Original Article

Discharge Against Medical Advice in the Emergency Department

Mahnaz Mayelafshar[1], PhD; Feridoun Noohi[2], MD; Leila Riahi[1*], PhD; Aniseh Nikravan[1], PhD

ABSTRACT

Background: Discharge against medical advice (DAMA) is a process during which the patient leaves the hospital voluntarily without completing the course of treatment, which can indicate a significant problem. The present study was conducted in one of the hospitals of Tehran to identify the causes of DAMA and design its dashboard.

Methods: The present descriptive cross-sectional study examined the causes of DAMA in 2018 in a hospital in Tehran. Data were collected through a checklist prepared by the accreditation office. The collected data were inserted into QlikView software to design the dashboard.

Results: The results demonstrated that the prevalence of DAMA from the hospital under study was 0.7% in the outpatient department and 0.25% in the inpatient department compared with the total number of patients discharged in these departments. The most common reasons for DAMA were, respectively, unwillingness to undergo surgery or procedures and financial problems.

Conclusions: The findings allow hospital managers to take measures aimed at lessening DAMA and, thus, side effects, returns to the hospital, and additional costs. DAMA is a multidimensional phenomenon and is subject to several factors. Therefore, predicting the rate of DAMA and its determining factors can play an effective role in its control. ***(Iranian Heart Journal 2022; 23(1): 34-41)***

KEYWORDS: Patient discharge, Emergency service, Hospital, Patients, Patient care management

[1] Department of Health Services Administration, Sciences, and Research, Islamic Azad University, Tehran, IR Iran.
[2] Rajaie Cardiovascular Medical and Research Center, Iran University of Medical Sciences, Tehran, IR Iran.

*** Corresponding Author:** Leila Riahi, PhD; Department of Health Services Administration, Sciences, and Research, Islamic Azad University, Tehran, IR Iran.
Email: l.riahi@srbiau.ac.ir **Tel:** +989121131901

Received: June 15, 2020 **Accepted:** October 11, 2020

The existential philosophy of the healthcare system is the production of health through the provision of services to patients. Accordingly, the successful provision of services to the health system customers depends on the fact that all service providers are committed to meeting the needs of customers and are responsible for responding and providing the best services in the shortest possible time. If there is no acceptance and trust of patients in service providers, the health sector will lose

its identity. [1] Medical centers and hospitals should, therefore, employ different strategies to raise awareness among patients not willing to continue using their medical services. In this regard, investigating and determining the causes of hospital discharge with personal consent is one of the issues emphasized by researchers. [2]

The discharge rate with personal consent is one of the reasons why patients return to the hospital and the costs increase. Patients leave the hospital for various reasons, despite the advice of doctors, and identifying risk factors and causes of discharge with personal consent is one of the important steps in designing interventions. [3] Ashraf-Al-Mutawali et al (2019) showed that the rate of discharge against medical advice (DAMA) was greater among patients in the emergency department (ED) than among those in other hospital wards. In some studies, financial problems, feelings of well-being, and the search for other treatments have also been cited as reasons for DAMA. [5-7] Additionally, in other studies in Iran, the most frequent causes for DAMA include feeling better; dissatisfaction with the treatment or the medical team (physicians or nurses); economic, occupational, and family problems; delays in treatment; high patient density, tendency to refer to other medical centers; and the lack of facilities and equipment. [8-10] Pour-Agha et al [11] (2018) concluded that treatment problems were more effective than other DAMA factors. Shafaghat et al [3] found that the causes related to medical staff and economic-occupational causes associated with the patient constituted the most and the least frequent causes.

Managers and decision-makers always face the problem of choosing the best index from a variety of indicators. Managers and employees often have a negative view of performance evaluation systems. Therefore, it is necessary to determine a limited number of basic indicators that meet the management objectives of the organization. [12] In this regard, dashboards are used to identify the causes of unacceptable performance, link information throughout the organization to attract participation, and streamline decision-making. [13] The design of the dashboards includes visual and functional features. The following principles are considered for the design of the dashboard:

1. The dashboard must meet the goals set by the users and meet their expectations on a regular basis so that the users can be sure that the values they see in the charts are correct.
2. All the information should be seen at a glance, and there should be no need to move the screen up and down in such a way that the user can browse them quickly.
3. Color coding should be utilized to enable the user to interpret the data faster.
4. Dashboard information should be concise and useful, and unnecessary information, components, and content should be avoided.
5. The period for updating the information inside the dashboard must be set to maintain its dynamics.

Consequently, given the high rate of DAMA, we performed the current study to identify and determine the causes of DAMA from the ED and to design a dashboard for the ED of a cardiac center.

METHODS

The research components were determined first by conducting field, library, and research studies in books and articles. For data collection, a DAMA checklist was used in a cardiac center. This checklist consisted of 2 sections: the first one featured questions related to patients' demographic characteristics (eg, sex, age, insurance status, and place of residence), and the second part

comprised 10 questions related to the causes of DAMA from the ED (eg, discharge cases, unwillingness to continue treatment, feeling better, personal causes, long stays in the hospital, financial problems, transfer to another hospital or city, dissatisfaction with the surgery or procedure, insurance status, and the presence of a physician). Data were collected from DAMA patients in 2019 through an interview and based on the checklist questions on the reasons for DAMA. The data were entered into SPSS, version 20, for descriptive statistics and analysis. The data were extracted from the above systems in the form of Excel reports and then designed in QlikView software. At this stage, different levels of performance were identified with different colors. For instance, green was considered for proper performance, yellow for worrisome performance, and red for problematic performance. The prototype of the dashboard uses retrospective information; the time period is monthly, but daily reports can be extracted from the information. The database was designed using Excel software. The prototype of the ED management dashboard was executed using data from the hospital's information system and paper documents. Dashboards can be defined based on the type of use and the level of users' access, or the use can be on a monthly or weekly basis. Based on the results obtained, the timing management dashboard of the ED was designed and created. The design of the management dashboard of the ED in the hospital contributes to the design of innovative solutions and the improvements of the level of training and services by displaying hospital information in the form of a dashboard because using a dashboard makes decision-making of managers to plan resources using up-to-date information easier and more accurate. In other words, the dashboard is a type of debriefing tool that instantly collects data from various systems and then displays a summary of key information collected to the user.

RESULTS

The results showed that out of 63 651 patients who visited the ED of the hospital under study in the year 2019, a total of 661 patients left the hospital in the form of DAMA. Other information related to the ED is given in Table 1.

According to the information obtained, the management dashboard of the reasons for DAMA from the ED was designed. In this dashboard, in addition to the rate of DAMA, its causes, its percentage in different months of the year, different intervals, and the percentage to the total discharged were observed. As is demonstrated in Figure 1, the most common reason for DAMA from the ED was non-consent to undergo surgery or procedures (26%), and the least prevalent cause of DAMA was the absence of doctors (2.8%). The DAMA rate was at its highest in October (1.25%) and lowest in January (0.21%).

Table 1. Characteristics of the emergency department referrals

Indicators	Number	Percentage
Emergency outpatient clients	63651	-
Hospitalized in the emergency department	10833	17.01%
Referral clients through the Tehran Emergency Department	195	0.30%
Referral clients through other centers to the emergency department	717	1.12%
Average daily referrals to the emergency department	174	-
Bed occupancy	-	185.84%

Table 2. Information related to the emergency department

	March-April	April-May	May-June	June-July	July-August	August-September	September-October	October-November	November-December	December-January	January-February	February-March	Total
Length of stay in an emergency department (h)	3.31	2.89	2.53	2.92	3.15	3.11	3.17	3.58	3.45	3.90	3.23	2.64	-
Percentage of the patients deciding within 6 hours	80%	77%	90%	98%	89%	91%	91%	90%	91%	92%	91%	91%	-
Percentage of the patients discharged from the emergency department within 12 hours	85%	83%	91%	99%	95%	95%	95%	97%	95%	96%	95%	95%	-
Percentage of the patients discharged against medical advice	3.16%	3.63%	2.72%	3.88%	3.19%	2.63%	2.83%	5.28%	4.94%	4.43%	4.32%	3.69%	-
All emergency patient referrals (No.)	5123	5673	5153	5199	4922	4831	5350	5632	5497	5731	5618	4922	63651
Percentage of the patients discharged against medical advice (outpatients, No.)	27	43	46	37	28	38	56	45	22	42	40	27	451
Percentage of the patients discharged against medical advice (inpatients, No.)	12	13	12	14	13	13	10	16	16	14	17	15	165

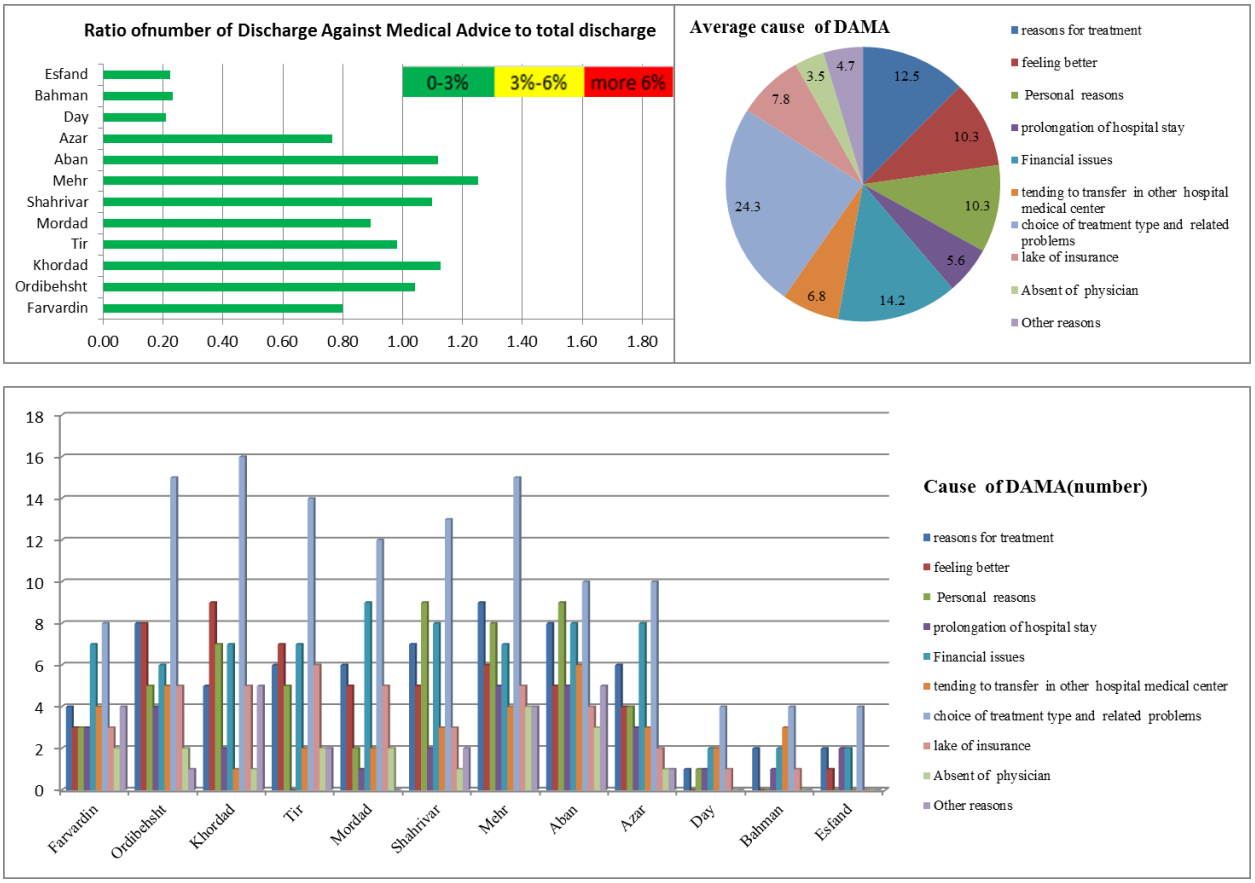

Figure 1. The images present the most common reasons for discharge against medical advice.

Farvardin, March-April; Ordibehesht, April-May; Khordad, May-June; Tir, June-July; Mordad, July-August; Shahrivar, August-September; Mehr, September-October; Aban, October-November; Azar, November-December; Day, December-January; Bahman, January-February; Esfand, February-March

DISCUSSION

According to our findings, the most common causes of DAMA from the ED were, respectively, non-consent to undergo surgical operations or procedures (26%) and the feeling of recovery (9%). Numerous studies have shown that feelings of recovery are the main and the most common reason for DAMA. [5,9,14,15] Najafpour et al [16] reported that some of the most significant reasons for DAMA were lack of decision-making for the patient, personal problems, and feelings of partial recovery. Shafaghat et al [3] found that the most frequent and important causes of DAMA were feelings of recovery, failure to register the discharge order by the doctor despite the oral order, inadequate care provided by physicians and nurses (technically), not informing patients and their partners about the conditions of the patient, congestion of the ward (large numbers of patients in the ward), and insufficient attention of employees to patients and their partners (emotionally).

It should also be noted that in most studies conducted in a similar way to the present study, similar causes have been found. [8, 10, 14] Malekzadeh et al [17] (2016) illustrated that the most common causes of DAMA from the ED were, respectively, partial recovery and lack of confidence in the quality of hospital services. It seems that

communicating with the patient, the presence of nurses in physician-patient counseling, training of physicians on the results of DAMA and on the consequences of discharge contrary to medical prescription, treatment by physicians with training on patient communication strategies prone to DAMA, and informing the patient about patient support services can help reduce DAMA. According to the findings of the present study, we recommend that nurses and paramedics use counseling courses to inform patients about the possible complications caused by DAMA. In addition, patients' companions should be included in the target group of such training, especially during the hospitalization of children and women, in which parents' and spouses' consent is required for performing medical procedures and continuing treatment.

Among the reasons for DAMA from the ED were financial and insurance problems. It, therefore, seems advisable that hospitals devise appropriate plans aimed at providing services to patients without insurance or sufficient financial resources. Numerous studies have shown that a low income, public health insurance, and lack of health insurance are significantly associated with a higher rate of DAMA. [3, 18, 19] It appears that paying attention to the financial and insurance issues of emergency patients can help improve this indicator. Due to the reasons stated for such discharges in this study, hospital managers should intervene in various dimensions to improve the quality of care and prevent or minimize the imposition of additional costs on the patient or the hospital for the return of the patient to the hospital and the aggravation of complications because of the early discharge.

A number of factors were also related to patients themselves and had less to do with hospitals. However, in cases such as patients' fatigue due to hospital stays and feelings of recovery, it may be possible to reduce such cases by properly educating patients about the disease and its treatment, as well as related treatment and diagnostic processes and the consequences of early discharge. [20] Most patients do not have the necessary information about the effects and consequences of their decisions. [21] This can be alleviated by raising patients' awareness of the possible side effects of DAMA.

A prolonged stay in the emergency room is one of the most important factors leading to DAMA in the studies by Shafaghat et al, [3] Mokhtari et al, [22] and Pour Agha et al, [11] which is in line with the current study. Increasing patients' awareness of the possible side effects of DAMA, planning to reduce the length of hospitalization, creating a pleasant and comfortable environment for patients, equipping medical centers of hospitals, promoting proper communication between the treatment team and the patient, and the presence of social workers to guide and help poor patients can significantly diminish DAMA.

The absence of a physician in the ED (2%) was one of the reasons for DAMA in the current study; hence, the active presence of a physician in the ED is highly recommended. In a previous study, the rate of DAMA fell by 40% after the first visit of patients to a medical counselor (an emergency medicine specialist or an internal medicine physician). [23] In another study, lack of medical attention by physicians was another reason for DAMA, [16] demonstrating the importance of educating physicians on proper communication with the patient. Regarding the level of access to the hospital, the proximity to the place of residence is crucial. In a study by Istabsari et al, [15] the most frequent reasons for DAMA were the perception of a relative recovery by the patient, long distance between the hospital

and the patient's place of residence, and fatigue from the hospital environment.

CONCLUSIONS

DAMA is one of the reasons for patients' return to the hospital and increased costs. Patients leave the hospital for various reasons, despite the advice of doctors, and identifying the risk factors and causes of DAMA is one of the important steps in designing interventions. The quality of healthcare is a problem if patients do not follow the advice of doctors; accordingly, promoting quality can improve patients' and employees' satisfaction and reduce such indices. In light of the results of this study, it is necessary to establish effective and supportive communication with patients as they enter the hospital and to gain their trust to reduce DAMA.

Acknowledgments
The authors acknowledge the emergency department practitioners of this hospital for sharing their expertise and approving the findings of this study.

Conflict of Interest
The authors declare that they have no competing interests.

Ethical Guidelines
The Department of Health Services Administration, Sciences, and Research of Islamic Azad University approved the study (ethics code: IR.IAU.SRB.REC.1398.025).

REFERENCES

1. Mayelafshar.M, khanmohamadian, S,; 2019. Reception service at health centers,. Memar pour, M, Heidari Publications, Tehran. pp 110 [Book in Persian].

2. Hwang SW, Li J, Gupta R, Chien V & Martin RE. What happens to patients who leave hospital against medical advice? Canadian Medical Association Journal 2003; 168(4): 417-20.

3. Shafaghat, T- Rahimi Zarchi, M , Kavosi Z, Ayoubian A, Study of the Causes of Discharge against Medical Advice in a Hospital of Shiraz University of Medical Sciences,Payavard salammat journal. 2017:11(1), 31-42 [in Persian].

4. El-Metwally, A, Suliman Alwallan, N, Amin Alnajjar, A, Zahid, N , Alahmary, K, Toivola, P. Discharge against Medical Advice (DAMA) from an Emergency Department of a Tertiary Care Hospital in Saudi Arabia, Hindawi Emergency Medicine International, 2019:1-6.

5. Adefemi SA, Adeleke IT, Gara P, Abdul Ghaney OO, Omokanye SA & Jimoh Yusuf AM. The rate, reasons and predictors of hospital discharge against medical advice among inpatients of a tertiary health facility in North-central Nigeria. American Journal of Health Research 2014; 3(1): 11-6.

6. Jimoh BM, Anthonia OC, Chinwe I, Oluwafemi A, Ganiyu A, Haroun A, et al. Prospective evaluation of cases of discharge against medical advice in Abuja, Nigeria. The Scientific World Journal 2015; 2(1): 1-4.

7. Somasetia DH, Isman S & Wonoputri N. Discharge against medical advice in pediatric intensive care unit and subsequent events. International Journal of Integrated Health Sciences 2015; 3(1): 7-10.

8. Rahimi A & Khabbaz Zadah F. Reasons for discharge against medical advice: A study of a general hospital in Iran. Iranian Journal of Pediatrics 2014; 24(2): 79-84.

9. Kazemi M, Vazirinejad R, Soleimani MR, Ostadebrahimi H & Ayubipour N. Assessment of the incidence and reasons of discharge against medical advice in the hospitals of Rafsanjan University of Medical sciences in 2012-2013. Community Health Journal 2014; 8(3): 64-72[in Persian].

10. Mohseni M, Alikhani M, Tourani S, Azami Aghdash S, Royani S & Moradi-Joo M. Rate and causes of discharge against medical advice in Iranian hospitals: A systematic

review and meta-analysis. Iranian Journal of Public Health 2015; 44(7): 902-12.

11. Pouragha B, Rajaee 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.

12. Mayelafshar, M, Noohi, F, Riahi, L, Nikravan. A, S. Key performance indicators of emergency department: A literature review; Cardiovascular Nursing Journal 8 (1) 2020: 10-19[in Persian].

13. Eckerson W. Performance Dashboards: Measuring, Monitoring, and Managing Your Business, Second ed. Hoboken: John Wiley & Sons; 2011. pp. 29, 1-318.

14. Pour Karimi SHA, Mohseni Saravi B, Bagherian Farahabbadi E, Zamanfar D, Fallah M & Asadi Abokheily M. Studying the rate and causes of discharge against medical advice in hospitals affiliated to Mazandaran university of medical sciences. Journal of the Academy of Medical Science of Bosnia and Herzegovina 2014; 26(3): 203-7.

15. Estebsari F, Dastoorpoor M, Mosavi Esfahani H, Mostafaie D, The Causes of Discharge against Medical Advice from the Emergency Department of a Teaching Hospital of Tehran in 2016,3(5).267-276[In Persian].

16. Najafpour Zh, Jafari MR, Hatamizadeh M, Rahimi S, Bigdeli Z, Homauni A. An Analysis of the Factors Affecting Discharge Against Medical Advices: A Case- Control Study in a Treatment- Teaching Hospital. Manage Strat Health Syst 2017; 2(1):47-39.

17. Malekzadeh R, Araghian Mojarad F, Amirkhanlou A, Sarafraz S & Salmanpour M. Causes of discharge against medical advice in hospitals affiliated with Mazandaran university of medical sciences, 2014. Journal of Mazandaran University of Medical Sciences 2016; 26(140): 95-102[in Persian].

18. Manouchehri J, Goodarzynejad H, Khoshgoftar Z, Sheikh Fathollahi M & Aghamohammadi Abyaneh M. Discharge against medical advice among inpatients with heart disease in Iran. Journal of Tehran University Heart Center 2012; 7(2): 72-7. [In Persian]

19. Roodpeyma SH & Eshagh Hoseyni SA. Discharge of children from hospital against medical advice. World Journal of Pediatrics 2010; 6(4): 353-6.

20. Kariman H, Khazaei AR, Shahrami A & Hatamabadi HR. Dealing with discharge against medical advice in emergency department. Journal of Basic and Applied Scientific Research 2013; 3(7): 785-91.

21. Noohi K, Komsari S, Nakhaee N & Yazdi Feyzabadi V. Reasons for discharge against medical advice: A case study of emergency departments in Iran. International Journal of Health Policy and Management 2013; 1(2): 137-42.

22. 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.

23. 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.