

The Rate and Reasons for Discharge Against Medical Advice

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Objective: To evaluate the rate and reasons for discharge against medical advice.

Design: A Prospective Cross-Sectional Study.

Setting: King Hamad University Hospital, Bahrain.

Method: All patients discharged against medical advice (DAMA) from the Emergency Medicine Department (EMD) and in-patients from 1 August 2015 to 31 December 2015 were included in this study. A preformed questionnaire was given to the patient or the family members who signed DAMA form. The data were analyzed using SPSS version 19.0.

Result: Two hundred and ninety-nine patients were DAMA; the reasons for DAMA for adults and children combined were: 86 (28.8%) feeling better, 61 (20.4%) children at home, 51 (17.1%) long waiting time, 45 (15%) do not agree with the procedure or operation advised, 29 (9.7%) external obligations, 16 (5.4%) wish to have other treatment or consultation, 6 (2%) financial reasons, 3 (1%) dissatisfaction with medical or nursing care, 1 (0.3%) going on holiday and 1 (0.3%) the hospital does not allow husband to stay with his wife in the room.

The rate of DAMA signed by patients is relatively high when EMD was considered. However, it was relatively low percentage when inpatient admission was taken into consideration.

Conclusion: Our study revealed several predictors, which could be used for healthcare improvement.

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DAMA refers to a situation in which a patient decides to leave the hospital against the recommendation of the treating physician¹. The patient may not be medically fit or may not have completed the treatment, which might result in either mortality or morbidity.

Similarly, Leave Against Medical Advice (LAMA) refers to a condition in which the patient insists on leaving the hospital against the medical advice. The LAMA patients usually leave the hospital without notifying the medical unit². However, some practitioners do not consider an escape as a form of DAMA because one of the key elements of physician's expressed advice against leaving is missing in this case³.

DAMA is considered a quality healthcare indicator^{1,4,5}. It has a potentially negative implication on the performance of the healthcare system, including an increased rate of readmission, mortality, increased length of hospitalization and increased

healthcare costs⁶⁻⁹. Resolving the causes leading to DAMA could lead to a significant decrease in its rate^{1,10,11}. There is a great variation in the rate of DAMA from country to country, in the United States 1%, 4% in Saudi Arabia, 0.72% in Nigeria and Iran 10.3%^{5,12-16}.

The reasons associated with DAMA were discontent with hospital facilities, high treatment costs, psychiatric problems, family or personal issues, no substantial development in medical illnesses, confidence in traditional medicine, extended stay in the hospital^{13,17-19}. Patients who were from the urban area had high DAMA rates^{13,17-19}. Other studies revealed that that the patient is feeling better, displeasure with treatment, boredom are reasons of DAMA⁷. Resolving the reasons for DAMA might decrease the costs²⁰.

DAMA patients represent a high-risk group with a probability of increased morbidity and mortality rates.

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The aim of this study is to evaluate the rate and reasons for discharge against medical advice.

METHOD

All patients who signed DAMA forms from 1 August 2015 to 31 December 2015 were included. The data were analyzed using SPSS 19.0 and Microsoft Excel. Informed consent was obtained from patients and the guardians in case of minor for the study.

Inclusion criteria were as follows: All ages, no evidence of altered level of consciousness, psychiatric illness, alcohol or drug ingestion that would impair judgment but understands the nature of the medical condition, as well as the risks and consequences of refusing care. Exclusion criteria were as follows: Altered level of consciousness, psychiatric illness, alcohol or drug ingestion that would impair judgment and does not understand the medical condition, as well as the risks and consequences of refusing care.

RESULT

Three hundred eighty-nine patients signed DAMA between 1 August and 31 December 2015. All forms were completed either by the patient, their guardian or through phone interview for patients who were unable to complete the form. The final data were filtered based on the criteria of inclusion. Therefore, 299 patients were included in this study; 271 (90.6%) were adults, and 28 (9.4%) were children.

Figure 1 represents the data selection. Two hundred and ninety-nine patients were DAMA; 97 (32.4%) in-patients, 174 (58.2%) from the EMD and 28 (9.4%) from pediatrics.

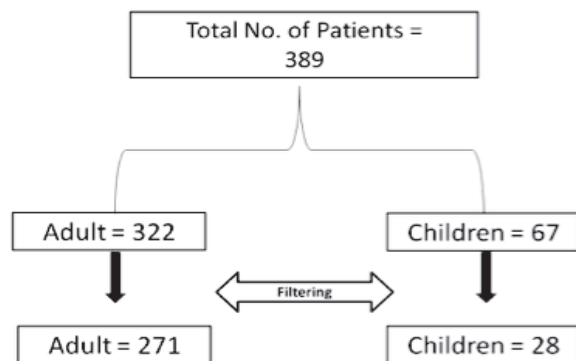


Figure 1: Flowchart Showing the Data Filtration and Selection Process

Two seventy-one adult patients were as follows: 191 (70.5%) females and 80 (29.5%) males. One hundred eighty-nine (69.8%) patients were between 18-40 years, 53 (19.5%) patients were between 41-60 years, 29 (10.7%) patients were 61 years and above. Patients or guardians who signed DAMA: 109 (40.2%) had high school diploma, 70 (25.8%) middle school, 68 (25.1%) university degree and 24 (8.9%) primary school. Among adult patients, 230 (85%) were married, 23 (8.5%) were single, and 18 (6.5%) were divorced or widowed. In the

Table 1 (A): Adult DAMA Characteristics

	Number and Percentage
Month	
August	61 (22.5%)
September	80 (29.5%)
October	41 (15.1%)
November	70 (25.8%)
December	19 (7%)
Total	271 (100%)
Day Type	
Weekday	206 (76%)
Weekend	65 (24%)
Total	271 (100%)
Time	
AM	133 (49.1%)
PM	138 (50.9%)
Total	271 (100%)
Nationality	
Bahraini	184 (67.9%)
Non-Bahraini	87 (32.1%)
Total	271 (100%)
Residency	
Residents of Muharraq Area	228 (84.1%)
Non-Residents of Muharraq Area	43 (15.9%)
Total	271 (100%)
Gender	
Female	191 (70.5%)
Male	80 (29.5%)
Total	271 (100%)
Age Group	
18 to 24 Years	53 (19.6%)
25 to 30 Years	59 (21.8%)
31 to 40 Years	77 (28.4%)
41 to 50 Years	31 (11.4%)
51 to 60 Years	22 (8.1%)
61 Years and Above	29 (10.7%)
Total	271 (100%)
Education	
Primary School	24 (8.9%)
Middle School	70 (25.8%)
High School/Diploma	109 (40.2%)
University Degree	68 (25.1%)
Total	271 (100%)
Employment Status	
Employed	110 (40.6%)
Unemployed	152 (56.1%)
Student	9 (3.3%)
Total	271 (100%)
Frequency	
First time	238 (87.8%)
Yes, once before	17 (6.2%)
Yes, a few times before	16 (5.9%)
Total	271 (100%)
Hospital Department	
EMD	174 (64.2%)
In-patient Services	97 (35.8%)
Total	271 (100%)
Revisit	
Revisit/Readmission within 1 week	61 (22.5%)
No Revisit/Readmission in 1 week	210 (77.5%)
Total	271 (100%)
Marital Status	
Married	230 (85%)
Single	23 (8.5%)
Others (Widowed/Divorced)	18 (6.5%)
Total	271 (100%)

Table 2 (A): Children DAMA Characteristics

	Number and Percentage
Month	
August	1 (3.6%)
September	14 (50%)
October	7 (25%)
November	1 (3.6%)
December	5 (17.8%)
Total	28 (100%)
Day Type	
Weekday	22 (78.6%)
Weekend	6 (21.4%)
Total	28 (100%)
Time	
AM	14 (50%)
PM	14 (50%)
Total	28 (100%)
Nationality	
Bahraini	16 (57.1%)
Non-Bahraini	12 (42.9%)
Total	28 (100%)
Residency	
Residents of Muharraq Area	22 (78.6%)
Non-Residents of Muharraq Area	6 (21.4%)
Total	28 (100%)
Gender	
Female	9 (32.1%)
Male	19 (67.9%)
Total	28 (100%)
Age Group	
Neonate	8 (28.6%)
Infant	6 (21.4%)
Toddler	6 (21.4%)
Pre-school	2 (7.1%)
School going	1 (3.6%)
Adolescent	5 (17.9%)
Total	28 (100%)
Education	
Middle School	10 (35.7%)
High School/Diploma	11 (39.3%)
University Degree	7 (25%)
Total	28 (100%)
Employment Status	
Employed	17 (60.7%)
Unemployed	7 (25%)
Student	4 (14.3%)
Total	28 (100%)
Frequency	
First time	26 (92.9%)
Yes, once before	2 (7.1%)
Total	28 (100%)
Hospital Department	
EMD	20 (71.4%)
In-patient Services	8 (28.6%)
Total	28 (100%)
Revisit	
Revisit/Readmission within one week	3 (10.7%)
No Revisit/Readmission in 1 week	25 (89.3%)
Total	28 (100%)

adults group, 152 (56.1%) were unemployed, 110 (40.6%) were employed, and 9 (3.3%) were students, see table 1 (A).

In the adult group, 238 (87.8%) patients were first timers, 33 (12.2%) were repeat. Sixty-one (22.5%) patient revisit or readmission within a week, and 210 (77.5%) did not revisit or admitted within a week, see table 1 (A).

Among children, 26 (92.9%) were first timers; DAMA signed by parents or guardians, 2 (7.1%) were repeat. Three (10.7%) patients revisit or readmission within a week and 25 (89.3%) did not revisit or admitted within a week, see table 2 (A).

Among pediatric patients, 9 (32.1%) were females and 19 (67.9%) were males. Eight (28.6%) were neonates, 6 (21.4%) infants, 6 (21.4%) toddlers, 5 (17.9%) adolescents, 2 (7.1%) preschoolers and 1 (3.6%) was school age. Guardians or parents who signed DAMA: 11 (39.3%) had completed high school, 10 (35.7%) middle school, 7 (25%) university degree. The guardians or parents were 17 (60.7%) employed, 7 (25%) unemployed and 4 (14.3%) students, see table 2 (A).

The reasons for DAMA among adults were 80 (29.5%) feeling better, 52 (19.2%) children at home, 49 (18.1%) long waiting time, 40 (14.8%) do not agree with the procedure or operation advised, 28 (10.3%) external obligations, 12 (4.4%) wish to have other treatment or consultation, 6 (2.2%) financial reasons, 2 (0.7%) dissatisfaction with medical or nursing care, 1 (0.4%) going on holiday and 1 (0.4%) the hospital does not allow husband to stay with his wife in the room, see table 1 (B).

Table 1 (B): Adult DAMA Reasons

Reasons	Number and Percentage
Improved health condition	80 (29.5%)
Children at home	52 (19.2%)
Long waiting time	49 (18.1%)
Do not agree with the procedure/operation advised	40 (14.8%)
Wish to have other treatment or consultation	12 (4.4%)
Financial reasons	6 (2.2%)
Dissatisfaction with medical or nursing care	2 (0.7%)
Going on holiday	1 (0.4%)
My husband not allowed to stay with me	1 (0.4%)
External obligations	28 (10.3%)
Total	271 (100%)

The reasons of DAMA among children were 9 (32.1%) children at home, 6 (21.4%) improved health condition, 5 (17.9%) do not agree with the treatment, 4 (14.3%) wish to have other treatment or consultation, 2 (7.1%) long waiting time, 1 (3.6%) external obligations and 1 (3.6%) dissatisfaction with medical or nursing care, see table 2 (B).

Table 2 (B): Children Reasons for DAMA

Reasons	Number and Percentage
Children at home	9 (32.1%)
Improved health condition	6 (21.4%)
Do not agree with the treatment	5 (17.9%)
Wish to have other treatment or consultation	4 (14.3%)
Long waiting time	2 (7.1%)
External obligations	1 (3.6%)
Dissatisfaction with medical or nursing care	1 (3.6%)
Total	28 (100%)

Table 3 (A): DAMA Characteristics in EMD

	Number and Percentage
Month	
August 2015	34 (19.5%)
September 2015	59 (33.9%)
October 2015	25 (14.4%)
November 2015	46 (26.4%)
December 2015	10 (5.7%)
Total	174 (100%)
Day Type	
Weekday	128 (73.6%)
Weekend	46 (26.4%)
Total	174 (100%)
Time	
AM	91 (52.3%)
PM	83 (47.7%)
Total	174 (100%)
Nationality	
Bahraini	120 (69%)
Non-Bahraini	54 (31%)
Total	174 (100%)
Residency	
Residents of Muharraq Area	149 (85.6%)
Non-Residents of Muharraq Area	25 (14.4%)
Total	174 (100%)
Gender	
Female	118 (67.8%)
Male	56 (32.2%)
Total	174 (100%)
Age Group	
18 to 24 Years	29 (16.7%)
25 to 30 Years	33 (19%)
31 to 40 Years	55 (31.6%)
41 to 50 Years	23 (13.2%)
51 to 60 Years	14 (8%)
61 Years and Above	20 (11.5%)
Total	174 (100%)
Frequency	
First time	154 (88.5%)
Yes, once before	8 (4.6%)
Yes, a few times before	10 (5.7%)
Frequently (more than 5 times)	2 (1.1%)
Total	174 (100%)
Revisit	
Revisit/Readmission within one week	37 (21.3%)
No Revisit/Readmission in 1 week	137 (78.7%)
Total	174 (100%)

One hundred seventy-four (58.2%) adult DAMA patients were from Emergency Medicine Department (EMD); 118 (67.8%) were females, and 56 (32.2%) were males. The reasons for DAMA in EMD were 55 (31.6%) improved health condition, 40 (23%) long waiting time, 28 (16.1%) children at home, 26 (14.9%) do not agree with the treatment, 15 (8.6%) external obligations, 7 (4%) wish to have other treatment or consultation and 3 (1.7%) financial reasons, see table 3 (A) and 3 (B).

Table 3 (B): DAMA Patients Reasons in EMD

Reasons	Number and Percentage
Improved health condition	55 (31.6%)
Long waiting time	40 (23%)
Children at home	28 (16.1%)
Do not agree with the treatment	26 (14.9%)
External obligations	15 (8.6%)
Wish to have other treatment or consultation	7 (4%)
Financial reasons	3 (1.7%)
Total	174 (100%)

DISCUSSION

Discharge against medical advice (DAMA) is common in any hospital worldwide; the rate and patient reasons vary. In our study, the overall DAMA rate in the adult inpatient was 35.8%, which is similar to other studies^{15,21}. This rate was much higher than 1.4% found in the USA due to DAMA¹³. However, it is still low compared to other studies^{20,22}.

DAMA from the EMD in this study was 64.9%. DAMA from all emergencies was 0.5%. That was similar to other studies that reported the prevalence of DAMA in the range of 0.07% to 0.7%^{15,21,23-27}. In pediatrics, DAMA rate was 6.7% compared to other studies^{28,29}. However, a rate as high as 8.49% has also been reported in a recent study in Kuwait³⁰.

Various factors and variables could influence the rate of DAMA, different rates have been reported worldwide, making the results hard to compare and contrast.

Therefore, factors associated with DAMA need to be recognized to be able to take appropriate steps and intervention to decrease the rate^{20,28}.

Similar to other studies, we found that the frequency of DAMA was more common in younger patients^{15,22,26}. In contrast to most of the earlier studies, DAMA was more common in women than in men^{13,15,20,22,26}.

Other studies found that patients who have more social support are at lower risk of DAMA^{15,31}. The most common reason given by patients for DAMA in our study was improved health condition. This reason was observed in others studies as well^{20,26,32}. An immediate relief of symptoms could result in a belief of cure³³.

Personal and family reasons were cited as common reasons for

DAMA in other studies^{20,26,32,33}. However, in our study, long waiting time was the second most common reason for DAMA, similar to other studies^{22,26}.

In many studies, DAMA patients cited financial reasons such as lack of insurance as one of the reasons; however, in contrast, we found only a small percentage of patients citing financial constraints^{18,25,31,32,34,35}. Revisit rate was 20.4% within one week; similar to other studies^{7,34,35}. The increased rate of readmission could reflect either the effect of DAMA or simply the high level of comorbidity among DAMA patients.

Our study had few limitations. Some of the available DAMA forms, especially for inpatients, were incomplete; information such as education level, income and employment were lacking. The initial diagnosis was not taken into consideration, which if considered, could have been an independent variable for DAMA. The relatively increased rate of DAMA readmission was either the effect of DAMA itself or the underlying comorbid conditions which could not be established in our study.

CONCLUSION

The main reasons for DAMA in this study were improved condition, long waiting time and children at home. A much higher frequency for DAMA was found in females compared to males. These strong predictors could be used for practice and care improvement.

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Competing Interest: None.

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