



## **Evaluation of Discharge Against Medical Advice in Victims of Traffic Accidents at the Emergency Department: A Case study**

**Behrooz Pouragha<sup>1</sup>, Roya Rajae<sup>2</sup>, Marziye Najafi<sup>3,4\*</sup>**

<sup>1</sup> School of Health, Alborz university of medical sciences, Karaj, Iran

<sup>2</sup> School of Health, Shahid Beheshti university of medical sciences, Tehran, Iran

<sup>3</sup> School of Health, Tehran university of medical sciences, Tehran, Iran

<sup>4</sup> Non-communicable Disease Research Center, Alborz University of Medical Sciences, Karaj, Iran

### **ARTICLE INFO**

#### **Article History:**

Received: 22 Jun 2018

Revised: 29 Jul 2018

Accepted: 19 Sep 2018

#### **\*Corresponding Author:**

Marziye Najafi

School of Public Health,  
Tehran University of Medical  
Sciences, Enqelab Square,  
Tehran, Iran.

#### **Email:**

marziyenajafi@yahoo.com

#### **Tel:**

+98-9197939354

### **ABSTRACT**

**Background:** Annually in the world 2.1 million people are killed and more than 50 million people are either injured or disabled in road accidents. Discharge against medical advice (DAMA) has increased risk of morbidity and mortality. This study aimed to evaluate the rate and reasons for DAMA in the traffic accident victims at the emergency department (ED) to provide solutions in reducing its complications.

**Methods:** This is a descriptive and cross-sectional study. The population in this study consisted of the victims of traffic accidents referred to the ED of Imam Khomeini Hospital affiliated by Tehran University of Medical Sciences. The random sampling method was used and by Cochran formula 147 people were selected and examined for two months. In order to evaluate the validity of checklists, 10 patients were randomly assigned to call and the cause of discharge was requested. Data collection was done through DAMA checklist in the patients' documents. The findings were entered into spss16 for descriptive statistics and analysis.

**Results:** Most of traffic accident victims (79.6%) discharged with physicians' recommendations. The DAMA was 17.7% and 2.7% escaped from hospital. In all of patients' DAMA (26), 46.15 percentage was about all four reasons, 23.08 percentage was treatment reason, and the last reason was due to hospitalized issues (3.85%).

**Conclusion:** Among the four causes of DAMA, treatment problems was higher than others. Patients' participation in the selection of treatment and focusing on medical equipment are recommended. It is a challenge to the quality of health care services when patients do not adhere to their physicians' recommendations for treatment.

**Keywords:** Discharge Against Medical Advice, Emergency Department, Traffic Accident, Victim, Hospital

### **Citation**

This paper should be cited as: Pouragha B, Rajae R, Najafi M. **Evaluation of Discharge Against Medical Advice in Victims of Traffic Accidents at the Emergency Department: A case study.** Evidence Based Health Policy, Management & Economics. 2018; 2(3): 202-7.

**Copyright:** ©2017 The Author(s); Published by Shahid Sadoughi University of Medical Sciences. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



## Introduction

Discharge against medical advice (DAMA) has been a prevalent and common problem for health care providers. The patient chooses to leave the hospital before the physician's recommendation to discharge (1). The Patients who discharge against medical advice probably still need further care and treatment. After DAMA and lack of follow-up care, most of these patients are at increased risk of morbidity and mortality (2, 3). The average of DAMA is about 1–2%, and these patients' potential to suffer adverse health outcomes is of major concern (4).

Between 2002 to 2011, in the U.S., more than 338,000 inpatient hospitalizations were discharged against medical advice each year, with a 1.9% average annual increase in prevalence over the decade. The predictors of DAMA are, including lack of health insurance, male sex, region, younger age, race, ethnicity, income, primary diagnosis, severity of illness, hospital location, type and size, psychiatric illness, and drug or alcohol abuse (5, 6).

Several studies in various settings in some departments, including Emergency Department (ED) have also shown that readmission rates of the patients discharged AMA are much higher than their counterparts discharged with approval (6). In Sayed's study, patients who left against medical advice (AMA) after the first visit were mainly seen by an emergency medicine specialist (40%) or an internal medicine specialist (42.9%) (7). The percentage of DAMA is one of the indicators in assessing the quality of emergency services in Iran (8).

Ending a hospitalization prematurely can have implications for evaluation and resource utilization system. DAMA is likely to result in greater subsequent utilization, including more return visits, and perhaps greater costs for the subsequent care of an initially inadequate treatment condition. If hospital care is incomplete, the patient may continue to be ill and readmitted. Overall costs of caring for these patients over time may be higher than patients who leave the hospital with medical recommendation. Therefore, preventing DAMA is likely to benefit both patients and health systems

(9, 10). The health worker feels distressed and powerless when patients choose suboptimal care; moreover, disagreement over a DAMA can cause patient-physician and intra team conflict (11).

Studies reported that DAMA rate was higher than other countries and the major subject was about patient issue and the ED had higher DAMA rate than other units (in a mental hospital was 3 and in the ED 20%) (12). The ED is the entrance for the traffic accident victims to the hospital to receive care and treatment. The staff in this section guarantee to admit the patients to the ED and provide brisk treatment (13). Healthcare systems in the world are trying to bring down the due-to-accident deaths by establishing emergency centers (14).

Annually 2.1 million people are killed and more than 50 million people are either injured or disabled in road accidents in the world; 85% of deaths and 90% of handicaps occur in middle and low-income countries (15). The WHO has reported that in 2012 injuries or traumas were the third cause of death (due to road accidents) which comprise 8.1% of all the deaths in the country (16).

In various studies, the patients' medical records were recommended (17, 18) to assess discharge with personal satisfaction and to formulate plans to reduce or prevent it. Therefore, this study aimed to evaluate the reasons for DAMA in the traffic accident victims who have high rates of mortality and morbidity in Iran by evaluating patients' records.

## Materials and Methods

The population of this descriptive and cross-sectional study consisted of traffic accident victims referred to the ED of Imam Khomeini Hospital in 2015. The average number of the casualties admitted in the ED was 120 people per month. The sampling method was random and by using the Cochran formula the sample capacity was calculated to be 147 people for two months.

Data collection was done through patients' documents in hospital. Data collected by completing the realized checklist filed in patients'



documents . The checklist contained patients' demographic information (namely age, gender, marital status) and specific data, such as the type (DAMA, escape, with a physician's recommendations) and reasons of DAMA, including hospitalized problem, treatment, personal, relations with health workers (physicians, nurses and other workers in the hospital).

In order to evaluate the validity of checklists, 10 patients were randomly assigned to call and the cause of discharge was requested. The call number of the patients was extracted from the document and the researcher personally contacted with them. Their reasons were consistent with the reason given in the patients' document. The finding were entered into spss16 for descriptive statistics and analysis. In addition, this study was approved by the ethics code IR.SBMU.PHNS.REC. 1394.20 in Shahid Beheshti University of Medical Sciences. To investigate the patients' documents, coordination with the ED management and hospital management was necessary and a written letter from was received and the researchers emphasized the principle of confidentiality of the data. The telephone call time to the patient was explained by the purpose of the study and the confidentiality of the patients' name.

This study was conducted with the ethical code of IR.SBMU.PHNS.REC.1394.20 in Shahid Beheshti University of Medical Sciences.

### Results

Overall in the ED of Imam Khomeini Hospital, 147 patients were studied and their demographic information are given in Table 1.

For the variety of gender, out of 147 studied patients, 38.8% of whom were female and the rest(90 patients) were male. For the variable of age 12.9% of all the patients were under 20, 47.6% of them were between 20 and 40, and the rest were above 40. For the marital statue, 33.3% of the patients were single (table1).

Table 2 reveals that most of traffic accident victims (79.6%) discharged with physicians' recommendations, 17.7% of them discharged AMA and 2.7% escaped from hospital.

Table 3 shows that in all patients discharged AMA (26), 46.15% was about all four reasons, 23.08% was for treatment reason, and the last reason was hospitalized issue (3.85%).

The patients' remarks during a telephone call were in line with the information contained in the patients' documents.

**Table 1.** The Distribution of Patients in Terms of Demographic Variables

Demographic variable		Number	Percentage
Gender	Female	57	38.8
	Male	90	61.2
Age	<20	19	12.9
	21-40	70	47.6
	41-60	47	32.0
	>61	11	7.5
Marital status	Single	49	33.3
	Married	98	66.7
Total		147	100

**Table 2.** The distribution of Type of Discharge Variable

Type of discharge	Number	Percentage
With a physician's recommendation	117	79.6
DAMA	26	17.7
Escape	4	2.7
Total	147	100



**Table 3.** The Distribution of Reason of DAMA Variable

Reason of DAMA	Number	Percentage
Hospitalized	1	3.85
Treatment	6	23.08
Personal	4	15.38
Relations with health worker	3	11.54
All of reason	12	46.15
Total	26	100.00

### Discussion

This study aimed to evaluate the DAMA in traffic accident victims referred to the ED of Imam Khomeini hospital of Tehran. The percentage of DAMA was 17.7 which is less than the result of the study at a hospital in Khoy city with 6.82% DAMA of all inpatients and 19.65% of all outpatients in the ED (19), as well as Asady's study (31.4%) (20), Shiriani's study (20.2%) (21). In a study in the U.S., out of 104,566 documented ED visits, 1.1% of patients discharged AMA (22). Rangraz et al. indicated that DAMA rate was higher than other countries; moreover, the major subject was about patients' problem and it was higher in the ED than other units (12). The rate of DAMA in the current study may be due to the fact that traffic accident victims did not refer to the hospital with their choice. As soon as a relative improvement prefers to be transferred to other hospitals or to a hospital near their neighborhood and Continue treatment with their trusted doctors. However, in this study, the DAMA rate in the ED was better than the same studies in Iran.

In the present study, most people discharged with personal satisfaction, declared the reasons for leaving the hospital for all four factors (reasons for hospitalized, reasons for treatment, personal reasons and relation with employees). After that, most of the reasons for the treatment issue were mentioned. The reasons for treatment are including choice of treatment type and related problems. The last reason was the relationship with health workers. Ashrafi et al. indicated that among the causes of DAMA, the high rates were related to personal problems and going to other centers, and the lowest level was related to dissatisfaction with the physician (23). In the study of Mokhtari et al.,

the most important reason for discharging was prolongation of hospital stay. Other reasons were listed as feeling better, tending to stay in the hospital medical center, denial of treatment, dissatisfaction with the physician, lack of facilities, dissatisfaction with the service provider and end stage of the patient (19). Accordingly, in various studies, the least reason for DAMA is the patient's relationship with the health worker and dissatisfaction of them, that is in line with the present study.

In this study, 2.7% of patients escaped of the ED. In a study in Hong Kong, patients' escape of inpatient unit was about 0.3% (24). Studies mentioned that the rate of escape from ED of hospitals was higher than other departments (25). In some studies, patients' escape is one of DAMA; however, they were separately calculated in this study.

Financial issues (26) and lack of insurance (5) were among the reasons in other studies for DAMA; however, traffic accident victims are free of charge. Therefore, other reasons for DAMA are more important than financial issues.

### Conclusion

Among the four causes of DAMA, treatment problems were more important than others. Patients' participation in the selection of treatment and focusing on the medical equipment is recommended. It is a challenge to the quality of health care services when patients do not adhere to their physicians' recommendations for treatment.

### Acknowledgments

Thanks are owed to the hospital and ED managers who cooperated with the authors in conducting this study.



### Conflicts of Interest

There is no conflict of interest to be declared.

### Authors' contributions

Najafi M Designed research; Najafi M and Rajae R Conducted research And Gathering data;

Najafi M and Pouragha B Analyzed data or performed statistical analysis; Najafi M and Pouragha B Wrote the paper. All authors read and approved the final manuscript.

### References

- 1) Karimi SAP, Saravi BM, Farahabbadi EB, Zamanfar D, Fallah M, Abokheily MA. Studying the Rate and Causes of Discharge Against Medical Advice in Hospitals Affiliated to Mazandaran University of Medical Sciences. *Mater Sociomed.* 2014; 26(3): 203-7. Epub 2014 Jun 21 doi:10.5455.msm.2014.26.203-207.
- 2) Youssef A. Factors associated with discharge against medical advice in a Saudi teaching hospital. *Journal of Taibah University Medical Sciences.* 2012; 7(1): 13-8.
- 3) Stearns CR, Bakamjian A, Sattar S, Weintraub MR. Discharges Against Medical Advice at a County Hospital: Provider Perceptions and Practice. *J Hosp Med.* 2017;12(1):11-7.
- 4) Glasgow JM, Vaughn-Sarrazin M, Kaboli PJ. Leaving Against Medical Advice (AMA): Risk of 30-Day Mortality and Hospital Readmission. *Journal of General Internal Medicine.* [journal article]. 2010; 25(9): 926-9.
- 5) Spooner KK, Salemi JL, Salihu HM, Zoorob RJ. Discharge Against Medical Advice in the United States, 2002-2011. *Mayo Clin Proc.* 2017; 92(4): 525-35. doi: 10.1016/j.mayocp.2016.12.022. Epub 7 Mar 11.
- 6) Choi M, Kim H, Qian H, Palepu A. Readmission Rates of Patients Discharged against Medical Advice: A Matched Cohort Study. *PLoS One.* 2011;6(9):e24459. doi:10.1371. journal.pone. 0024459.
- 7) Sayed ME, Jabbour E, Maatouk A, Bachir R, Dagher GA. Discharge Against Medical Advice From the Emergency Department: Results From a Tertiary Care Hospital in Beirut, Lebanon. *Medicine.* 2016; 95(6): e2788.
- 8) Emami Razavi H, Masomi GR, Jalili M, Siyah Tir M. Hospital Emergency departments index (1): Center of Disaster and Emergency Management.
- 9) Ayed IA. What Makes Patients Leave Against Medical Advice? *Journal of Taibah University Medical Sciences.* 2009; 4(1):16-22.
- 10) Alfandre D. Reconsidering Against Medical Advice Discharges: Embracing Patient-Centeredness to Promote High Quality Care and a Renewed Research Agenda. *Journal of General Internal Medicine.* 2013; 28(12): 1657-62.
- 11) Alfandre D, Schumann J. What is wrong with discharges against medical advice (and how to fix them). *JAMA.* [doi: 10.1001.jama. 2013. 280887]. 2013; 310(22): 2393-4.
- 12) Patients' Reasons for Discharge against Medical Advice in University Hospitals of Kashan University of Medical Sciences in 2008. *Hakim Health Systems Research Journal.* [Original]. 2010;13(1): 33-9.
- 13) Hall TL. Communication quality, patient view of waiting times, and satisfaction in the urban fast track emergency department [D.H.A.]. *Ann Arbor: Central Michigan University;* 2007.
- 14) Bahadori M, Mirhashemi S, Panahi F, Sh T, Zaboli R, Rezaee M. Structure, process and practices of the emergency unit of hospitals of baqyatallah University of Medical Sciences. *J Mil Med.* 2008;9(4):257-63.
- 15) Peden M, Scurfield R, Sleet D, Mohan D, Hyder AA, Jarawan E, et al. World report on road traffic injury prevention. Geneva: World Health Organization; 2004.
- 16) WHO, UN-partners. Iran (Islamic Republic of): WHO statistical profile January ; 2015.
- 17) Levy F, Mareiniss DP, Iacovelli C. The Importance of a Proper Against-Medical-Advice (AMA) Discharge: How Signing Out AMA May



- Create Significant Liability Protection for Providers. *The Journal of Emergency Medicine*. 2012;43(3): 516-20.
- 18) Dubow D, Propp D, Narasimhan K. Emergency department discharges against medical advice. *The Journal of Emergency Medicine*. 1992;10(4): 513-6.
- 19) Mokhtari L, Korami Marekani A, Madadi M. Studying the Rate and Causes of Being Discharged Against Medical Advice in Inpatient and Outpatient Wards of Shahid MadanI Hospital in Khoy City, 2014. *Journal of Nursing and Midwifery Urmia University of Medical Sciences*. [Research]. 2016;14(2):100-7.
- 20) Asadi P, Zohrevandi B, Monsef Kasmaei V, Heydari Bateni B. Discharge against Medical Advice in Emergency Department. *Iranjem*. 2015;2(3): 110-115. (Persian) Available from file:C:.Users.N%20%20o%20o%20%20R.Downloads.9038-32662-4-PB.pdf .[In Persian]
- 21) 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; 17(6): 318-21. doi: 10.1097. MEJ. 0b013e3283334ef1.
- 22) Gunasekaran P, Muthusamy A, Elder M. Factors Influencing Discharge Against Medical Advice in Patients with Chest Pain. *Journal of the American College of Cardiology*. 2013; 61(10): E1309.
- 23) Ashrafi E, Nobakht S, Keykaleh MS, Kakemam E, Hasanpoor E, Sokhanvar M. Discharge against medical advice (DAMA): Causes and predictors. *Electron Physician*. 2017; 9(6): 4563-70. doi: 10.19082.4563. eCollection 2017 Jun.
- 24) Cheng ST, Chung CH, Leung YH, Lai KK. Patient absconding behaviour in a public general hospital: retrospective study. *Hong Kong Med J*. 2002; 8(2): 87-91.
- 25) Zarei E, Marzban S, Rajaei R, Najafi M. Patient absconding from emergency department and its financial burden: a study in a large public hospital, Tehran; 2015.
- 26) Shah I, Ray S, Mehrotra S, Lalwani S, Mangla V, Yadav A, et al. Why do people leave against medical advice and what happens to them later? A study on 50 consecutive patients in India. *Current Medicine Research and Practice*. 2017; 7(5):169-73.