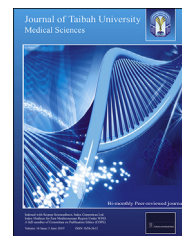




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Original Article

Discharge against medical advice in paediatric patients

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المخلص

أهداف البحث: الخروج ضد المشورة الطبية من المستشفى قد يكون له تأثير سلبي على صحة المريض. هدفت هذه الدراسة إلى التحقيق في الأسباب الرئيسية للخروج ضد المشورة الطبية من قبل آباء الأطفال المومنين في جناح الأطفال في مستشفى علي بن أبي طالب في زاهدان، إيران.

طرق البحث: أجريت هذه الدراسة للحالات على 130 طفلاً تم تنويمهم في جناح الأطفال في المستشفى. تم تقسيم الأطفال بالتساوي إلى مجموعتين؛ من هم غير مكتملي العلاج وأولئك الذين تم بقائهم في المستشفى حتى إنتهاء علاجهم واتبعوا الخروج العادي. تم تطبيق استبانة تبعاً ذاتياً لجمع البيانات.

النتائج: تضمنت مجموعة الدراسة 130 طفلاً أعمارهم أقل من 1 إلى 18 عاماً بمتوسط 3.3 ± 3.7 عاماً. وكان هناك 51.5% (67) من الفتيات و 48.5% (63) من الفتيان. أظهرت النتائج علاقة كبيرة بين تعليم الآباء ومدة العلاج في المستشفى، ومدة العلاج والخروج ضد المشورة الطبية عندما لم تكن هناك عوامل أخرى ذات علاقة هامة.

الاستنتاجات: كانت الأسباب الرئيسية للخروج ضد المشورة الطبية هو عدم الرضا من الأطباء والعاملين في المستشفى، واضطراب الأسرة بسبب وجود أطفال آخرين في المنزل، وعدم كفاية الوضع الاقتصادي والبقاء بعيداً عن البيت. يمكن لإعطاء ثقافة مناسبة للآباء والشرح عن الفوائد والأضرار لرفض إكمال العلاج أن يساعد الآباء لاتخاذ قرارات أفضل.

الكلمات المفتاحية: الخروج ضد المشورة الطبية؛ الخروج العادي؛ مقارنة؛ جناح الأطفال؛ رضا المريض

Abstract

Objectives: Discharge against medical advice (DAMA) from the hospital may negatively impact patients' well-being. The present study aimed to investigate the main reasons for DAMA among parents of children admitted to the paediatric ward of the Ali Ebne Abitaleb Hospital in Zahedan, Iran.

Methods: Participants in this case-control study included 130 children who had been admitted to the hospital's paediatric ward. Participants were divided into two equal groups: (1) those with incomplete treatment and (2) those who stayed in the hospital until the completion of their management and followed regular discharge procedures. A self-administered questionnaire was utilised for data collection.

Results: Participants included 130 children aged <1–18 years with an average of 3.3 ± 3.7 years; 51.5% (67) were girls, and 48.5% (63) were boys. The results showed a significant relationship between DAMA and the father's level of education ($p < 0.05$), length of hospitalization ($p < 0.001$), and duration of treatment ($p = 0.027$). No significant correlation was found for other factors ($p > 0.05$).

Conclusion: This study found that the key reasons for DAMA were as follows: lack of satisfaction with physicians and hospital staff, family disturbance due to the presence of other children at home, inadequate economic situation, and being away from home. Providing professional education to parents and expressing the benefits

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and disadvantages of refusing complete treatment may help parents make better decisions.

Keywords: Comparison; Discharge against medical advice; Normal discharge; Paediatric wards; Patient satisfaction

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Introduction

Discharge against medical advice (DAMA) is a term utilised in human services foundations to denote when a patient leaves the hospital before completing treatment, against the proposal of specialist to treatment end.¹ Although leaving the hospital before a medically-specified end to treatment may not promote the patient's health, there is widespread ethical and legal consensus that competent patients (or their authorised surrogates) are entitled to decline recommended treatment. The refusal of treatment was initiated by the patient's or parents' untimely termination and, in some cases, issued a readmission or even a death.^{2,3} The data available suggest that, in general, patients who discharge AMA have an increased risk of hospital readmission, potential morbidity, and even sudden death.⁴

One can say that care can only be considered 'high quality' if the patient is satisfied with the services presented. When patients feel more satisfied, they cooperate more with clinical staff; furthermore, when they receive treatment consistently, they are more likely to utilise medical office services.^{5,6}

It has been shown that early discharge from the hospital and refusal to continue treatment causes mortality or re-hospitalization about 180 days after leaving the hospital.³

Some factors related to hospital discharge include: socio-economic status, gender, age, substance abuse, reliance on traditional treatment, hopelessness related to the disease state, parents' limited medical knowledge,^{7,8} quality of life, doubt or mistrust of doctors, self-reliance, and suffering children.⁹ Sometimes, despite being informed of the side effects and consequences of DAMA by physicians or nursing staff, parents, or even patients, still insist on being discharged and ending the treatment process; it is a patient's right to exit the hospital according to their desire.² Additionally, it is believed that, while parents are free to make decisions regarding themselves, even ones that are inconsistent with their survival, they are not, however, free to make this kind of decision on behalf of their sick children; that is, parents cannot deprive their children of proper treatment on the basis of their beliefs.¹⁰ Refusal of treatment is a global phenomenon and is not limited to developing countries,¹¹ and from this global view, the overall cost of care for patients who end treatment early is very high. Therefore, identifying factors relevant to paediatric DAMA to help prevent early termination of treatment is useful for both patients and health care systems.¹² However, to date, there has been no estimation of

the rate and reasons for personal satisfaction in children with fragmented treatment in examination with finishing treatment, and the explanation behind such refusals is the significance of the continuation of treatment and release from the perspective of a healing centre and sickness administration. Along these lines, this study assessed the factors and explanations behind declining treatment and ending it with individual fulfilment by the guardians of children.

Materials and Methods

For this case-control study, 130 patients in the paediatric ward of Ali Ebne Abitaleb Hospital in Zahedan, Iran, were randomly selected as participants. Participants were divided into two groups: those who were discharged against medical advice (case) and those who completed their treatment (control). The study took place in 2015.

Sampling included up to 65 children who were discharged AMA and 65 children who were discharged after treatment ended with their parents' consent. Sampling was performed based on consenting, contactable participants. Admission to the Ali Ebne Abitaleb Hospital served as the inclusion criterion, while unwillingness to participate in the study or lack of parental cooperation served as the exclusion criteria. Based on a previous study by Danou et al. (2003)¹³ and the following derived parameters ($p = 0.64$ and $d = 0.12$), the sample size was estimated 62 in each groups in which considered 130 in both case and control for the study.

$$n = \frac{(Z_{1-\alpha/2})^2 * p(1-p)}{d^2}$$

where: the value of α , the probability of type I error (choose either one-sided test or two-sided test) with $Z_{\alpha/2} = 1.96$, value of P , proportion of characteristic present in proportion of DAMA and d , effect size (the difference in proportions).

Paediatric patients were considered to have been discharged AMA if their parents signed a standard hospital form acknowledging that they were discharging their children and accepting all responsibility for withdrawing their children's care against the paediatrician's advice. Before leaving the hospital, either these parents or the patients were interviewed using a set of questions that related to the likely factors for DAMA. Staff nurses asked the participants to complete a structured questionnaire containing the following items: patient's age, gender, number of children in the family (parity), possession of health insurance, parents' education, parents' employment, length of hospitalisation, and treatment while in the ward.

Data analysis

The data was analysed with version 20 of the SPSS statistics software using frequencies and percentages. For categorical variables, Chi-square tests were applied for inferential statistics. For continuous variables, the mean and standard deviation were estimated, and related tests, such as the t-test and one-way analysis (ANOVA), were conducted to determine the probable significant relationship. The level of significant considered in 0.05 error.

Results

The study population consisted of 130 children aged 1–18 years with a mean of 3.3 ± 3.7 years and matched in case (3.28 ± 4.03) and controls (2.73 ± 3.41). The pattern showed that the means for the length of hospitalisation were 1.24 ± 0.43 and 4.56 ± 2.97 for the patients who were discharged normally and AMA, respectively ($P < 0.001$). The means for treatment length were 1.24 ± 0.43 and 1.67 ± 1.31 for the patients who were discharged normally and AMA, respectively ($P = 0.027$). The gender sharing was 51.5% (67) and 48.5% (63) for girls and boys, respectively. This sharing was similar in types of discharge ($p = 0.219$). Parents' economic status did not show a significant association with the discharge types ($p = 0.113$). The majority of normally discharged participants were in the median class (50.80%), while the majority of participants who were discharged AMA were in low class

(41.5%). The parents' ages were similar for both groups (Table 1).

The data in table revealed that the fathers' level of education meaningfully correlated with discharge type ($p = 0.019$), whereas the mothers' education was not significantly associated ($p = 0.200$). There was no significant correlation between the nature of parental employment and the discharge types. In both discharge types, most of the fathers owned their own businesses and the mothers were unemployed. From the table resulted that child's parity was similar in the groups. The patients were hospitalised in different sections of the paediatric wards according to speciality, and the data showed that the type of discharge varied according to these sections ($p = 0.042$). For instance, most of the patients with infectious diseases were discharged in the normal way (54.84% vs. 45.16%), whereas a very low percentage of nephrology patients were discharged in the normal way (12.50% vs. 87.50%) (see Table 2).

Table 1: Types of discharge comparison in variables categories.

Variables	Groups	Normal discharge	Discharged AMA	P value
Hospitalization length (days): Mean (SD)		1.24 (0.43)	4.56 (2.97)	<0.001
Treatment length (days): Mean (SD)		1.24 (0.43)	1.67 (1.31)	0.027
Gender: Numbers (%)	Girls	37 (56.9)	30 (46.2)	0.219
	Boys	28 (43.1)	35 (53.8)	
Participant's age (years): Mean (SD)		3.28 (4.03)	2.73 (3.41)	0.569
Economic status: Numbers (%)	Low	16 (24.6)	27 (41.5)	0.113
	Median	33 (50.8)	24 (36.9)	
	Good	16 (24.6)	14 (21.5)	
Father's age (years): Mean (SD)		35.26 (8.18)	33.65 (9.20)	0.292
Mother's age (years): Mean (SD)		29.09 (6.98)	29.2 (6.89)	0.93

Table 2: Types of discharge comparison in parental job, parental education, Child's parity and in different section of the paediatric ward.

Variables	Groups	Normal discharge	Discharged AMA	p-value
		# (%)	# (%)	
Father's education	Illiterate	11 (16.9)	11 (16.9)	0.019
	Primary	7 (10.8)	19 (29.2)	
	Secondary	11 (16.9)	15 (23.1)	
	High school	20 (30.8)	14 (21.5)	
	Higher education	16 (24.6)	6 (9.2)	
Father's Job	Unemployed	9 (13.8)	8 (12.3)	0.405
	Business owner	34 (52.3)	32 (49.2)	
	Government employee	14 (21.5)	10 (15.4)	
	Worker	8 (12.3)	15 (23.1)	
Mother's education	Illiterate	17 (29.2)	19 (29.2)	0.2
	Primary	10 (15.4)	20 (30.8)	
	Secondary	11 (16.9)	7 (10.8)	
	High school	15 (23.1)	12 (18.5)	
	Higher education	12 (18.5)	7 (10.8)	
Mother's Job	Unemployed	58 (89.2)	62 (95.4)	0.344
	Business owner	1 (1.5)	0 (0)	
	Government employee	6 (9.2)	3 (4.6)	
Child's parity	1	22 (33.8)	19 (29.2)	0.869
	2	23 (34.4)	22 (33.8)	
	3	9 (13.8)	9 (13.8)	
	4	4 (6.2)	9 (13.8)	
	5	1 (1.5)	2 (3.1)	
	6	2 (3.1)	2 (3.1)	
	7	2 (3.1)	1 (1.5)	
	8	2 (3.1)	1 (1.5)	

Table 2 (continued)

Variables	Groups	Normal discharge	Discharged AMA	p-value
		# (%)	# (%)	
Diseases	Infection	28 (54.84)	34 (45.16)	0.042
	gastrology	14 (46.15)	12 (53.85)	
	Nephrology	7 (12.50)	1 (87.50)	
	Endocrinology	1 (50)	1 (50)	
	Cardiology	3 (75)	9 (25)	
	Haematology	7 (12.50)	1 (87.50)	
	Neurology	5 (58.33)	7 (41.67)	

AMA: Against Medical Advice

Discussion

The refusal or unplanned cessation of treatment by paediatric patients or their parents can lead to a worsening of the patient's condition and/or rehabilitation; occasionally, death and complications that cannot be compensated for in the long run have also occurred.^{2,6,9} The results of the present study showed that the durations of hospitalisation and treatment were higher in patients who were discharged AMA. Economic status did not show a significant association with discharge type. The majority of normally discharged participants were in the median class, while the majority of participants who were discharged AMA were of lower socioeconomic status. The level of the patients' parents' education showed a meaningful correlation with discharge types; however, the mothers' level of education and the parents' job were not significantly associated. This study also examined patients hospitalised in different sections of the paediatric wards, and the results showed that a majority of the patients in the infectious diseases unit were discharged normally, while in the nephrology unit, very few were normally discharged.

Duno et al.¹³ reported that the prevalence of DAMA varied from 0.7% to 7% in general hospitals, while Roodpeyma et al.,¹⁴ Saravi et al.,¹⁵ and Malek et al.¹⁶ reported 5.3%, 2.2%, and 8.49%, respectively. Berger et al.¹⁷ reported that about 1% of hospital discharges were AMA; however, Rezaeiimofrad et al.¹⁸ found that the rate was higher. While the present study did not attempt to determine the prevalence of DAMA, the results of the aforementioned studies have shown that it is high.^{13–18} Worldwide, therefore, DAMA poses a challenge to the healthcare system in terms of treatment and medical expenses because the consequences of untreated disease processes can lead to worsening conditions, particularly in the case of children, who cannot perceive their situations accurately and are not able to participate in decision-making concerning their treatment.¹⁴

The present study demonstrated that the level of a paediatric patient's father's education as well as durations of hospitalisation and treatment had a strong impact on instances of DAMA that resulted in rehospitalisation, death, or many other negative conditions for the patients.¹⁸ The mother's level of education, child parity, the family's socioeconomic status, and the nature of the parents' employment were not found to correlate with DAMA. Instances of

DAMA for adult patients tend to occur among disadvantaged patients who lack family support, experience financial and social difficulty, and are not covered by any health insurance.¹⁸ However, instances of DAMA for paediatric patients occur because of the child's parents, who bear important health consequences on their children. There are only a few studies published on DAMA in the paediatric population^{14,16,19,20} that associate mortality and rehospitalisation comparable with the results of the present study. Kabirzadeh et al.²⁰ concluded that among patients who were discharged AMA, 12% were re-admitted to the hospital. For paediatric patients, DAMA is implicitly based on the parents' knowledge, especially fathers. While it is true that physicians clearly know the consequences of DAMA, a child is unable to express their opinions due to their inadequate knowledge of this process.^{13,21} The present study revealed that paediatric patients whose fathers had completed higher education were discharged normally, even if they had spent a long time in the hospital. Ravanipour et al.²² concluded that the highest reason was the parents' sensitivity. In this regard, identifying the factors may be used for proper interventions to reduce the rate.

Previous studies have shown that the most important factors relating to DAMA are clinical, social, and demographic.^{13,23,24} Danou et al.¹³ demonstrated that there was a difference in discharge types between genders; namely, that the rate of DAMA is higher in males, which is in line with the present study's results. Age is also a factor that is likely to be involved in a request to be discharged AMA. For instance, it has been reported that younger people more frequently request to be discharged AMA.^{13,25} The present study did not observe a difference in the parents' ages and the types of discharge. Mabilia et al.²⁵ found that age has a direct and significant impact on DAMA,²⁵ which is the result of this study, was dissimilar with the present in case of fathers'. The present study revealed that an increase in father's education the frequency of patients with DAMA increased when was not meaningful in mothers' education. This is most likely due to governing cultural conditions in which fathers make the final decisions.³ Economic factors are the most important factors in early clearance with personal satisfaction. While Aliyu et al.²⁶ showed that economic issues were the most important factors for DAMA, we did not find this in our research; although, this may be because our population displayed values of promoting

health and a high rate of insurance coverage.²³ Child parity is also likely to be a personal factor for DAMA in paediatric populations.²⁷ Some researchers believe that, in curded families, parents are more likely to insist on DAMA because of the economic impacts,²⁸ but we did not find a significant relationship between the number of children in a family and paediatric DAMA. The type of employment of the patient's parent was another factor which had high impact on paediatric DAMA²⁶; this factor is related to economic status. While one study has shown that the children of parents who were satisfied with their jobs spend more time in the hospital receiving treatment,²⁷ our investigation concluded that a parent's occupation did not play a role in the level of the completion of their child's medical treatment. Aliyu et al.²⁶ showed that patients who experienced long periods of treatment and hospitalisation had a greater tendency to insist on DAMA, which was confirmed by the present study.

Other studies have reported a relationship between diagnosis and DAMA. A study carried out in Gachsaran, a city in Iran, showed that infectious patients were discharged AMA at higher rates compared with their counterparts. Digestive diseases, nephrology, and haematology also reported a higher frequency of patients completing treatment.²² The present study found that patients with infectious and cardiovascular disease were at higher risk of DAMA. Baptist et al.²⁴ showed that some of the factors that had a high correlation with DAMA included dissatisfaction with hospital services as well as a host of personal reasons such as: addiction or drug abuse (by the patient or the parents), high hospital costs, psychiatric problems, family problems (such as the presence of other small children at home), no significant improvement, belief in traditional medicine, long hospital stays, a feeling of recovery, and place of residence (urban or rural). The major findings of this study which correlated with the types of discharge and risk-factors outlined in the studies mentioned above were as follows: the child's feelings of recovery with regard to parental perception, having other children at home, challenging economic situations, and residing a long distance from the hospital.^{23–29}

Study limitation

Our study was limited by its small sample size and inaccurate reports from patients' parents.

Conclusion

From the results of this study, it can be concluded that patients with long durations of treatment and hospitalisation have a higher tendency for DAMA.

Source of funding

This study was undertaken as a GP dissertation at Zahedan University of Medical Sciences (ID number 1619) without any grants or supports. Dr. Khalili reported that she

did not receive any research grants or consulting/speaking fees from the Zahedan University of Medical Sciences, Zahedan, Iran.

Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

Ethical notes were considered in all stages of this study, including the sampling and collecting of controls and cases from the paediatric ward. Participants or their parents were informed about the study's aim then asked if they wanted to take part. Their participation in the study began after they agreed and signed the consent form. This study was approved by the Medical Research Ethics Committee of Zahedan University of Medical Sciences as a GP dissertation (ID number: 1619).

Authors' contributions

The manuscript was conceived and designed by MK, AT, IS, and NS. Data collection was performed by JSYT and MF. The data were analysed by AT and NS, and the manuscript was written by AT. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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