

Discharge against Medical Advice: An Interventional Study

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Abstract

Background and Objectives: Discharge against medical advice (DAMA) is a significant healthcare problem posing negative impact on the effectiveness of patient care, and costs of the health system. In order to address this problem, first the potential influencing factor should be identified. This study followed two major objectives: to evaluate the prevalence and potential causes of DAMA, and to evaluate the impact of informed interventions on controlling its prevalence.

Methods: The study enrolled all DAMA patients hospitalized in Sina Hospital of Tabriz (Iran) during 2013. A questionnaire asking the reasons for early discharge in terms of staff factors, treatment factors, patient factors, and environmental factors was developed in the Clinical Governance Office, and the DAMA patients were asked to complete the questionnaire before leaving the hospital. Based on the analysis of the responses, a number of interventional measures were devised with the consultation of the head nurses of different departments. The interventions were executed in a 9-month period, and the DAMA rate before and after the interventions was compared.

Findings: Family involvement was found to be the major factor contributing to DAMA followed by job involvement, hospital type, and length of hospitalization. After introducing the interventions, a 36% reduction in the rate of DAMA was achieved.

Conclusions: Our study demonstrates that systematic identification of factors contributing to DAMA, followed by interventions based on the resulting insights, can lead to a remarkable reduction in DAMA.

Keywords: Discharge against medical advice (DAMA), Hospital Management, Patient care

Background and Objectives

Discharge against medical advice (DAMA) accounts for a considerable portion of patients' discharge from the hospitals. While the rate of DAMA in the US has been reported to be 1.44% [1], the study of Rangraz in Iran has identified a rate of 10.3% [2]. Similarly, whereas Monaco [3] and Schwartz [4] reported a DAMA rate of 0.1% to 2.7% in the Emergency Department, the study of DAMA prevalence in the Emergency Department Taleghani Hospital (Iran) identified a corresponding rate of 20% [3, 4]. These studies indicate a higher rate of DAMA in Iranian hospitals compared with the hospitals in other countries, especially the developed countries. DAMA has potentially negative implications for the performance of the health

care system, including the increased rate of re-admission, increased length of hospitalization, higher health care costs, and more seriously, an increased rate of mortality [3, 5-8]. Hence, DAMA is considered as an indicator for quality of health care services [9, 10], deserving especial attention, particularly in the countries where high rate of prevalence is observed. This study was aimed at further exploring the prevalence of DAMA in an Iranian context, and testing the impact of informed intervention in reducing the extent of the problem.

Methods

This descriptive-interventional study was designed using clinical audit procedure to reduce the rate of DAMA in Sina Hospital. In the descriptive part, which was aimed at identifying the prevalence and causing factors of DAMA, the study sample included all patients discharged against medical advice from Sina Hospital during the first three

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months of 2013. The research instrument for this section was a questionnaire, asking the reasons for early discharge in terms of staff factors, treatment factors, patient factors, and environmental factors, which was developed based on the previous studies and by taking into account the comments from of the hospital's Clinical Governance Office and nursing staff. The DAMA patients were asked to complete the questionnaire before leaving the hospital.

The second part of the study was aimed at designing and implementation interventions based on the insights from the first part. For this purpose, a series of meetings were held with the head nurses of different departments, and possible executive interventions were discussed. As a result, an intervention program for reducing the rate of DAMA was designed and implemented for 9 months from July 2013. By the end of the intervention, the rate of DAMA was obtained and compared with that during the pre-intervention period. The data were summarized using descriptive statistical methods. All statistical analyses were carried out using the SPSS Version 17 Software.

Ethics

An approval for conducting the study was obtained from the hospital's Clinical Governance Office. All DAMA patients were briefed about the objectives of the study, and their verbal consent to participate in the study was obtained.

Results

This study was designed using clinical audit procedure to reduce the rate of DAMA in Sina Hospital. From 16000 total admissions in 2013, the total number of DAMA patients was 706 accounting for 4.4% of all discharged patients. Table 1 presents major factors contributing to DAMA. As seen, among these factors, 'family concerns' has gained the first rank followed by staff factors, and treatment factors. Table 2 described the strategies implemented for reducing the rate of DAMA. As a result of this intervention 36% reduction in DAMA rate was achieved in the surveyed hospital.

Discussion

Our study identified family involvement and job involvement as the most important factors contributing to DAMA, both being *ex-hospital* factors. The same factors were mentioned to affect DAMA rate in the study of Nasir (2008) in Nigeria who concluded that due to poor social protection in this country, males and younger-age patients are discharged against medical advice due to

crowded family, as well as job involvement [14]. To alleviate DAMA rate among these patients a strong social security system is needed to comfort the patients during their stay in the hospital [14].

We also identified the 'personal factors' to be responsible for a large part of DAMA. The significance of personal issues has also been reflected in several previous studies [15-18]. Roso' Dun˜o *et al.* (2003) concluded that patients' personal problem are the main factor responsible for DAMA, rather than health care-related issues [15]. In a study in Philadelphia Veterans Administration Medical Center, more than 67% of the DAMA patients had personal reasons such as family problems, emergencies, financial/personal obligations, reconciliation with spouse or other family members, and legal issues [17]. Similarly, the study of Rangraz *et al.* in Kashan, Iran [2] showed that patient-related issues such as travel, family ties, fear from continuing the treatment, and job involvement were the most frequent DAMA-inducing factors. The high dependence of DAMA on the personal factors, which are typically out of the direct control of the hospitals, indicates the challenging nature of eliminating this phenomenon. Nevertheless, efforts should be concentrated on those DAMA factors that are controllable by the healthcare settings to achieve a maximal reduction.

Previous studies have highlighted the role of financial issues in DAMA [19-26]. This factor, however, was not perceived to be very important in our survey, because of availability of insurance for almost all patients.

Literature suggests several strategies to reduce the rate of DAMA. Appropriate communication with patients as well as informing patients about the nature and severity of their disease and the procedure of treatment could be mentioned among these strategies [2, 5, 9, 27, 28]. Effective implementation of such interventions, however, requires training of healthcare staff and addressing other aspects of patient satisfaction. Our interventional strategies in this study which was largely based on training the healthcare staff successfully reduced the rate of DAMA, and hence could be adopted and further developed for addressing the same challenge in other health facilities.

Conclusions

The main purpose of this study was to identify factors contributing to DAMA and examine the effect of informed interventional strategies in alleviating this problem. In line with several previous studies, we found family and personal concerns to have the highest impact on patients' decision for DAMA. The fact

Table 1 Frequency of factors contributing to DAMA, as perceived by the DAMA patients

Factors contributing to DAMA	Frequency			
	Before intervention		After intervention	
	N	%	N	%
Personal reasons	24	8.4	70	14.5
Factors related to the staff	44	16.6	104	21.7
Factors associated with treatment	22	8.2	44	9
Family concerns/obligations	136	51.1	138	29.6

that these factors is out of the control of the health settings, suggests that other factors related to patient satisfaction with the quality of healthcare should be highly emphasized to achieve a reduced rate of DAMA. Implementation of an informed strategy which was based on survey of DAMA factors and training of healthcare staff resulted in dramatic reduction of DAMA over a 9-month period. Given the negative impact of DAMA on the performance of the health system, policy-makers can require the health facilities to implement such interventions.

Abbreviation

(DAMA): discharge against medical advice

Competing Interests

The authors declare no competing interests.

Authors' Contributions

AR conceived, designed and coordinated the study and contributed to revision of the manuscript.

JT made the major contribution to collecting, analyzing, and interpreting the data, developing the interventional strategies, and drafting and revising the manuscript. Both authors read and approved the final manuscript.

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Table 2 Interventional strategies implemented to alleviate DAMA rate

Interventions
Decrease length of hospitalization
Follow-up of the treatment procedure under supervision of physicians and nurses after discharge
Informing patients and their companions about the nature of the disease, the treatment procedure, and the treatment side effects
Spatial development of the surgery wards
Provision of more facilities at the waiting and bed rooms
Painting the hospital entrance hall
Training healthcare staff on good communication with the patients

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