

Dealing with Discharge against Medical Advice in Emergency Department¹

Hamid Kariman¹, Ahmad Reza Khazaei^{1*}, Ali Shahrami¹, Hamid Reza Hatamabadi^{1,2}

1. Emergency medicine department, Imam Hossein hospital, Faculty of medicine, Shahid beheshti university of medical sciences, Tehran, Iran
2. Safety promotion and injury prevention research center, Shahid beheshti university of medical sciences, Tehran, Iran.

ABSTRACT

Background: Discharge Against Medical Advice (AMA) is one of the important issues in health care centers that can lead to chronicization, readmission or even death in patients. This study examines the reasons for this problem in the Emergency Department (ED) of Imam Hossein (AS) Hospital.

Method: This was a two-phase, semi-experimental study, where phase 0 is devoted preparing a new AMA form, and phase 1 deals with the reasons for AMA, the impact of the intervention using this new form and the role of the resident physician in informing patients regarding the risk of leaving the hospital, in Imam Hossein Hospital, Tehran and in the year 2012. The collected data was analyzed using SPSS. 20 software program and $p < 0.05$ was considered as the significance level.

Results: In the second phase of the study, from the total number of 1,882 participants, 380 patients (20.1%) abandoned the idea of leaving the hospital due to the resident's advice, and 1,502 people (including 41.6% female patients and 58.4% male patients) were discharged against medical advice. Most patients were discharged on the night shifts (38.9%); people over 60 years old showed higher discharge rate (36.4%); physicians' advice for more diagnostic tests and longer hospitalization was rejected by 28.2% and 23.9% of the patients respectively. Patients mostly checked themselves out of the hospital due to feeling better (47.1%).

Conclusion: Despite the lower levels of AMA compared to the past years, the figures are still high mostly because patients feel better. Informing the patients concerning the risks and complications of the issue by treatment staff plays an important role in prevention from and diminishing this problem.

KEYWORDS: Discharge Against Medical Advice, AMA, Emergency, Reasons for AMA, Reducing AMA.

1. INTRODUCTION

Discharge against Medical Advice (AMA) means patient's choice to leave the hospital before doctors permit his/her discharge. This will increase the risk of severity of the illness and readmission (1-4). Since a significant number of these patients have underlying serious diseases and their treatment remains incomplete due to such choice, the risk of complications and problems will be high for them (4). When patients check themselves out of the hospital against the advice of the doctors, this should be considered because of a process that has not succeeded, for various reasons, in convincing the patients to continue treatment. However, even if such a decision would be made due to personal and social problems, psychological abnormality, financial problems, etc, this will also indicate the inability of treatment system to convince the patient and to solve his/her problem to change his/her mind.(5)

AMA is a common problem in the health sector and constitutes more than 2% of public hospital discharges (6, 7). Several studies have indicated that patients leave the hospital against medical advice due to medical and social reasons that could be related to oneself, family, economic problems, poor relations with staff, dissatisfaction with the treatment process and poor hospital environment (8-12). Several researches have shown that AMA rate is higher in teaching hospitals (13, 14). The patients who leave the hospital against such advices are prone to the risk of incomplete treatment, as well as future admission and subsequent chronic diseases (14, 15). In a previous study, it was understood that the rate of emergency admission is higher in the first nine days after AMA (13). Readmission of such patients to hospitals not only increases the treatment costs but also postpones their treating process (16-18), so the original disease may develop into a chronic one. It was found in a previous study that the patients who were admitted to a hospital after AMA had higher treatment costs up to 56% than their first admission (10).

In another study, lack of health insurance coverage and poor attendance were the main reasons for patients to quit the hospitals (5). The highest levels of AMA, in a study conducted in Kahan, were attributed to the emergency department and were up to 30.28% of the cases, where 61.4% of the factors were associated with the

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patient-related factors, 24.96% of them to hospital staff, and this was the hospital environment for 116 patients (19). In another study, the mean AMA level at subordinated hospitals to Tehran University was estimated to be 7.1% (20).

In the studies conducted in Europe and the U.S., the AMA level is far lower than that in our country, mainly reported from 1.2% to 2%; meanwhile, despite such low levels, it is still considered a common problem for the quality of health care services. In these surveys, AMA has been associated with increased mortality and disability comparing with other patients; for example, in patients with asthma readmission to the emergency department and hospitalization within 30 days has increased 4 times and 3 times, respectively. In a general service, the risk of hospitalization has been 7 times higher mainly accompanied with previous diagnoses. No internal statistics are available regarding the increased costs (1), however, some studies have reported up to 56% increase in costs (2, 8). The information provided by external studies indicates that gender (being male), poor socioeconomic status, young age, lack of insurance coverage, drug abuse, lack of family physician, previous AMA, and race (black) have been effective in opting for AMA (21, 25).

Since incomplete hospitalization period is a risk factor leading to relapse and readmission, and incurs higher costs for patients and medical staff, and due to the high levels of AMA in Iran (especially in emergency departments), inadequate number of studies in this regard, and the necessity for disseminating information and raising public awareness, this study was conducted.

METHODOLOGY

This study was designed as a semi-experimental, cross-sectional study and was conducted for six months. At phase 0 of the study, 200 patients who had checked themselves out of emergency department, Imam Hossein Hospital from April to September 2011 were contacted by phone and the main reasons for such decisions were determined. Then, a form was prepared, namely "Discharge Against Medical Advice (AMA) Questionnaire". The validity of the questionnaire was determined both formally and based on the feedbacks from emergency medicine professors. Its reliability was also determined using split-half method where $r = 0.78$. Phase 1 of the study was conducted for six months from 2012-01-05 to 2012-06-04 at emergency department, Imam Hossein Hospital. During this period, the treatment team was provided with AMA questionnaire and for each AMA, a secretary, nurse or doctor was required to fill out the form that was finally to be signed by a doctor. Before completing the form, the resident assistant spoke with the patient or his or her attendants and informed them of the disease and the risks of leaving the hospital. This was the intervention that occurred before AMA. Data analysis was conducted using SPSS, Ver. 20 software program and $p < 0.05$ was considered as the significance level.

RESULTS

In this study, the total number of participants was 1,882 patients, among which 380 people (20.1%) abandoned the idea of leaving the hospital due to the resident's advice, and 1,502 people (including 41.6% female patients and 58.4% male patients) were discharged against medical advice; 201 participants (13.4%) were less than 20 years old, 371 participants (24.2%) were between 20 and 40 years old, 375 patients (25%) were between 40 and 60 years old and 547 patients (36.4%) were over 60 years old. The mean and the standard deviation of the age of the patients was 38.6 ± 17.5 , respectively (Table 4). The mean and the standard deviation of their presence in emergency department were 5.57 ± 3.87 hours. Totally, 414 patients (27.6%) were discharged from the hospital in the morning, 503 patients (33.5) in the afternoon, and 584 patients (38.9%) on the night shifts.

Tables 1 and 2 present the distribution of the services in charge of the treatment of the patients and the diagnosed disease. The treatments refused by the patients were as follows: 359 patients (23.9%) refused admission, 141 patients (9.4%) refused a surgical procedure, 290 patients (19.3%) refused to be placed under medical surveillance, 109 patients (7.3%) rejected referral to other medical centers, and 424 patients (28.2%) did not agree with performing additional diagnostic procedures. The risk of mortality in the case of refusing the proposed treatments was reported to be high for 168 patients (11.2%); the risk of morbidity was reported to be high for 605 patients (40.3%) and the risk of chronicization of the disease was reported to be high for 725 patients (48.3%). A total number of 1,356 patients (90.3%) checked themselves out of the hospital after intervention by the physicians, while 138 patients (9.2%) left the hospital without such intervention. Table 3 shows the reasons for AMA.

The average AMA rate of the patients who were placed under surveillance within the six-month period of the study was 11.3%, which showed a significant decrease in comparison with the rate of 13.8% for the same period in the previous year ($p < 0.05$). (Figure 1)

There was a significant correlation ($p < 0.01$) between genders the age groups, and the number of men who left the hospital on the basis of AMA was greater than the number of women. The highest levels of AMA was observed in men over 60 years old, i.e. 286 men over 60 years old left the hospital on the basis of AMA.

DISCUSSION

In this study, the reasons for AMA among the patients admitted to emergency department of Imam Hossein (AS) Hospital in the year 2012 and monitoring the interventional factors to reduce it were studied. The results of this study indicate that AMA is still common in hospitals, although its current level is lower than its level in previous years.

The statistics related to AMA among the patients admitted to emergency department of Imam Hossein (AS) Hospital showed that during the six-month period of the study, the AMA rate decreased significantly in comparison with that rate in the same period and in previous year. This reflects the efficiency of AMA questionnaire, which established the requirements for the medical staff to manage such patients more effectively and to prevent from AMA as much as possible to. Interestingly, however, the mean AMA level for June and July 2012 was up to 12.47%, meanwhile this rate was 11.27% for the first four months of the study. Such increase may be due to two issues: first the graduation exam for residents which was conducted at this time, and in turn diminished their concentration on AMA occurrence, and they even sometimes encouraged patients to leave the hospital; second, improper management in completing AMA questionnaires, where secretaries, nurses and doctors perceived that they will be faced without any consequences if they would not complete these forms.

Previous studies in Iran and other countries have reported different results regarding AMA. A study by Rangraz conducted in 2008 among the patients in the hospitals of Kashan University of Medical Sciences estimated AMA rate to be 10.3%. The study conducted by Kabirzadeh for the hospitalized patients in Bouali Hospital in Sari reported that index to be 2/2% in 2008. A two-year study by Dono et al. in 2003 reported it as 0.34%; Abdul Rashid reported the index to be 2.4% during one year study; Berger in 2008 estimated it as 1%; C. Bourne as 0.57 for a two-year study; Fisla as 0.07% for a period of two years in 2007; and finally Chia reported it as 26% in the year 2003 in a six-month study (22-27). This rate has been reported to be 1% in Canada and between 0.8 to 2.2% in the United States (18-20), which are different from the results obtained from Imam Hossein (AS) Hospital. Such difference can be attributed to the research communities and the services provided by the hospitals.

The ratios of the discharged patients by all age groups showed that the highest AMA level can be found in older people (over 60 years old) (51%). (Table 4) Seniors as a vulnerable social class are more susceptible to diseases and deaths than any other age groups of the society, and this is even more important in emergencies. Due to the various problems faced with by seniors, paying special attention to them is of great necessity.

In the present study, the AMA rates among males and females were significantly different, where it was higher for men (58.4%, for males compared with 41.4% for females) ($p < 0.05$). It should be noted that, however, this difference does not mean that the patients individually opt for AMA, but in many cases, attendants of the patients try to discharge them.

In this study, the maximum level of AMA occurred on night shifts and in the evening shift as 38.9% and 39.5% respectively. Night is when patients needs more care and treatment and this may increase the level of dissatisfaction with medical care services on night shifts that is why the patients' tendency towards AMA is higher at night. Our findings are consistent with previous studies in this regard (20).

The ratio of patients who discharged themselves against medical advice to the admitted patients was generally higher for neurology services (15%) and internal medicine (12.2%), respectively, and these services had the highest AMA rate in the study. (Table 1) On the other hand, 24.6% of the patients who had left the hospital on the basis of AMA had trauma. Disorders of the nervous system (15.2%), circulatory system (12.4%), gastrointestinal disorders (11.6.), respiratory diseases (9.5%) and musculoskeletal and connective tissue diseases (8.7%) were the highest diagnoses among patients. It seems that the abovementioned services and their patients require different strategies from other patients and departments for the purpose of prevention from and reduction of AMA.

Patients in this study rejected further diagnostic measures (28.2%), hospitalization (23.9%) and to be placed under medical surveillance (19.3%) as proposed by the medical team. This reflects the incomplete information of the patients concerning their conditions and the consequences of an incomplete treatment process on the one hand, and no effort of the medical team for informing patients in this regard, on the other hand. Certainly, if patients will be informed of the risks of the diseases, this can greatly affect their decision for leaving hospital.

Nearly half of the patients participating in this study (47.1%) have reported their reasons for leaving the hospital as "feeling better". Better feeling is the primary reason that encourages the patients to leave the hospital. It should be noted that 9.2% of patients discharged themselves due to the oral statements of the physicians regarding that their conditions have improved. The results of this study are consistent with those of the previous studies. A study conducted in Canada also recounted feeling better as the main reason for leaving the hospital. Studies conducted in the United States (6, 7) have reported the economic and financial problems of the patients as the most important factor in leaving hospitals, meanwhile in this study, only 4% of the patients discharged against medical advice due to financial difficulties. To explain this, it may be argued that in the medical centers

of the United States many problems have been overcome so far and financial problem is still among the unsolved issues, however, the medical staff in our country still has to deal with many issues and problems related to AMA. Nevertheless, the rate of the patients who leave the hospital against medical advice in the United States is about 0.8-2.2%, which is much lower than the figures reported for Iran. The second leading cause for AMA in this study has been leaving the hospital and referring to private centers (10.5%); this is not so strange, because Imam Hossein (AS) Hospital is a public and teaching health care center and due to its lower costs comparing with the private hospitals admits numerous patients on a daily basis. Some patients preferred private centers due to their better quality treatment services. In addition, 6% of patients left the hospital because they had some personal ties with other medical centers. A study conducted in Canada stated that 28% of AMA cases are due to dissatisfaction with the treatment. Other studies have also reported poor attendance and improper behavior of medical staff as a major reason for AMA. However, in the present study only 3.3% of patients were dissatisfied with their course of treatment, only 0.8% of the patients complained about inappropriate treatment by staff, and 3.1% of patients were dissatisfied with the unaccountability of physicians and medical staff. In a study conducted in Canada, 14% of the patients left the hospital due to unfavorable environment (4). In the study by Rangraz, also 14% of patients left the hospital for the same reason (19). In the present study, only 1.4% of the patients pointed to overcrowding and insufficient attendance as their reason for being dissatisfied with and leaving the hospital; 2.7% of the patients cited lack of medical specialists as their reason for leaving emergency department of Imam Hossein (AS) Hospital, meanwhile the department has sufficient specialists to treat a variety of diseases.

Other minor issues referred to by a small number of patients was that there is no ICU bed, inpatient bed or CCU bed (2% and 1.1%), thus, equipping the emergency department with the facilities needed by patients is among the basic requirements that should be considered by managers.

Approximately 20.1% of the patients after talking to the doctor and the treatment team abandoned their decision to leave the hospital. This reflects the great importance of the information that can be provided by resident physicians for patients to change their minds in this regard. It should be noted that 27.5% of the patients who were admitted to the emergency department of Imam Hossein Hospital were brought to the hospital by the ambulances of medical emergencies center, meanwhile the rate of AMA for them is 58%, which may indicate the impact of lack of choice of hospital by the patients and their attendants. Traffic injuries who had left the hospital later due to feeling better had no serious problem and they had been visited only because they had been brought by ambulances. Many of these patients had no choice regarding the hospital for their treatment and the dissatisfaction resulting from lack of choice led them to leave the hospital for various reasons. About 15% of those who left the hospital because they felt better could fully be discharged and about 10% also could be discharged two hours later. For about 10% of the members of this group paraclinical measures had been requested which seemed to be expensive, unnecessary, or not urgent.

It is recommended that for all shifts, a person must be appointed to control the AMA process for all patients. This will prevent from some false suggestions and improper information given by the doctors and the staff to the patients. Even filling out the forms proved to be effective in preventing some unrealistic comments and reduction of AMA rate since commencement of intervention and by filling out the forms indicates the same. The best position who may control the AMA process is the emergency medical attendant who has enough authorities over doctors and the staff. Otherwise, shift supervisor can be the second choice. A timing schedule should be prepared, documented and communicated to all groups and, shift supervisor and the attendant regarding visiting the patients and deciding about them. The timeframe for preparing and carrying out paraclinical procedures should be adhered to more seriously, so that test results may be prepared in a shorter time and no excess costs may be incurred by the patient. The patients without life-threatening problem who have been taken to the hospital by the ambulances of medical emergencies center can be given the right to choose their hospital, so that more satisfaction of the patients can be achieved and probable leaving of the hospital by them due to dissatisfaction may be prevented.

CONCLUSION

The results of this study indicate that AMA is still common among patients, although the figures have fallen slightly over the past few years. In addition, filling out AMA questionnaire by the treatment team and providing adequate information to the patients regarding the dangers and consequences of leaving the hospital may have a positive effect in reducing AMA rate comparing with previous months. Retrospective and prospective studies are needed for more thorough studies in this regard and the patients' conditions, treatment staff and other affecting factors should be taken into consideration for better medical decision, so that this event can be prevented and reduced. Given the high levels of AMA for the elderly in this study, some specific measures to support these vulnerable patients are necessary. To raise awareness of the patients regarding the dangers and consequences of leaving the hospital, effective communication should be established and

strengthened between patients, physicians and medical staff. To increase patients' confidence in and awareness regarding the medical team, psychologists and social workers can employed.

Table 1: Services in charge of treatment of the patient

Name of the service	Number (n = 1500) (%)	Total number (%)	AMA ratio to total
Internal medicine	326 (21.7%)	2672 (20%)	12.2
Surgery	115 (7.7%)	2634 (19.8%)	4.3
Neurosurgery	29 (1.9%)	399 (3%)	7.2
Neurology	258 (17.2%)	1712 (12.8%)	15,
Orthopedics	203 (13.5%)	2246 (16.7%)	9
Children	42 (2.8%)	463 (3.5%)	9
Gynecology and Obstetrics	32 (2.1%)	595 (4.5%)	5
Radiotherapy	9 (0.6%)	198 (1.5%)	4
Ophthalmology	2 (0.1%)	357 (2.7%)	12:05
Emergency	223 (14.8%)	1862 (14%)	11,
Mental	22 (1.5%)	198 (1.5%)	11,

Table 2: Information regarding diagnosis

Disease	Number (n= 1500)	Percentage
Infectious	34	2.3
Neoplasm	23	1.5
Blood and immune diseases	54	3.2
Endocrine	25	1.7
Mental	52	3.5
Nervous	229	15.9
Eye diseases	11	0.7
Blood circulation	186	12.4
Respiratory diseases	142	9.5
Digestion	174	11.6
Skin	16	1.1
Musculoskeletal	131	8.7
Urology	29	1.5
Pregnancy and childbirth	20	1.3
Poisoning	5	0.3
Trauma	370	24.6

Table 3: Reasons for AMA

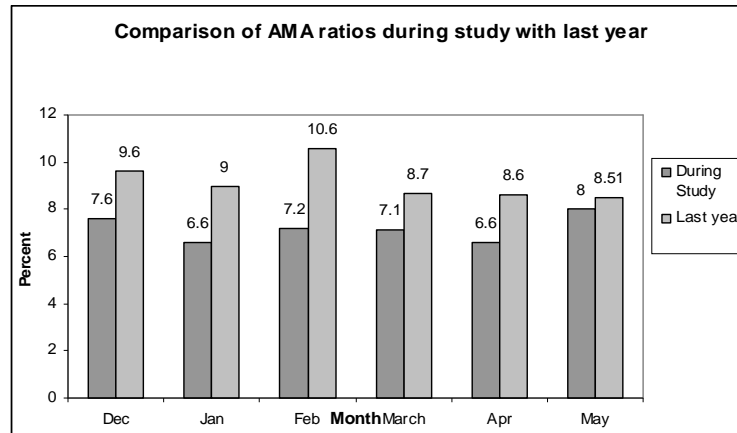
Reason	Number (n= 1500)	Percentage (%)
Feeling better	708	47.1
Oral statements of physicians regarding improved conditions	138	9.2
No ICU bed	30	2
No CCU bed	17	1.1
No inpatient bed	31	2.1
Lack of appropriate specialty	40	2.7
Financial problems	60	4
Referring to a private center	158	10.5
Referring to certain centers due to personal ties	112	7.5
Advice of the doctor and staff to refer to other centers	69	4.6
Unaccountability of the physician and the staff	47	3.1
Poor attendance	12	0.8
Overcrowding and insufficient care	21	1.4
Dissatisfaction with the course of treatment	50	3.3

Table 4: AMA ratios by age groups

Age group	AMA (number /percent)	AMA ratio to total*
Less than 20 years old	201 (13.4%)	23%
20 to 40 years old	371 (24%)	13%
40 to 60 years old	375 (25%)	24%
Over 60 years old	547 (36%)	51%

* The ratios of AMA of patients to total patients admitted during the study period by age groups

Figure 1: The ratios of AMA of patients to total patients during the study period and the corresponding period of the previous year



REFERENCES

1. Alfandre D. 'I'm Going Home': Discharges Against Medical Advice. *Mayo Clin Proc.* 2009;84(3):255-260.
2. Taqueti VR. Leaving against medical advice. *N Engl J Med.* 2007; 357(3):213-215.
3. Carrese JA. Refusal of care: patients' well-being and physicians' ethical obligations: "but doctor, I want to go home". *JAMA.* 2006;296(6):691-695.
4. Hwang SW, Li J, Gupta R, Chien V, Martin RE. What happens to patients who leave hospital against medical advice? *CMAJ.* 2003;168(4):417-420.
- 5- Taqueti VR. Leaving against medical advice. *N Engl J Med* 2007; 357(3): 213-5.
- 6- Soleimanpour H, Gholipouri C, Salarilak S, Raoufi P, Gholi R, Jafari A, Rajaei R, Soleimanpour M. Emergency department patient satisfaction survey in Imam Reza Hospital, Tabriz, Iran. *International Journal of Emergency Medicine* 2011, 4:2.
7. Shirani F, Jalili M, Asl-E-Soleimani H. Discharge against medical advice from emergency department: results from a tertiary care hospital in Tehran, Iran. *Eur J Emerg Med.* 2010 Dec;17(6):318-21.
8. Rangraz Jeddi F, Rangraz jeddi M, Rezaeiimofrad M. Patients' Reasons for Discharge against Medical Advice in University Hospitals of Kashan University of Medical Sciences in 2008. *Hakim Research Journal* 2010; 13(1): 33- 39.
9. Fiscella K, Meldrum S, Peter F. Post partum discharge against medical advice: who leaves and does it matter. *Matern Child Health J* 2007; 11(5): 431- 436.
10. Omidvari S, Shahidzadeh A, Montazeri A, Azin SA, Harirchi AM, Sourì H: Patient satisfaction survey in the hospitals of Tehran University of medical Sciences, Tehran, Iran. *Paiesh, Health Sciences Journal of Jihad Daneshgahi* 2008, 2:141-152, (Persian).
11. Roodpeyma S, Hoseyni SA. Discharge of children from hospital against medical advice. *World J Pediatr.* 2010 Nov;6(4):353-6. Epub 2010 Jun 12.
12. Berger JT, Discharge against medical advice: ethical considerations and professional obligations, *J Hosp Med* 2008;3(5): 403-408.
13. Duno R, Pousa E, Sans J, Tolosa C, Ruiz A, Discharge against medical advice at a general hospital in Catalonia, *Gen Hosp Psychiatry* 2003; 25(1): 46-50.
14. Seaborn MH, Osmun WE, Discharge against medical advice: a community hospitals experience, *Can Journal Rural Med* 2004; 9(3): 148-153.
15. International statistical classification of diseases and related health problems. 10 th revised. Geneva, WHO publication 1994.

16. RangrazJeddi F, RangrazJeddi M, RezaeeiMonfared M, Discharge against medical advice in hospitals of Kashan University of Medical Sciences during 6 month of 2008, *Hakim* 2010; 13(1); 33-39.
17. Abdulrasheed NA, Babalola MO, Clinical spectrum of discharge against medical advice in a developing country, *Indian J Surg* 2008; 70 (2): 68-72.
- 18- Weingart SN, Davis RB, Phillips RS. Patients discharged against medical advice from a general medicine service. *J Gen Intern Med* 1998; 13(8): 568-71.
- 19- Shirini F, Jalali M, Asl-e-Soleimani H. Discharge against Medical Advice from Emergency Department: Results from a Tertiary Care Hospital in Tehran, Iran. *Eur J Emerg Med* 2009 Nov 5. [Epub ahead of print].
- 20- Saitz R, Ghali WA, Moskowitz MA. The impact of leaving against medical advice on hospital resource utilization. *J Gen Intern Med* 2000; 15: 103-7.
- 21- Weingart SN, Davis RB, Phillips RS. Patients discharged against medical advice from a general medicine service. *J Gen Intern Med* 1998; 13(8): 568-71.
- 22- Shirini F, Jalali M, Asl-e-Soleimani H. Discharge against Medical Advice from Emergency Department: Results from a Tertiary Care Hospital in Tehran, Iran. *Eur J Emerg Med* 2009 Nov 5. [Epub ahead of print].
23. Taqueti VR. Leaving against medical advice. *N Engl J Med*. 2007 Jul 19;357(3):213-5.
24. Carrese JA. Refusal of care: patients' well-being and physicians' ethical obligations: "but doctor, I want to go home". *JAMA*. 2006 Aug 9;296(6):691-5.
25. Duñó R., Pousa E., Sans J., et al. Discharge against medical advice at a general hospital in Catalonia. *Gen Hosp Psychiatry*. 2003;25(1):46–50.
4. Cook C.A., Booth B.M., Blow F.C., et al. Risk factors for AMA discharge from VA inpatient alcoholism treatment programs. *J Subst Abuse Treat*. 1994;11(3):239–245.
26. Berg B.J., Dhopes V. Unscheduled admissions and AMA discharges from a substance abuse unit. *Am J Drug Alcohol Abuse*. 1996;22(4):589–593.
27. Anis A.H., Sun H., Guh D.P., et al. Leaving hospital against medical advice among HIV-positive patients. *CMAJ*. 2002;167(6):633–637.
28. Green P., Watts D., Poole S., et al. Why patients sign out against medical advice (AMA): factors motivating patients to sign out AMA. *Am J Drug Alcohol Abuse*. 2004;30(2):489–493.
29. Onukwugha E., Saunders E., Mullins C.D., et al. Reasons for discharges against medical advice: a qualitative study. *Qual Saf Health Care*. 2010;19(5):420–424
30. Moy E., Bartman B.A. Race and hospital discharge against medical advice. *J Natl Med Assoc*. 1996;88(10):658–660.
31. Ding R, Jung JJ, Kirsch TD, Levy F, McCarthy ML. Uncompleted emergency department care: patients who leave against medical advice. *Acad Emerg Med*. 2007 Oct;14(10):870-6.
32. Shirani F, Jalili M, Asl ESH. Discharge against medical advice from emergency department: results from a tertiary care hospital in Tehran, Iran. *Eur J Emerg Med*. 2010 Dec;17(6):318-21.
33. Hwang SW, Li J, Gupta R, Chien V, Martin RE. What happens to patients who leave hospital against medical advice? *CMAJ*. 2003 Feb 18;168(4):417-20
34. Hatamabadi H, Mohammadi A. Reasons for Long-Stay Admission in a Typical Overcrowded Emergency of A Teaching Hospital in Tehran Capital City. *Pajoohandeh Journal*. 2008;13(1):71-5.
35. Baptist AP, Warriar I, Arora R, Ager J, Massanari RM Hospitalized patients with asthma who leave against medical advice: characteristics, reasons, and outcomes. *J Allergy Clin Immunol* 2007 119: 924–9.
36. Aliyu ZY .Discharge against medical advice: sociodemographic, clinical and financial perspectives. *Int J Clin Pract* 2002 56: 325–7.
37. Glasgow JM, Vaughn-Sarrazin M, Kaboli PJ .Leaving against medical advice: risk of 30-day mortality and hospital readmission. *J Gen Intern Med* 2010 26:926–9.