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Factors Associated with Discharge of Children from Hospital Against Medical Advice (AMA) at Doctor Sheikh Pediatric Hospital (DSPH) in Mashhad: 2011-2013

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Abstract: Background the AMA discharge indicates the serious problems in the quality of hospitals services and leads to poor health care, increased mortality, adverse consequences in long-term and disorder in treating process. In this study we examined Factors Associated with AMA Discharge of Children from Hospital at DSPH in Mashhad: 2011-2013. Methods in this descriptive cross-sectional study, 365 cases of 1100 children who had been discharged on personal volition of their parents during 2009, 2010 and the first half of 2011 were selected using systematic sampling. Data were collected using a questionnaire which has been filledusing thepatients' medical records information followed by telephone call to children's parents.. Data were analyzed using descriptive and analytical statistics (Frequency and percentage, statistical correlation tests) and SPSS16 Software.Results emergency department (72.4%) and ICU (3.4%) had the highest and the lowest rate of hospitalized children, respectively. The main reasons for AMA were: patient- related reasons(financial constraint 7.9%¡family problems 3.4%¡ feeling of wellbeing 59.7%Be traveler6.2%) ¡hospital staff- related reason (Nurse and Physician negligence 15.5%¡ Inappropriate behavior 5/4%¡ physicians suggestion 18%¡ absence of timely physician 6.2%¡ lack of skilled medical staff 18/3)¡ hospital condition (improper cleaning 3.7%¡ inadequate equipment 5.6%¡ poor nutrition1.1%¡ unsuitable environment 8.2%).Conclusions improved communication between physician and patient, patient's increased awareness of probable complications of early discharge, improved quality of hospital services, using clinical aids and designing green space and a pleasant environment are the recommended strategies to reduce the rate of discharge against medical advice.

Key words: Discharge Against Medical Advice · Paediatric Hospital · Quality

INTRODUCTION

Hospital self-discharge against medical advice (AMA) can lead to serious concerns about early leave of medical facilities and its harmful effects [1]. Discharge AMA can result in long-term readmission of patients [2]. This occurs when the patient leaves the hospital willingly despite the physician's advice [3]. Discharge AMA depends on the patient and the hospital conditions [4].

The AMA discharge indicates the serious problems in the quality of health-care services of the hospital and leads to poor health care, increased mortality, adverse consequences in long-term and disorder in treating process [5]. In other words, these patients are more exposed to mortality and morbidity arising from disease compared to those leaving the hospital with the doctor's certificate.

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A study shows that the mortality rate in a one-year period among patients who left the hospital has been approximately 15.7% [6]. In addition, the AMA discharges are usually associated with re-hospitalization within the first fifteen days after leaving the hospital. In other words, 21 percent of patients who leave AMA were re-hospitalized during this period [5]. This increases health care costs up to approximately 56%, while additional costs of patients' readmission in Australia are estimated about 8.6 million dollar [7]. A comprehensive study on the discharges AMA shows that these discharges in Canada and America constitute one percent and 0.8 to 2.2 percent of the total discharge, respectively [6].

In Iran, according to a study conducted in the Baqiatallah Hospital (Tehran, Iran) in 2006, the rate of discharge AMA is reported 3% in psychiatric ward of this hospital [8]. In addition, the rate of discharge AMA is estimated 4.9% according to a study conducted in Tehran's heart Hospital in 2010. A study conducted by Vahdat *et al*. (2010) in the educational and treatment center of Shahid-Rajaei (Qazvin, Iran), indicates that dissatisfaction with medical services (33%), physicians' advices (27.59%) and dissatisfaction with facilities and equipment (12.7%) are the most important reasons of hospital discharge [9].

In addition, the study conducted in the emergency department of Imam Khomeini Hospital (Tehran, Iran) in 2008 indicates that male gender, younger age and history of addiction have not affected the rate of discharge against medical advice. Most of patients who left the hospital have not been covered by any kind of insurance and dissatisfaction with medical care and diagnostic services (38.2%) were the main reasons of discharge AMA in the emergency department of Imam Khomeini Hospital (Tehran, Iran) [10].

High rate of discharge AMA in Iran causes concerns about need for readmission, effect on utilization of hospital resources, ethical issues, communication between patient and physician and mental condition of the patient in the country's health care system [6].

In other words, since failure to complete hospitalization course is a risk factor of disease recurrence, re-hospitalization and spending more costs [3], it seems necessary to identify the variables correlated with discharge against medical advice. Considering the above-mentioned points and the implementation of clinical governance in the health care system of country and its central role in hospitals accreditation in one hand and the fact that the investigation of the reasons of discharge AMA is considered as one of the considerable actions of clinical governance system and the lack of scientific and documentary researches on the investigation of discharge AMA and its reasons in Children's Hospitals (KhorasanRazavi, Iran) on the other hand; the present study aims to determine the rate of discharge AMA and to identify factors affecting this rate in Doctor Sheikh children's Hospital during 2011-2013.

MATERIALS AND METHODS

In this descriptive cross-sectional study, 365 cases of 1100 children who had been discharged on personal volition of their parents during 2011, 2013 were selected by systematic sampling. Data were collected using a customized researcher-made questionnaire including three parts of children-related variables, children's family-related variables and discharge reasons (Issues related to patients, hospital staff and hospital's environment). The validity of the questionnaire was assessed using content validity and reliability was estimated by split half method and calculation of correlation coefficient between the two halves' scores ($r = 0.87$). in the first stage, data were collected using the information contained in the patient's medical records, then information not expressed in the medical records (Such as background information related to the family of discharged children) were collected by a telephone survey to children's parents. In case of failure on the first phone survey, call was repeated three times; and in case of failure on or lack of cooperation in response, the next sample was replaced. Data were analyzed using descriptive statistics (Frequency and percentage), statistical correlation tests and statistical package of SPSS (Version 16). The significant level was 0.05 in all tests.

RESULTS

In general, 26089 people were discharged from DSPH during 2011 to first half of 2013 which 4.2% of them were AMA. Data related to the characteristics of children who were discharged AMA are presented in Table 1. Length of stay for 31.3, 5.1, 57.7 and 5.9 percent of children was 1-5 days, 6-10 days, less than 24 days and more than 10 days, respectively. Emergency department (72.4%) and ICU (3.4%) had the highest and the lowest rate of

Table 1: Frequency distribution of data related to the characteristics of children for discharge AMA

	Characteristic	Frequency
Sex	Female	43.4
	Male	56.6
Age	<12 month	41
	≥12 month	59
insurance coverage	Yes	85.9
	No	13.8
Previous hospitalization	Yes	13.6
	No	86.1

Table 2. characteristics of discharged children's families.

Characteristic	(%)
Number of children in family	
<2 children	27
≥2 children	41.5
=2children	31.5
Fathers' education	
Primary school	15.1
Middle school	29
Diploma of high school	33.7
University degree	22.2
Father's job	
Self-employed	48.6
Office worker	26.7
Labor	20.4
Unemployed	3.4
Mothers' education	
Primary school	15.9
Middle school	23.5
Diploma of high school	43.6
University degree	17.1
Mother's job	
Office worker	16.6
Labor	1.8
Housekeeper	81.3

Table 3: Frequency distribution of patients' reasons for discharge AMA due to the patients-related issues in terms of hospital ward

	Reasons								
	Family Problem		Feeling of wellbeing		Financial constraint		Be traveler		
Department	n	%	n	%	n	%	n	%	Total
Internal	8	4.7	129	76.7	14	8.3	17	10.1	168
Emergency	4	4.5	67	77	11	12.6	5	5.7	87
Surgery	0	0	8	88	1	11	0	0	9
ICU	0	0	8	80	2	20	0	0	10
Nephrology	0	0	0	0	0	0	0	0	0
Total	12	3/4	212	77.3	28	10.2	22	8.02	274

Table 4: Frequency distribution of patients' reasons for discharge AMA due to the hospital staff-related issues in terms of hospital ward

	Reasons										
	Nurse & Physician negligence		Total Xbehavior		Physicians' advices		Absence of timely physician		Lack of skilled medical staff		
Department	N	%	n	%	n	%	n	%	n	%	Total
Internal	4	18.1	1	4.5	7	31.8	3	13.6	7	31.8	22
Emergency	40	26.4	13	8.6	41	27.1	11	7.2	46	30.4	151
Surgery	6	22.2	3	11.1	8	29.6	4	14.8	6	22.2	27
ICU	2	20	3	30	1	10	2	20	2	20	10
Nephrology	3	20	1	6.6	5	33.3	2	13.3	4	29.6	15
Total	55	24.4	21	9.2	62	5.27	22	9.7	65	28.8	225

Table 5: Frequency distribution of patients' reasons for discharge AMA due to the hospital environment-related issues in terms of hospital ward

	Reason								
	Improper cleaning		Inadequate equipment		Poor nutrition		Unsuitable environment		
Department	N	%	N	%	N	%	N	%	Total
Internal	0	0	2	40	0	0	3	60	5
Emergency	7	14.8	15	31.9	4	8.5	21	44.6	47
Surgery	3	42.5	2	28.5	0	0	2	28.5	7
ICU	1	5	1	50	0	0	0	0	2
Nephrology	2	40	0	0	0	0	3	60	5
Total	13	19.6	20	30.3	4	6.06	29	43.9	66

hospitalized children, respectively. Social Security (46.2%) and Imam-Khomeini Relief foundation (1.1%) provided the maximum and the minimum insurance coverage, respectively. Furthermore, 89, 9.6 and 1.4 percent of children were discharged on personal volition of father, mother and others, respectively. discharge AMA rate by clinical department showed: Internal(9.01%), Surgery (9.8%), Emergency (72%), Nephrology (5.35%) and ICU (3.3%).

Table 2 shows the characteristics of discharged children's families.

274(48.4%) of discharge AMA were due to patients problem, 225(39.8%) were due to hospital staff-related reasons and 66(11.6%) were due to hospital environment-related reasons

Tables 3, 4 and 5 show patients-related reasons for discharge AMA, hospital staff-related reasons and hospital environment-related reasons, respectively.

DISCUSSION

This descriptive and cross-sectional study aims to investigate the main reasons of discharge AMA in DSPH.

The rate of discharge AMA in DSPH in Mashhad is 4.2%. In studies conducted in Canada, America and Iran, percent of 1, 0.8-2.2 and 10.3 were obtained, respectively [11, 12]. These findings are not consistent with the study. These differences can be due to the different of the study population.. In this study, there was no significant difference between boys and girls in terms of the percent of discharge against medical advice. It is not consistent with Onizuka study reporting more discharge AMA in female children in Nigeria [14]. The present study shows that the rate of discharge AMA depends on the study population's age. The rate of discharge in children over 12 months is more than children under 12 months, which is not consistent with the results of Onizuka study in Nigeria [14]. In our study, more than half of the parents had high school diploma and college degrees, while in Onizuka study in Nigeria, more than half of the parents were illiterate or had left school at primary grade leading to maximum discharge AMA due to financial problems [13]. In this study, most of the fathers having discharged their children AMA were self-employed and most of the mothers were housewives. This is consistent with the results of the study conducted in Taleqani Hospital (Tehran, Iran) [15].

In this study, 274 patients (48%) left the hospital AMA because of the feeling of child's improvement, family problems, financial problems and being passengers, among which the feeling of child's improvement has the highest frequency. A study conducted in Canada shows that of 57 patients discharged AMA, 28.07%, 28.07% and 19.3% have left the hospital because of the improvement feeling, family problems and impatience, respectively [16]. These findings are not consistent with the results of the present study in some respects. This inconsistency can be due to cultural differences and that the Mashhad is a pilgrimage city so a big part of referred patients are passengers or pilgrimage.

Findings showed that more than 10% of patients have left the hospital due to financial and economic problems, while in studies conducted in Nigeria and America, financial pressure and low economic status are considered as the main reasons of AMA discharges. This is not consistent with the results of the present study [13,14]. Differences in these results may be due to lack of access to insurance coverage in Nigeria. In America, these results are different since main problems of this study have been solved and subsequently financial problems have gained more importance.

More than one fourth of patients left the hospital because of dissatisfaction with medical staff. This finding is the same as the study conducted in Canada [11]. Lack of adequately informing patients and their families of treatment method by health care team, lack of medical staff's attention to the patient's improvement situation and lack of providing necessary information about the effects of early discharge cause the patient to imagine that medical staff are not experienced and to leave the hospital AMA.

More than 10 percent of discharge is due to the improper environment of the hospital. The study conducted in America showed that 14.30 percent of patients had left the hospital for the same reason [16]. In the study hospital, a suitable atmosphere along with attractive colors was designed for the comfort of the patient and his attendant, which can be the reason of low dissatisfaction with the DSPH environment.

Limitation: Disinclination of patients' families to participate in completion of forms is one of the limitations of study. Researchers have tried to solve this problem through explaining the positive results of this project to the patients' families and encouraging them to participate in this project.

CONCLUSION

It seems that the rate of discharge AMA is higher than other countries and it is mainly because of the patients' problems for staying longer in the hospital.

In order to satisfy patients, hospital managers should provide necessary conditions for improving services quality and improve it in cooperation with medical staff. Improved communication between physician and patient, patient's increased awareness of probable complications of early discharge, improved quality of hospital services, using clinical aids and designing green space and a pleasant environment are suitable strategies to reduce the rate of discharge against medical advice.

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