environment and crime. On the other hand, according to Norwegian researchers, a high ED admittance rate was observed in the 65+ age group. Bjørnsen et al. [7] reported that patients at this age account for as much as 50% of all people admitted. An analysis of the hospitalization of patients over 65 years of age in EDs which was carried out by Lubszczyk et al. [17] showed that the average age in the study group was 76.32 years, with women constituting 57%. Unfortunately, despite the inclusion of sociodemographic variables, none of these studies divided patient ED admittance rates into weekdays and weekends and holidays, as we did in this study.

While investigating the ED admittance rate, researchers McHale et al. [25] made quite an interesting division of patients:

they divided the patients by appropriate and inappropriate visits. They showed that both groups were seen most regularly on Mondays, in March and between 8 a.m. and 4 p.m. Moreover, after adjusting for temporary effects, the odds of an inappropriate ED visit were significantly higher between the hours of 8 a.m. and midnight, on weekend days and on holidays. In our study, unfortunately, we did not divide the subjects in this way. This approach may, however, be a guideline for further studies.

Sociodemographic factors and general health status may have a significant impact on the number of hospitalizations. Previous studies of ED patients show that the risk of hospitalization increases in patients with multiple diseases, those taking more than 4 drugs on a daily basis, those supervised by a specialist, those older than 45 years and those defining their financial status as average [13]. Almost half of the respondents in this study (49%; 80) reported multiple diseases. However, the presence of chronic diseases did not determine patients' admittance to EDs on weekdays versus weekends.

As mentioned in the introduction, anxiety and depression disorders were observed in ED patients in previous studies. Abar et al. reported that such disorders were frequent among emergency department patients [26]. According to the authors, anxiety was observed in 10% and depression in 12% of ED patients. Our study showed that the levels of anxiety and depression in the examined patients were high (i.e., appropriate for the disease). In addition, we did not show any significant differences in the severity of these symptoms in people who were admitted to the consultation and observation areas on weekends and those admitted on weekdays. This means that the ED doctor on duty should, in principle, be prepared for patients presenting with such symptoms during essentially any shift.

The current study proved that people who did not know where to seek medical help at night and on national holidays were significantly more likely to visit EDs on weekends than on weekdays (28.5%; 23 vs. 10.98%; 9). This suggests that if these patients had such knowledge, they would have sought help from NHH centers for their health problem, and they may have been able to solve it at this level of care, without burdening the ED. In their study, Pilip et al. showed that patients who were asked about NHH services had limited knowledge about the principles of their operation and the provision of services in holiday and nighttime healthcare facilities [6]. Additionally, according to the

results of the inspection conducted by NIK in 2014, it can be concluded that there is a large disproportion in the number of visits to NHH centers between weekdays and non-working days. In the former case, depending on the size of the area covered, between 4 and 20 people were accepted for treatment, while in the latter it was even up to 200 people. With such data, the number of teams on duty during weekends was estimated to be insufficient and the number of teams on duty on weekdays to be excessive [27]. Considering these data and the findings of this study, in order to relieve the burden on EDs of patients in no immediate danger, there should be a greater focus on raising awareness about the locations of and services provided by NHH centers and on increasing the number of doctor and nurse teams in these places.

Limitations of the study

The study is limited by the small size of the study group and by the fact that the study was conducted in only a single emergency department. It is recommended to include a larger group of patients from several EDs in a similar study.

Conclusions

1. It is difficult to define the characteristics of healthcare service recipients who appear at EDs in terms of whether they are admitted on a weekday or a weekend day, because sociodemographic variables, most beliefs of patients, the presence of chronic disease, the level of anxiety and depression and the level of satisfaction with life did not significantly determine the ED admittance rate by weekdays versus weekends. Because of that, the ED staff should be prepared to receive patients of different sociodemographic backgrounds and states of health who possess different levels of knowledge and beliefs about the functioning of EDs and PHFs.
2. People who were admitted to the ED significantly more often on weekends than on workdays because of their lack of knowledge about the locations and operations of Holiday and Night-time Healthcare services should receive appropriate education in this respect.

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