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Reasons for Discharge against Medical Advice: A Case Study of Emergency Departments in Iran

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ABSTRACT

Background: Incomplete hospitalization is the cause of disease relapse, readmission, and increase in medical costs. Discharge Against Medical Advice (DAMA) in emergency department (ED) is critical for hospitals. This paper aims to explore the underlying reasons behind DAMA in ED of four teaching hospitals in Kerman, Iran.

Methods: This was a cross-sectional study in which the samples were drawn from the patients who chose to leave against medical advice from the ED of teaching hospitals in Kerman from February to March 2011. The sampling was based on census. Data were gathered by a self-constructed questionnaire. The reasons for DAMA were divided into three parts: reasons related to patient, medical staff, and hospital environment. The questionnaire was filled out by a face-to-face interview with patient or a reliable companion.

Results: There were 121 cases (5.6%) of DAMA out of the total admissions. The main reason of AMA discharges was related to patient factors in 43.9% of cases, while two other factors (i.e., hospital environment and medical staff) constituted 41.2% and 35.2% of cases, respectively. The majority of patients 65.9% (80 cases) were either uninformed or less informed of the entailing side effects and outcomes of their decision to DAMA.

Conclusion: In comparison to studies conducted in other countries, the rate of DAMA is markedly higher in Iran. The results revealed that patients awareness of the consequences of their decisions is evidently inadequate. The study suggests a number of recommendations. These include, increasing patient awareness of the potential side effects of DAMA and creating the necessary culture for this, improving hospital facilities, and a more careful supervision of medical staff performance.

Background

Emergency departments (EDs) of hospitals play a salient role in preserving people's life. Management and evaluation of EDs performances can only be attained by having reliable information about the current situation. Compared to other departments in a hospital, ED receives the most number of patients as well as the most serious ones; hence, the quality of medical service in ED can represent the general quality of the medical services provided by a hospital (1). It is believed that patient's satisfaction of medical services is a proper indicator for quality of services provided by hospitals. In order to enhance the quality of medical services in EDs, there should be a proper understanding of the current situation of EDs along with an appropriate analysis of the problems (2).

The process of discharge is a critical phase in hospital management, and correction of it is a major strategy around

which all hospital functions are defined and implemented. Thus, Discharge Against Medical Advice (DAMA) is a critical problem in hospitalization of patient in which a patient despite medical advice leaves the hospital earlier than due time (3). The outcomes of DAMA for the patient can be deterioration of his/her situation, even up to the point of death or the entailing side effects which cannot be cured in longtime and render the therapeutic result unsatisfactory (4). Moreover, readmission of the patient because of his/her severe condition imposes extra costs on the health care system which is an issue worth observing and discussing. So failure to complete the hospitalization can lead to re-lapse of disease, re-admission, and increase in medical costs for the patient (5,6).

DAMA or self-discharge has been reported in most of healthcare management documents (7–10). There are many reasons for DAMA, namely dissatisfaction with hospital services,

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patient or his/her parent's addiction or misuse of medications, patient's unaffordability to pay hospital expenses, psychiatric problems, family problems (e.g. having a child in home), lack of significant improvement in medical conditions, believe in traditional medicine, long stay in hospital, and patient's place of residence (urban or rural) (11–14). Other studies have also shown that personal and family problems, feeling better to leave the hospital, dissatisfaction with treatment, dullness, boringness and tediousness of medical environment are among other causes of DAMA (6).

If medical staff are able to early detect patients with high risk of DAMA, they will then provide necessary advices to continue treatment (6). The key point in a discharge plan is the exchange of information between patient and physician or the medical staff (15), which can be attained through teaching. Providing necessary information about illness (16), its side effects and treatment is the undeniable right of patients. As such, in many countries this fact has been turned into a law (17).

The main aim of education is to inform a patient of his/her illness conditions, medical interventions and the optional choices which he/she has in the course of treatment (18).

Clinical governance is a key strategy followed by the Iranian Ministry of Health and Medical Education (MOHME) and patients' education and assessment of the reasons for DAMA constitute the main components of the clinical governance system in a hospital. From this point, conducting this research sounds pivotal (19). Moreover, based on the National Emergency Department Indicators, the rate of DAMA is considered as one of the five critical indicators for performance assessment in EDs. This, per se, calls for research in this area (20).

Although some studies have been conducted on this matter in Iran, most of them were done at different wards of hospitals and one of them was specifically carried out in ED of a single-specialty tertiary hospital (21). Hence, the present study aimed to three objectives including a) the rate of DAMA in EDs of teaching hospitals in Kerman province, b) its underlying reasons, and c) level and source of patient's awareness of its side effects.

Methods

The present research was a cross-sectional study conducted at four hospitals (three general and one single-specialty hospital) in Kerman, a province located in southeast of Iran. All samples (enrolled DAMA patients) were selected from EDs of these hospitals from February 20th to March 20th in 2011.

All DAMA patients were enrolled into the study through 24 hours a day by census sampling. A self-constructed questionnaire with a Likert scale ranging from 1 to 5 (i.e. 1 representing no impact, 2 very low impact, 3 low impact, 4 high impact, and 5 very high impact) was used to gather data. The questionnaire contained demographic characteristics (sex, job, literacy, insurance status of the patient) and 15 questions about reasons of the DAMA, divided into 3 sections of patient's related factors, medical environment factors, and medical staff related factors (4). There were also two other questions regarding awareness about the DAMA side effects and the probable sources of patients' awareness. The face and content validity of the questionnaire was confirmed according to an expert panel. The Cronbach's alpha for analysis of questions reliability was about 0.82. Every patient could indicate more than one reason for DAMA. For the sake of simplicity, we recoded the 1, 2 and

3 scales (no, very low and low impact) to low impact and also 4 and 5 (high and very high impact) to high impact. We employed the discharge staff for data gathering in the morning, evening and at night shifts. Apart from explaining the aims of the study to the discharge unit staff, the required information for filling out the questionnaires were also given to them. Questionnaires were filled out by face-to-face interviews with DAMA patients and in case of his/ her inability to answer the questions, patient's companions were interviewed. Completed questionnaires were then analysed by SPSS 18 (SPSS Inc., Chicago, IL, USA) and with descriptive statistics (mean and frequency) and Chi-square test.

Results

Of 2161 patients who were admitted to the EDs of teaching hospitals, 5.6% (121 cases) were DAMA. Of 2161 cases, Shahid Beheshti hospital (320 active beds) which is a single specialty psychiatry hospital had the most rate of DAMA (16.3%, 27 cases) with respect to its total admission. The DAMA rate of Afzalipour general hospital (364 active beds) and Bahonar (302 active beds) stood after Shahid Beheshti at 4% (30 cases) and 4.8% (52 cases) respectively. Shafa general hospital (368 active beds) had the lowest percent of DAMA (3.2%, 12 cases). Most of DAMA patients were men (61%, 73 cases) and the rest were female (39%, 48 cases). Other demographics were summarised in Table 1.

As shown in Table 2, the main reason of DAMA which is indicated by high impact is due to patient's factors (43.9%, 219 items). Medical staff's factors (41.2%, 200 items) and medical environment factors (37.0%, 186 items) were the next reasons of DAMA, respectively. Moreover, as it is illustrated in Table 2, the major reason of DAMA with a small impact was due to the medical environment factors (63.0%, 317 items) and the lowest number of DAMA with a small impact belonged to patient's factors. A point worth mentioning here is that patients could choose more than one reason for their DAMA.

Findings showed the "feeling better" choice had the highest frequency (57.0%, 61 cases) in patient's factors. In terms of medical staff factors, the choice of "physician and nurse's inadequate medical services" was the most cited factor of DAMA (48.0%, 49 cases). Finally, "hospital cleanness" which belongs to hospital environment factors was found as the main reason of DAMA (49%, 48 cases).

As shown in Table 3, physicians and nurses were the primary sources of information for the patients. Also, it was found that patients lacked enough information about the consequences of DAMA, to the extent that 65.9% (80 cases) of patients had no or very little awareness about the side effects of DAMA.

Chi-square test showed that reasons for DAMA had no difference between two genders, different educational levels (literacy status), job, and insurance status ($P>0.05$).

Discussion

Demographic information & rate of DAMA

The present study aimed to determine the rate, reasons of DAMA, and source and level of the patient's awareness about DAMA side effects in EDs of four teaching public hospitals in Kerman. As the findings showed the overall rate of DAMA of these hospitals approximately accords with the national studies done by Tavalaeie *et al.* (22), Roodpeyma and Eshagh Hoseyni (23), and Rangraz Jeddi *et al.* (4). However, in comparison to foreign studies it seems that the rate of DAMA is higher in Iran

(24-28). Two foreign studies report the prevalence of DAMA was about 0.07% to 0.7% (29,30). Also, a study in a teaching hospital in Iran revealed that DAMA rate was about 20.0% (31). In a similar study in an ED of a hospital in the USA, the rate of DAMA is reported about 0.1 to 2.7% (32).

As the rate of DAMA is influenced by various factors and variables and knowing that, in different parts of the world different rates have been reported, it makes it hard to compare the resulted rates hard to gauge. Therefore, early recognition of the patients who have a tendency towards DAMA can help to decrease the process of DAMA (13,14).

Findings showed that the majority of the DAMA cases are male, the result which was also shown in a similar study where men were more in danger of DAMA (33). This finding can account for the social responsibility that men feel in caring for their family, their risk-taking attitude in making decisions and their difference with respect to women who are more compliant with the medical staff's prescriptions. A study which was conducted in Iran indicates that men are more DAMA because of personal and family reasons while the reason for women DAMA is more for their dissatisfaction with the surgeries of the hospital (21).

Patient factors

With regard to socioeconomic factors, foreign studies showed that low socioeconomic condition in some cases and high socioeconomic condition in others is considered as an influencing factor for DAMA (22,34–35). Also in Ikefuan's study it was demonstrated that financial problem and lack of financial support is the most prevalent reason for DAMA (36). In line with such studies, our study showed that patient's economic status is considered as one of the patient factor related to DAMA. Conditions of patients' economic status and his/her tendency to be present at his work place can account for their decision.

In contrast to Weingart *et al.* study in which lack of insurance has been stated as the main reason for DAMA, our study did not report this issue (29). The lowness of treatment costs in public sector as well as support mechanisms and institutions such as Relief Committee Fund, welfare organization can account for this inconsistency.

Findings also showed that among the patient's factors, the choice of "feeling better" had the highest impact which accords with the findings of Rangraz Jeddi (4) and Roodpeyma (23) and the foreign study of Holden (37). Moreover, the frequency of "feeling better" is also similar to the frequency of this factor found in the study of Kabirzadeh (5) in Iran and the study of Hwang in Canada (6). To eliminate the false or temporary "feeling better" of patients, we should inform them before he/she decides to leave the hospital against medical advice (AMA).

Medical staff factors

It was also indicated that among the medical staff factors, "physician and nurse's lack of medical service" had highest impact, the matter which accorded with the studies of Rangraz Jeddi (4) and Hwang (6) and is similar to the study of Doescher (38). Roodpeyma's study found patient's dissatisfaction with medical care and treatment as the primary reason (23). In contrast to our results, Haywood's study (39) found two factors of patient's lack of trust to medical staff and having bad experience of hospitalization as reasons for leaving hospital AMA. In a study

conducted by Shirani, patient's dissatisfaction with medical staff medical services and the diagnosis methods as the most prevalent reasons for DAMA (31). One reason of dissatisfaction with hospitals may be due to the teaching nature of them, giving the patient the sense of not being adequately attended, owing to more focus of attending physician on medical students rather than patients. Such a reason has been stated by Onukwugha *et al.* in an US study (40). These problems can be solved by increasing

Table 1. Summary of baseline variables

Variable	Frequency (%)
Discharge shift	
Morning	60 (49.6)
Evening	19 (15.9)
Night	42 (34.5)
Literacy status	
Literate	69 (57.0)
Illiterate	22 (18.2)
No response	30 (24.8)
Job status	
Employment	39 (32.2)
Unemployment	60 (49.6)
No response	22 (18.2)
Insurance status	
Insured	94 (77.7)
Uninsured	16 (13.2)
No response	11 (9.1)

patient's awareness and strengthening the physician's relation with patient and patient's family. Nevertheless, two issues escalate the DAMA problem including the insufficient medical staff in EDs, and non-resident physicians, in a geographical place where the hospital is located, who cannot work as a full time physician in the hospital. Therefore, establishment of emergency medicine physicians in EDs and recruitment of sufficient staff may overcome the problem.

Hospital environment factors

Moreover, our study showed that among the reasons related to hospital environment factors, "cleanness of hospital" had the highest impact which is similar to Roodpeyma's study (23) with respect to patient's dissatisfaction for hospitalization. The high influence which cleanness of hospital had in the eye of the patients discharged AMA can be due to the high emphasis which their culture place on cleanness in hospitals and their awareness of the danger of infections. This problem can be obviated by the more effective supervision of hospital directors on cleanness of hospital environment, proper disposing of hospital wastes, and the performance of contractors, and by reinforcing the infection control committee.

Although it is expected for the medical staff to provide patients with adequate information about their illness and its possible side effects, its treatment and health care (35), our study showed that most patients do not have necessary information about the side effects and outcomes of their decision. In this regard, our finding is similar to Mohammad Pour's study (41) on the patients discharged with their physicians order, and Onukwugha's study (40) in which the medical staff's relation with a patient is considered as the main factor to decrease patients discharged AMA. But our finding is inconsistent with the of Kalantari's study (42). Patient's inadequate information

Table 2. Frequency of three factors of DAMA according to its impact based on patients' perspectives

Factors	Reasons	Impact based on patients' opinion items*	
		Low (%)	High (%)
Patient	Patient's economic status	64 (61.0)	41 (39.0)
	Personal problems	44 (46.8)	50 (53.2)
	Patient's fear of treatment	65 (65.7)	34 (34.3)
	Feeling better	46 (43.0)	61 (57.0)
	Patient's companion advice	61 (64.9)	33 (35.1)
Total		280 (56.1)	219 (43.9)
Medical staff	Physician and nurse's inadequate medical services	53 (52.0)	49 (48.0)
	Behavior of ED staff	61 (62.9)	36 (37.1)
	Not giving required information to patient	58 (62.4)	35 (37.6)
	Delay in diagnostic and therapeutic procedures	56 (58.3)	40 (41.7)
	Lack of physician's capability in his/her work	58 (59.2)	40 (40.8)
Total		286 (58.8)	200 (41.2)
Hospital environment	Because the hospital is a teaching hospital	61 (66.3)	31 (33.7)
	Hospital cleanness	50 (51.0)	48 (49.0)
	Hoteling facilities	61 (64.2)	34 (35.8)
	Food quality	89 (71.8)	35 (28.2)
	Physical factors (Light, noise, etc)	56 (59.6)	38 (40.4)
Total		317 (63.0)	186 (37.0)
* Numbers of selected items by patients			

Table 3. Frequency distribution of source of information for patients and patients' level of awareness about the side effects of DAMA

Source of information	Frequency (%)
Physician	22 (18.6)
Nurse	35 (28.8)
Both physician and nurse	64 (52.6)
Patients' level of awareness about the side effects of DAMA	Frequency (%)
Fully informed	41 (34.1)
Less informed	56 (46.3)
Uninformed	24 (19.6)

about the side effects of their decision can be for the heavy workload of ED, lack of medical staff attention to the problem, and insufficient manpower.

Limitations and strengths

The present study had some limitations. Firstly, the EDs are considered as stressful and extremely busy wards that might have influenced patients and their companions response. Secondly, this study included both single specialty and general teaching hospitals, so the referral patterns can differ from a hospital to other hospital.

The present study also had two major advantages. Firstly, the rate and reasons of DAMA in EDs of teaching hospitals and as limited studies were conducted on this issue in Iran, some invaluable information have been revealed for policy makers and managers at local levels. Secondly, it methodologically was based on face to face interviews with patients and their companions as a prospective approach to data gathering rather than secondary studies based on medical records that might promote the achieved results.

Conclusion

Patient decision to discharge AMA results in the ensuing side

effects for the patients and brings about the increase in medical costs, readmission, and the problems which are created for patient and his/her family. As such, medical staff are to increase patient's awareness of the possible side effects of his/her decision. To obviate the problem of DAMA or to decrease the possibility of its occurrence, it is vital to create a culture among people to comply with the prescribed therapeutic procedure, to improve the welfare facilities of hospitals, to supervise medical staff performance, to increase family awareness, and to strengthen the relation between patient and medical staff.

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Ethical issues

The Ethics Committee of Kerman University of Medical Sciences approved the study.

Competing interests

The authors declare no competing interests.

Authors' contributions

KN initiated the idea and facilitated the process of data gathering across the four hospitals. SK and VYF contributed to the literature review, the development of the protocol and managing the data gathering. VYF contributed to study administration, data analysis, interpretation of results and writing the first draft of the manuscript with NN and SK. All authors reviewed the final manuscript. VYF and NN are the study guarantors.

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