

Reasons for Discharge against Medical Advice among Patients Admitted to Ghaem Research-Training and Medical Center of Mashhad, Iran, in 2015

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ARTICLE INFO	ABSTRACT
<p>Article type: Original Article</p> <hr/> <p>Article history: Received: 05-Dec-2017 Accepted: 26-Dec-2017</p> <hr/> <p>Keywords: Discharge against medical advice Hospital services Quality improvement</p>	<p>Introduction: Discharge against medical advice (DAMA) indicates the existence of serious problems in the quality of hospital services, which can exacerbate the disease and increase the risk of hospital readmission. This study was targeted toward examining the reasons for DAMA among the patients admitted to Ghaem Hospital of Mashhad, Iran, in 2015.</p> <p>Materials and Methods: This cross-sectional, descriptive study was conducted on 6,645 patients discharged from the Ghaem Hospital of Mashhad with their own personal desire in the first 9 months of 2015. Data collection was performed using the information recorded in the health information system of the hospital; in addition, the required information which was not available in this system were obtained via making a telephone call with the respondents. The data were analyzed using descriptive statistics in SPSS, version 22.</p> <p>Results: Out of the 53,558 patients admitted to Ghaem Hospital of Mashhad in the first nine months of 2015, 6,645 (12.4%) cases were discharged with their own desire. Regarding the reasons of DAMA, 13.1% and 86.7% of the patients had called for DAMA due to the reasons related to hospital and personal issues, respectively. Accordingly, the main reasons for DAMA were categorized into patient- and hospital-related reasons, including patient's personal and family reasons (41.8%) and overcrowding of wards (6.6%), respectively.</p> <p>Conclusion: Improved communication between physician and patient, patient's increased awareness regarding the probable complications of early discharge, improved quality of hospital services, use of clinical aids, and designing green space and a pleasant environment are the recommended strategies to reduce the rate of DAMA.</p>

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Introduction

One of the major problems in providing health services is the discharge against medical advice (DAMA) (1, 2). The DAMA means patient's withdrawal from treatment despite his/her physician's advice (3). Discharge with personal desire depends on the patient and hospital conditions (4). Many studies suggest that patients tend to be discharged from the hospital due to the incomprehension of and insensitivity to the patients' expectations. This would lead to the recession of medical centers and cause irreparable damages to hospitals. According to the evidence, the non-completion of treatment period by patients has imposed a cost of about \$ 30 million to the health care system of Australia (5).

In addition, DAMA indicates the existence of serious problems in the quality of hospital services (6, 7) which can exacerbate the disease and increase the risk of readmission to the hospital (8, 9). Based on the literature, the mortality rate of the patients who have attempted to leave the hospital with their own desire has been 15.7% in a one-year period, and DAMA usually leads to readmissions within 15 days after leaving the hospital. In other words, 21% of the patients discharged from the hospital as they wish are readmitted within 15 days (10). This increases medical costs by about 56%. For instance, in Australia, additional cost resulting from patient readmission was estimated as \$ 8.6 million (5).

As the statistics indicate, DAMA accounts for 1% and 0.8-2.2% of total discharges in Canada and the US, respectively (10, 11). On the other hand, in a country like Australia, the rate of DAMA has been on an upward trend; accordingly, it has increased from 2.4% in 1999 to 2.6% in 2004 (5). According to a study conducted in Baghiyatallah Hospital of Tehran, Iran, in 2006, the rate of DAMA in the Psychiatric Ward of this hospital was reported to be about 3% (12). In another study conducted in Tehran Heart Center in 2010, the rate of DAMA was reported as 4.9% (13).

The DAMA can occur for several reasons, such as financial problems, personal problems, and legal issues. In addition, factors, such as demographic and clinical variables, could greatly affect the rate of this practice (14). Ghaem Hospital of Mashhad is a general and first-level hospital with 815 active beds, 18 wards, and 7 emergency units providing clinical and paraclinical services. This hospital is considered as one of the major medical training centers in Iran. In addition to providing health services to patients, Ghaem Hospital is a medical research center for educating students in specialty and subspecialty levels.

The DAMA causes concerns regarding the need for readmission and its impact on the use of hospital resources, ethical considerations, patient-physician relationship, and mental conditions of the patient in the health system of Iran (15). In other words, since the incompleteness of hospitalization period is a risk factor for disease relapse, readmission, and imposition of further costs on patients (3), it seems necessary to identify the variables associated with DAMA.

The determination of the variables associated with DAMA is expected to have a significant impact on the identification of patients who are likely to call for DAMA and implementation of effective interventions and strategies for reducing the rate of this practice (16).

With this background in mind, the present study aimed to identify the reasons for DAMA among patients in Ghaem Research-Training and Medical Center of Mashhad in 2015.

Materials and Methods

This cross-sectional, descriptive study was conducted on 6,645 patients having been discharged from Ghaem Hospital of Mashhad with their own personal desire in the first 9 months of 2015. The study population was selected using total enumeration method. The required data and information were collected from the health information system of Ghaem Hospital using an author-made checklist consisting of two parts, namely underlying variables and discharge reasons, covering the issues related to the patients and hospital.

The validity and reliability of this checklist were assessed using content validity and split method ($r=0.87$). The required information which was not available in this system were obtained via making a telephone call with the respondents. In case of no answer in the first telephone call, it was repeated three

times. The patient was excluded from the statistical sample in case of failure to be contacted with or refusal to cooperate. The data were statistically analyzed in SPSS (version 22) using descriptive statistics (e.g., percentage, frequency, mean, and standard deviation).

Results

Out of the 53,558 patients admitted to Ghaem Hospital of Mashhad in the first nine months of 2015, 6,645 (12.4%) cases were discharged with their own desire, 50.9% of whom were male. In terms of age, 7.6%, 7.5%, 4%, 12.5%, 10.5%, 8.5%, 12.5%, and 36.9% of the patients were within the age groups of below 2, 2-5, 5-20, 20-29, 30-39, 40-49, 50-60, and above 60, respectively.

The highest and lowest frequencies of insurance coverage were related to Social Security Organization (44.2%) and Imam Khomeini Relief Foundation (1.5%), respectively. In terms of the type of admission, 4,283 patients (64.5%) were under supervision and 2,361 patients (35.5%) were hospitalized.

Furthermore, regarding the occupation, 44.6% and 4.4% of the respondents were self-employed and unemployed, respectively. In addition, 28.6% and 22.4% of the patients were clerks and laborers, respectively.

On the other hand, 7% of the patients discharged with personal desire had a history of hospital readmission. Regarding the reasons of DAMA, 13.1% and 86.7% of the patients had called for DAMA for hospital- and personal-related reasons, respectively (tables 1 and 2). Table 3 presents the frequency distribution of reasons for DAMA in each hospital ward.

Table 1: Frequency of patient-related reasons for discharge against medical advice

Discharge due to reasons related to the patient			
Reasons	Number	Patient-related reasons	DAMA reasons
Financial issues	163	2.8	2.4
Patient's personal and family reasons (e.g., age, mental confusion, irritability, and fatigue)	2778	48.2	41.8
Belief in healing and patient's willingness to continue treatment at home	2488	43	37.4
Incurability of the disease	29	0.5	0.4
Patient's willingness to be transferred to a private center	229	3.9	3.4
Long distance between the patient's place of residence and hospital	93	1.6	1.3
Total	5780	100	86.7

DAMA: discharge against medical advice

Table 2: Frequency of hospital-related reasons for discharge against medical advice

Discharge due to reasons related to the hospital			
Reasons	Number	Hospital-related reasons %	DAMA reasons %
Lack of medical care	42	4.8	0.6
Inappropriate treatment of the medical team	5	0.5	0.07
Untimely presence of the physician	5	0.5	0.07
Medical suggestions	2	0.23	0.03
Training structure of the hospital	109	12.6	1.64
Lack of welfare facilities	190	21.9	2.9
Shortage of diagnostic and medical equipment	70	8.1	1.05
Overcrowding of wards	441	51	6.6
Total	865	100	13.01

DAMA: discharge against medical advice

Table 3: Frequency distribution of discharge against medical advice reasons in each hospital ward

Wards Discharge reasons	Hospital wards														Total
	Pediatric emergency	Internal emergency	Neurology emergency	Screening	Cardiology emergency	Surgery emergency	Obstetric emergency	ENT emergency	ENT ward	Gynecology and pediatrics ward	Surgery ward	ICU	Cardiology ward	Internal ward	
Lack of medical care	1 (0.12%)	3 (0.16)	20 (1.14%)	2 (4.5%)	1 (0.14)	2 (0.8%)	2 (5.7%)	2 (3.1%)	0 (%0)	0 (%0)	7 (0.9%)	0 (%0)	0 (%0)	2 (4%)	42
Inappropriate treatment of the medical team	0 (%0)	0 (%0)	3 (0.17%)	1 (2.2%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	1 (0.1%)	0 (%0)	0 (%0)	0 (%0)	5
Untimely presence of the physician	0 (%0)	1 (0.05%)	2 (0.11%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	2 (0.2%)	0 (%0)	0 (%0)	0 (%0)	5
Medical suggestions	0 (%0)	0 (%0)	2 (0.11%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	2
Patient's personal and family reasons	428 (53.10)	520 (27.8%)	670 (38.4%)	30 (68.1%)	311 (44.3%)	104 (46.4%)	21 (60%)	35 (53.8%)	13 (72.2%)	119 (48.3%)	440 (59.7%)	21 (35%)	25 (53.1%)	39 (78%)	2776
Training structure of the hospital	10 (1.24)	13 (0.6%)	22 (1.26%)	0 (%0)	5 (0.7%)	12 (5.3%)	5 (14.2%)	2 (3.1%)	0 (%0)	4 (1.6%)	36 (4.8%)	0 (%0)	0 (%0)	0 (%0)	109
Lack of welfare facilities	3 (0.37)	60 (3.2%)	84 (4.8%)	3 (6.8%)	18 (2.5%)	5 (2.2%)	0 (%0)	1 (1.5%)	1 (5.5%)	1 (0.4%)	9 (1.2%)	3 (5%)	2 (4.2%)	0 (%0)	190
Overcrowding of wards	3 (0.37)	369 (19.7%)	33 (1.8%)	0 (%0)	29 (4.1%)	2 (0.8%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	4 (0.5%)	0 (%0)	0 (%0)	0 (%0)	440
Shortage of diagnostic and medical equipment	2 (0.25)	15 (0.8%)	43 (2.4%)	1 (2.2%)	1 (0.14)	2 (0.8%)	0 (%0)	1 (1.5%)	0 (%0)	0 (%0)	4 (0.5%)	0 (%0)	0 (%0)	0 (%0)	69
Patient's willingness to be transferred to other centers	7 (0.87)	68 (3.6%)	28 (1.6%)	1 (2.2%)	58 (8.2%)	21 (9.3%)	3 (8.5%)	1 (1.5%)	0 (%0)	6 (2.4%)	29 (3.9%)	2 (3.3%)	5 (10.6%)	0 (%0)	229
Problems related to treatment costs	126 (15.63)	4 (0.2%)	14 (0.8%)	0 (%0)	2 (0.2%)	6 (2.6%)	0 (%0)	0 (%0)	0 (%0)	4 (1.6%)	3 (0.4%)	4 (6.6%)	0 (%0)	0 (%0)	163
Long distance between patient's place of residence and hospital	4 (0.50)	20 (1.1%)	25 (1.4%)	0 (%0)	23 (3.2%)	3 (1.3%)	0 (%0)	0 (%0)	0 (%0)	11 (4.4%)	6 (0.8%)	0 (%0)	1 (2.12%)	0 (%0)	93
Belief in healing and patient's willingness to continue treatment at home	220 (27.30)	777 (41.5%)	795 (45.6%)	5 (11.3%)	246 (35.1%)	66 (29.4%)	3 (8.5%)	23 (35.3%)	3 (16.6%)	101 (41.05%)	196 (26.5%)	30 (50%)	14 (29.7%)	9 (18%)	2488
Incurability of the disease	0 (%0)	19 (1.1%)	1 (0.05%)	1 (2.2%)	3 (0.4%)	1 (0.44%)	1 (2.8%)	0 (%0)	1 (5.5%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	27
Others	2 (0.25)	0 (%0)	0 (%0)	0 (%0)	4 (0.5%)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	0 (%0)	6
Total	806	1869	1742	44	701	224	35	65	18	246	737	60	47	50	6644

Discussion

The present cross-sectional, descriptive study was targeted toward identifying the reasons for DAMA among the patients admitted to Ghaem Research-Training and Medical Center, affiliated to Mashhad University of Medical Sciences, in the first ninth month of 2015. In line with the findings of other studies, in the current study, DAMA accounted for about 12% of total discharges (17, 18). However, in a study conducted by Tavalae et al., about 3% of the patients hospitalized in the Psychiatric Ward of Baghiyatollah Hospital of Tehran had left their treatment period and called for DAMA (19). This difference may be due to the military structure of Baghiyatollah Hospital and type of the studied ward in this hospital.

In consistent with our findings, in a study conducted in the US, the rate of DAMA was reported as 0.8-2.2%, which were mainly due to not being covered by insurance companies and poor economic status of patients (10). This discrepancy can be due to the difference in the cultural conditions of the countries under investigation. Since the rate of DAMA is under the influence of different variables, different statistics of DAMA are reported from various parts of the world, and it is not simply possible to compare them with one another (19).

In the present study, 7% of the patients discharged with a personal desire had a history of readmission to the hospital. Likewise, the results of a study conducted by Kabirzadeh on children hospitalized in Bu-Ali Hospital of Sari, Mazandaran Province, Iran, showed that 12% of patients had a history of readmission (20).

Generally, the findings of a study conducted in the US indicated that DAMA is the strongest predictor of readmission within 15 days after leaving the hospital and that 21% of the patients who had been discharged from the hospital as they wished were readmitted within 15 days (10).

In a study carried out by Anis, the results showed that the patients discharged with personal satisfaction had a higher readmission rate, compared to the patients discharged based on physician's prescription. In addition, DAMA patients were readmitted to the hospital for a longer period, compared to the duration of the first hospitalization (21). Berger also suggested that the patients discharged with a personal desire would have longer re-stay in the hospital and would not gain a desirable medical outcome (22).

In the present study, the highest rate of DAMA was observed in the wards under supervision, which is consistent with the findings obtained by Vahdat (18) and Rangraz (17). This similarity can be attributed to the fact that the treatment procedure finishes faster in the emergency units and the wards under supervision and patients can be discharged with their own desire if they feel better.

The findings also indicated that 86.7% of the patients had called for DAMA based on personal reasons with a

maximum frequency for personal and family reasons (41.8%). Rangraz (17) and Ebrahimipour (23) have also stated that personal issues accounted for most of the DAMA cases. By contrast, in a study conducted in Canada, family issues were reported to account for only 28.7% of DAMA cases. One reason for this difference could be the cultural differences of the societies under investigation (8).

Based on the results of the present study, only 2.4% of the patients had called for DAMA for financial issues and economic status. This is in congruence with the findings of two studies conducted by Vahdat in Shahid Rajai Medical-Training Center of Qazvin, Iran (18) and hospitals affiliated to Universities of Medical Sciences in Kashan, Isfahan Province, Iran (17).

On the other hand, the main reasons for DAMA in the US have been reported as poor economic status and not being covered by insurance companies (10, 16). Economic factors and medical costs accounted for a small part of DAMA reasons in this study, which can be due to the public nature of the studied hospital (i.e., Ghaem Hospital of Mashhad) and insurance coverage (18).

On the other hand, 13.01% of the participants had called for DAMA for hospital-related reasons, such as the overcrowding of wards, patient's dissatisfaction with medical team, training nature of the hospital, shortage of diagnostic and medical equipment, and lack of welfare facilities. In this regard, the highest frequency ($n=441$, 51%) was related to the overcrowding of wards. The results of a study performed by Rangraz in Kashan in the first half of 2008 showed that the reason for DAMA was related to the hospital conditions in 14% of the patients and the hostile environment of the hospital in 62.06% of the cases (17). In addition, 14.30% of the Canadian patients have stated the dislike of hospital environment as the reason for calling for DAMA (8).

The overcrowding of hospital wards disturbs the patients' calmness and comfort; therefore, it is necessary to provide a suitable environment free from any stress and tension for patients to relax and accomplish their treatment procedure.

The DAMA is one of the challenges of health systems in all countries around the world that results in additional costs and exerts harmful effects on the course of the disease by leading to health status deterioration or death. However, the early detection of patients who are likely to call for DAMA can facilitate the reduction of DAMA rate (21).

The results of the present study highlighted a serious need for paying special attention to this issue by the relevant authorities.

The findings of the present study can be applied for promoting the quality of health services and increasing the satisfaction of patients. This study has a number of limitations.

The conclusions drawn may not be generalizable to other hospitals because the study was conducted at a community hospital. With respect to the interventional strategies, this study failed to identify the patients who may have been threatened to leave or those successfully persuaded in some way not to leave.

Consequently, further study is needed to investigate these discharges and the involved patients in both urban and rural settings. Moreover, a prospective study with patient follow-up would certainly provide additional information to this research

Conclusion

It seems that the rate of DAMA in Iran is slightly higher than that of the other countries. Therefore, it is

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necessary to increase the awareness of patients and their family members about the consequences of early discharge.

On the other hand, hospital administrators are recommended to provide the required grounds for improving the level of service quality in collaboration with medical personnel in order to obtain patients' satisfaction.

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