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Effects of Iranian Healthcare Transformation Plan on Discharge against Medical Advice

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Abstract--- Background: *The Health care transformation plan (HCTP) is expected to improve the regulations and quality of the provided services in hospitals. The aim of this study was to evaluate the Effects of Iranian healthcare transformation plan on discharge against medical advice (DAMA) of Mazandaran University of Medical Sciences.* ***Method:*** *This descriptive-retrospective study was performed 2630 patients discharged during the two half-yearly time intervals before (2013-2014) and after (2015-2016), respectively. Data collection was by standard form of DAMA issued by the Ministry of Health and Medical Education. Data analyses were performed by descriptive statistics and inferential statistics. SPSS-16 software was used in this study and P values less than 0.05 were considered significant.* ***Results:*** *The level DAMA before and after introduction of the Healthcare Reform was 4.5 and 4.11 percent, respectively, which did not differ significantly (p = 0.889). In addition, there was no significant difference in the discharge level by age groups, hospital departments (p = 1), gender (p = 0.57), or holydays (p = 0.73).* ***Conclusion:*** *Our study did not find any evidence for the impact of the HCTP on frequency of the DAMA and the factors associated to it. However, the overall results implied necessity of a more comprehensive and integrated planning regarding supply of the required facilities, equipment, and human resources, as well as enlargement of physical space of treatment centers within the framework of this large-scale, nationwide program.*

Keywords--- *Discharge against Medical Advice, Patient Satisfaction, Healthcare Transformation, Patient Recovery.*

I. INTRODUCTION

Every government is required to provide health services to its subjects [1], and the healthcare today is among the major service sectors [2], which in recent years has undergone extensive changes in structure, technology, and service delivery for moving toward higher efficiency, better service quality, and greater patient and visitor satisfaction [3]. Health systems are currently under much pressure for improving their performance [4] in order to increase patient satisfaction in hospital as one of the key evaluation components [5], considering that hospital services account for 50-80 percent of the health sector [6]. Regarding the prevalence of diseases, especially emerging, emerging and infectious diseases such as hepatitis- one of the most prevalent infectious diseases in the world -, AIDS- a pandemic disease that threatens the world population- ,TB- one of the famous and ancient contagious diseases- it is necessary to HCTP[7-9].

When medical facilities and equipment are below the acceptable level and patients are not satisfied with

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diagnosis of medical team, they may choose to voluntarily leave and change the hospital for further treatment [10]. Discharge on one's own accord refers to a situation where the patient decides to leave the hospital against medical advice [11], which is considered a threat to patient health [12]. Patient premature discharge against medical advice has been associated with increased risk of readmission and medical retreatment. DAMA, which begins with sudden termination of treatment by patient or his/her attendants and in some cases ends up with patient's readmission or even death, could be an indicator of patient dissatisfaction signaling presence of a serious problem [13]. Earlier findings show that in the U.S. public hospitals, of every 65-120 admitted patients, there is one case of discharge on patient's own initiative which in aggregate, account for 0.8-2.2 percent of total discharges in the U.S. public hospitals [14]. By investigating the determinants of patient's voluntary, premature discharge, the weak points or the problem areas in healthcare services could be identified [15] which would help creating a more agreeable environment for patients and consequently boosting their satisfaction [16]. Disregard of the patient's views and expressed wished can undermine realization of the aimed treatment outcomes [17]. Many causes have been considered for the patient dissatisfaction that may culminate in early discharge against medical advice, including little care for patient [18], feeling of recovery in patient [19], inappropriate treatment by employee [20], patient's prolonged stay in hospital [21], and hospital infection [22], which are more frequent in adults [23].Frequency and determinants of discharge against medical advice in different hospitals and hospital departments have been subject to extensive research in and outside the country, e.g. Vahdat [24], Asgari [25], Rangraz [26], and Soleimani et al [27] in Iran, and Lekas et al [28], Olufajo et al [29], Awashti et al [30], Rubio et al [31], Small et al [32], and William et al [33] in other countries. But, to the best of our knowledge, no study has yet been conducted in the form of pre- and post-reform comparison where the impact of an interventional healthcare program on discharge level in the periods before and after its implementation is compared. This study, attempts to fill the existing gap in the literature concerning the level of DAMA before and after introduction of the Healthcare Reform Program, by answering the question as 'how effective the implemented healthcare program was, as measured by the relative frequency of DAMA and its determinants over the two periods.

II. METHODOLOGY

This is an applied research conducted according to a descriptive-retrospective design. The statistical population included all the hospitalized patients in the selected hospitals of Mazandaran University of Medical Sciences (i.e. Bouali Hospital of Sari, Imam Khomeini Hospital of Behshahr, and Imam Hussein Hospital of Neka) during two half-yearly periods of 21-09-2013 to 21-03-2014and 21-09-2015 to 21-03-2016, before and after introduction of the HCTP. The research sample, using census sampling, consisted of 2630 patients who during the above mentioned periods, prior and subsequent to implementation of the Healthcare Reform Program, chose to leave the hospitals. The data gathering tool used in this study was the standard form of discharge on patient's own accord issued by the Ministry of Health and Medical Education for this purpose, in which patient profile and reasons for patient discharge on one's own accord are stated, to be completed by patient himself/herself or his/her attendants. The collected data from the forms were subsequently entered in SPSS23 software and analyzed using descriptive and inferential techniques (i.e. $\chi 2$ test) at significance level of 5 percent (p-value ≤ 0.05).

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III. RESULTS

In the six-month, pre- HCTP of the year 2013-2014, the total number of hospitalized patients was 29,935 of whom 1,349 patients (4.5 percent) were discharged of their own accord compared to the total number of hospitalized patients (31,161) in the six-month, post-Healthcare Reform period of the year 2015-2016 with 1,281 (4.11 percent) cases of discharge on patient's own accord. Bouali Educational and Treatment Center had the least number of discharges both before and after introduction of the Healthcare Reform Program (table 1).

Table 1: Frequency and Percentage of DAMA Before and After Introduction of HCTP in Selected Hospitals of Mazandaran

Name of hospital	Before reform			After reform		
	Number of admission	**Discharge frequency**	**Discharge percentage**	**Number of admission**	**Discharge frequency**	**Discharge percentage**
Imam Khomeini	10254	593	5.78	12222	461	3.77
Imam Hossein	6960	295	4.23	7478	383	5.12
Bouali	12721	461	3.62	11461	437	3.81
Total = 27; Test statistic = 0.475; P-value = 0.889						

DAMA in the selected hospitals did not differ significantly (p-value = 0.889) before and after introduction of the HCT.

In table 2, frequency and percentage of discharge on different grounds before and after introduction of the HCTP are presented. According to this table, the most frequent DAMA before reform was for 'other reasons' with 685 cases (50.8 percent of), whereas after reform, 'feeling of recovery' with 655 cases (51.1 percent) was the most frequent reason for discharge against medical advice. The least frequent reasons for DAMA before and after the HCT were 'lack of facilities and equipment' with 13 cases (1%) and 'economic and financial ground' with 8 cases (0.6 percent), respectively. In aggregate, there was no significant difference between the level of discharge before and after introduction of the Healthcare Reform (p-value = 0.996).

Table 2: Frequency and Percentage of DAMA on Different Grounds Before and After Introduction of the HCTP in Selected Hospitals of Mazandaran

Discharge reason	Before reform	After reform
Inappropriate treatment by employee	0	11 (0.9%)
Lack of facilities and equipment	13 (1%)	43 (3.4%)
Economic and financial ground	16 (1.2%)	8 (0.6%)
Feeling of recovery	578 (42.8%)	655 (51.1%)
Other reasons	685 (50.8%)	503 (39.3%)
Combined reasons	57 (4.2%)	61 (4.8%)
Total = 27; Test statistic = 0.374; p-value = 0.996		

Frequency and percentage of DAMA was also measured by some other variables, i.e. working shifts, year seasons, age groups, gender, and holyday and non-holyday, the results of which are presented in table 3. As is seen, the number of discharge against medical advice, both prior and subsequent to the healthcare reform, was greater in morning shift than in other shifts, but no significant difference in number of discharges was found between different working shifts of the selected hospitals before and after introduction of the Healthcare Reform Program (p-value =

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1). Nor there was a significant difference in frequency of discharge against medical advice by age groups (p = 1), gender (p = 0.57), or holydays (p = 0.73) before and after introduction of the HCTP.

Table 3: Frequency and Percentage of DAMA Before and After the

HCTP in Selected Hospitals by Some Conditional Variables

Conditional variables		Before reform	After reform	Aggregate	Test-statistic	p-value
Working shift	Morning	591 (43.8%)	578 (45.1%)	1169 (44.4%)	0.48	1.000
	Evening	515 (38.2%)	447 (34.9%)	962 (36.6%)		
	Night	243 (18%)	256 (20%)	499 (19%)		
Season	Autumn	672 (49.8%)	658 (51.4%)	1330 (50.6%)	0.16	1.000
	Winter	677 (50.2%)	623 (48.6%)	1300 (49.4%)		
Age group (in years)	< 5	269 (19.9%)	297 (23.2%)	566 (21.5%)	0.297	1.000
	5-15	93 (6.9%)	124 (9.7%)	217 (8.3%)		
	16-45	481 (35.6%)	400 (31.1%)	881 (33.5%)		
	46-65	266 (19.8%)	229 (17.9%)	495 (18.8)		
	> 65	240 (17.8%)	231 (18%)	471 (17.9%)		
Gender	Man	733 (54.3%)	738 (57.6%)	1471 (55.9%)	0.51	0.570
	Woman	616 (46.7%)	543 (42.4%)	1159 (46.1%)		
Days	Holiday	1123 (83.2%)	1064 (83.1%)	2187 (83.2%)	0.000	0.730
	Non-holiday	226 (16.8%)	217 (16.9%)	443 (16.8%)		

The emergency department, both before and after the HCTP, had by far the greatest number of DAMA (43.6%) among other sections, and Babies and Optic & ENT departments were the sections that experienced an increase in the number of early discharges after the reform (Tab 4).

Table 4: Frequency and Percentage of DAMA by Hospital Department Before and After Introduction of the HCTP

Hospital departments	**Before reform**	**After reform**	**Aggregate**
Babies; Internal Medicine & Surgery	208 (15.4%)	223 (17.3%)	431 (16.4%)
Surgery	260 (19.3%)	246 (19.1%)	506 (19.2%)
Internal Medicine	166 (12.3%)	157 (12.4%)	323 (12.3%)
Optic & ENT	24 (1.8%)	37 (2.8%)	61 (2.3%)
Gynecology and Obstetrics	44 (3.3%)	5 (0.4%)	49 (1.9%)
ICU, NICU, PICU, CCU	69 (5.1%)	43 (3.6%)	112 (4.3%)
Emergency	578 (42.8%)	570 (44.4%)	1148 (43.6%)
Test statistic = 3.187; P-value = 1.000			

IV. DISCUSSION

According to the results, frequency (percentage) of DAMA, in aggregate, had a slight decrease after introduction of the HCT, which was not statistically significant. That is to say, there was no significant difference between percentage of DAMA in the selected hospitals of Mazandaran University of Medical Sciences before and after implementation of the HCT. The difference between the level of DAMA based on the stated reasons in the selected hospitals before and after introduction of the HCT was not significant either. No comparative research has previously investigated the level of DAMA before and after introduction of the Healthcare Reform. However, a research in the U.S. [34] and another in Australia [35] reported a difference of 1.4% and 1.3% in the level of DAMA. The level of DAMA reported by the present research for the understudy hospitals was generally greater the reported discharge for other countries. In researches conducted in Kashan [11], Shiraz [36] and Khoy [13] the reported level of DAMA was 10.3%, 9%, and 6.83%, respectively. The reported level of DAMA in the present

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research implied the better state of the understudy hospitals relative to other hospitals in the country, which could be attributed to the level and availability of facilities and equipment in hospitals.

Our findings, in addition, indicated an increase in the level of DAMA subsequent to implementation of the HCTP for reasons of inappropriate treatment by employee, lack of facilities and equipment, patient's feeling of recovery, as well as combined reasons, whereas economic-financial reasons and other reasons were associated with a decrease in early discharge level. Further, there was no significant difference in the level of DAMA between the selected hospitals of Mazandaran University of Medical Sciences before and after the HCTP. As was noted, there has been no research on the level of discharge against medical advice before and after introduction of the HCT. But, in a research conducted in Kashan, the most and the least common cause of early discharge was the patient's feeling of recovery and lack of facilities and equipment, respectively [11]. Also in other studies conducted in hospital settings throughout the country, feeling of discovery was the most frequent reason for DAMA [13, 19]. The magnitude DAMA could also be influenced by the level of people's knowledge and information, as well as geographical position of treatment centers (e.g. risky and dangerous regions).

Furthermore, the number of DAMA in the morning shift was greater than that in the evening and night shifts, and this proportion after introduction of the HCTP remained almost the same, that is, the level of DAMA in the post-reform period did not significantly differ from that of HCTP. In prior research, the level of DAMA in various working shifts before and after introduction of HCT was not addressed. But a research conducted in Rafsanjan reported a DAMA of 42% for the night shift, 30.2% for the morning shift, and 27.8% for the evening shift [16]. The reported level of discharge in another research was 67.3% in night shift and 32% in morning and evening shifts combined [13]. It seems that the high level of DAMA during the morning shift in the selected hospitals was possibly due to postponement of discharges to the morning shifts.

As for the discharge frequency measure by age groups, the greatest number of discharge against medical advice was found in the age group 16-45 years, which had a decline after introduction of the HCT. There was no significant difference in percentage of DAMA between different age groups in the selected hospitals before and after introduction of the HCT. Comparison of DAMA in different age groups before and after introduction of the HCT is missing in prior research. However, in earlier studies conducted in Iran and abroad, young ages accounted for the highest level of DAMA [37, 38, and 39]. The high percentage in young ages could be ascribed to higher risk taking in the youth and subsistence purposes.The level of discharge in men was higher than in women, which is consistent with the findings of other researchers [21, 23]. The higher level of DAMA in men relative to women could be due to higher level of risk taking among men and higher concern for health among women.

According to the obtained statistics at the level of research environments, the departments Emergency and Gynecology and Obstetrics with 578 and 5 discharge cases accounted for respectively the greatest and the least number of DAMA in the pre-reform period. This level in the post-reform period remained almost the same with 570 discharge cases for Emergency and 5 discharge cases for department Gynecology and Obstetrics, accounting for the most and least discharge cases in the understudy hospitals. This is consistent with the results of other studies, reporting highest percentage of DAMA for department of emergency [19], which given its routinely crowded

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environment, as well as the shortage of equipment and personnel, and patient's high level of expectation for receiving treatment, is understandable.

V. CONCLUSION

Our research could find no evidence to support the impact of the Healthcare Reform on frequency of DAMA and the factors associated to it in the selected hospitals. In other words, no significant difference was found between level of DAMA and its components before and after introduction of the HCT. However, given the large-scale of this program in public hospitals throughout the country and the increasing number of patients, for adequate supply of the required facilities, equipment, and human resources, as well as enlargement of physical spaces of the treatment centers within the framework of this program, a more comprehensive and integrated planning is highly recommendable. In fine, given the novelty of the introduced topic in this study and the limited scope of the present research, to achieve more conclusive results, further in-depth studies in hospitals of other universities of the country with larger samples are undoubtedly required.

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REFERENCES

[1] Hajitabar Z, Nasiripour A, Jahani M. The Effect of Supplemental Health Insurance on Family Quality of Life. *JBUMS.* 2016; 18 (8) :67-72.
[2] Rezapoor A, Ebadifard Azar F, Abbasi broujeni P. Situation of resource allocation in Iranian,s health system. *jhosp.* 2013; 11 (4) :53-64.
[3] Esmaili A,Abbasi M. Moral enterprise-wide health system. *Journal of Bioethics.*2012;2(4):11-37.
[4] Bahrami M,Vatankhah S,Tayebi J,Toorani S.Design an evaluation of the health system to Iran.Sid helth information manegment.2011;8(3):285-305.
[5] Datobar H, Alijanpour S, Khafri S, Jahani M, Naderi R. Patient's Satisfaction of Emergency Department Affiliated Hospital of Babol University of Medical Sciences in 2013 -14. *JBUMS.* 2016; 18 (4) :56-62.
[6] Niazi S, Jahani M, mahmoodi G. Evaluation of Human Resources in the Hospitals Affiliated to Babol University of Medical Sciences and Social Security of Qaemshahr City based on the Standards of the Iranian Ministry of Health. *JBUMS.* 2016; 18 (2) :56-63
[7] Mohammad Nejad E, Jafari S, Mahmoodi M, Begjani J, Roghayyeh Ehsani S, Rabirad N. Hepatitis B virus antibody levels in high-risk health care workers. *Hepat Mon.* 2011;11(8):662-3.
[8] Rabirad N, Mohammad Nejad E, Hadizadeh MR, Begjan J, Ehsani SR. The Prevalence of Tb in HIV Patients and Risk Factor With Frequent Referral (Iran, 2009-10). *Iran Red Crescent Med J.* 2013 Jan;15(1):58-61.
[9] Mohammadnejad E, Jalaimanesh S, Mahmoodi M. Clinical syndrome in HIV/AIDS resulting in hospitalization based on the CD4 count. *J Mazandaran Univ Med Sci.* 2010; 19 (74) :70-7
[10] William N. Southern, Shadi Nahvi, Julia H. Arnsten, Increased Risk of Mortality and Readmission among Patients Discharged Against Medical Advice, *The American Journal of Medicine,* 2012; 125(6): 594–602.
[11] Rangraz Jeddi F, Rangraz jeddi M , Rezaeiimofrad M.Patients' Reasons for Discharge against Medical Advice in University Hospitals of Kashan University of Medical Sciences in 2008 . Hakim. 2010; 13 (1) :33-39. [In Persian]
[12] Asgari M, Arab M, Rahimi-e Foroushani A, Ebadi Fard-Azar F, Mousavi M. Surveying the Factors Affecting Patient`s Discharge against Medicine Advice from Emergency Ward of AmirAlam Treatment-Teaching Hospital in Tehran: 2012. *jhosp*. 2013; 12 (2) :19-28. [In Persian]

DOI: 10.37200/IJPR/V24I5/PR201747
Received: 09 Feb 2020 | Revised: 03 Mar 2020 | Accepted: 18 Mar 2020

[13] Mokhtari L, Korami Marekani A, Madadi M. Studing the rate and cause of being discharged against medical advice in inpatient and outpatient wards of shahid madani hospital in khoy city, 2014. *J Urmia Nurs Midwifery Fac.* 2016; 14 (2) :100-107. [In Persian]

[14] Ravanipour M, Tavasolnia S, Jahanpour F, Hoseini S. Appointment of important causes of discharge against medical advice in patients in Gachsaran Rajaii hospital in primary 6 months of 2013. *J Educ Ethics Nurs.* 2014; 3 (1) :1-7[In Persian].

[15] Asadi P, Zohrevandi B, Monsef Kasmaei V, Heidari Baten B. Discharge against Medical Advice in Emergency Department. *Iranian Journal of Emergency Medicine* (2015); 2(3): 110-115

[16] Soleimani M, Kazemi M, Vazirinejad R, Ostadebrahimi H, Auobipour N. Assessment of the incidence and reasons of discharge against medical advice in the hospitals of Rafsanjan University of Medical sciences in 2012-2013. chj. 2014; 8 (3) :64-72.

[17] Dirkovandmoghadam.Hashemian A.Sayehmiri K.Soheyli F. Factors affecting the level of satisfaction with medical care Using factor analysis in patients admitted to the emergency department Public hospitals in Ilam. *Journal of Medical Council of Islamic Republic of Iran.*2013;31(1):34-39.

[18] Plewnia. A, Bengel. J, Körner. M, Patient-centeredness and its impact on patient satisfaction and treatment outcomes in medical rehabilitation, Patient Education and Counseling, 2016; PP:1-25.

[19] Vahdat SH,Hesam S,Mehrabian F. Effective factors on patient discharge with own agreement. *Holist Nurs Midwifery.* 2010; 20 (2) :47-52.

[20] Awasthi. S , Pandey. Nitin, Rural background and low parental literacy associated with discharge against medical advice from a tertiary care government hospital in India, *Health Policy,* 2015; 95: 82–89.

[21] Youssef. A, Factors associated with discharge against medical advice in a Saudi teaching hospital , *Journal of Taibah University Medical Sciences,* 2012; 7(1):1–13.

[22] Small. M. R,. W, Evan. W, Kerr. Thomas,Hospitals as a 'risk environment': An ethno-epidemiological study of voluntary and involuntary discharge from hospital against medical advice among people who inject drugs, *Social Science & Medicine,* 105: Pages 59–66.

[23] Baiden. P1, den Dunnen W, Stewart SL, Discharge of adolescents with mental health problems against medical advice: *findings from adult mental health inpatient facilities across Ontario, Canada,* 2013,NCB.

[24] Vahdat sh,Hesam s,Mehrabian F.Effective factors on patient discharge with own agreement. *Holist Nurs Midwifery.* 2010; 20 (2) :47-52.

[25] Asgari M, Arab M, Rahimi-e Foroushani A, Ebadi Fard-Azar F, Mousavi M. Surveying the Factors Affecting Patient`s Discharge against Medicine Advice from Emergency Ward of AmirAlam Treatment-Teaching Hospital in Tehran: 2012. jhosp. 2013; 12 (2) :19-28

[26] Rangraz Jeddi F, Rangraz jeddi M, Rezaeiimofrad M.Patients' Reasons for Discharge against Medical Advice in University Hospitals of Kashan University of Medical Sciences in 2008 . Hakim. 2010; 13 (1) :33-39

[27] Soleimani M, Kazemi M, Vazirinejad R, Ostadebrahimi H, Auobipour N. Assessment of the incidence and reasons of discharge against medical advice in the hospitals of Rafsanjan University of Medical sciences in 2012-2013. chj. 2014; 8 (3) :64-72.

[28] Lekas H M . Alfandre D. Gordon P. Harwood K. Yin M T. The role of patient-provider interactions: *Using an accounts framework to explain hospital discharges against medical advice, Social Science & Medicine,* 2016; 156: 106–113.

[29] Olufajo .O. A , Brian K. Yorkgitis, M.Sc, Adil H. Haider, Whatever happens to trauma patients who leave against medical advice? , *The American Journal of Surgery,* 2016; 211 (4): 677–683.

[30] Awasthi. S , Pandey. Nitin, Rural background and low parental literacy associated with discharge against medical advice from a tertiary care government hospital in India, *Health Policy,* 2015; 95: 82–89.

[31] Rubio. M L, Holleck Kahle .C, Santos. R A, Discharges Against Medical Advice: *Considerations for the Hospitalist and the Patient, Hospital Medicine Clinics,* 2015; 4(3): 421–429 .

[32] Small. M. R,. W, Evan. W, Kerr. Thomas,Hospitals as a 'risk environment': An ethno-epidemiological study of voluntary and involuntary discharge from hospital against medical advice among people who inject drugs, *Social Science & Medicine,* 105: Pages 59–66.

[33] William N. Southern, Shadi Nahvi, Julia H. Arnsten, Increased Risk of Mortality and Readmission among Patients Discharged Against Medical Advice, *The American Journal of Medicine,* 2012; 125(6): 594–602.

[34] Ibrahim SA , Kwoh CK , Krishnan E .Factors Associated With Patients Who Leave Acute-Care Hospitals Against Medical Advice. *American Journal of Public Health* 2007; 97 (12): 2204-8.

[35] Yong T, Fok J, Hakendorf P, Ben-Tovim D, Thompson C, Li J. Characteristics and outcomes of discharges against medical advice among hospitalised patients. *Internal medicine journal* 2013;43(7):798-802.

DOI: 10.37200/IJPR/V24I5/PR201747
Received: 09 Feb 2020 | Revised: 03 Mar 2020 | Accepted: 18 Mar 2020

[36] Kavosi Z ,Hatam N, Hayati AH, Nemati J, Bayati M. Factors Affecting Discharge against Medical Advice in a Teaching Hospital in Shiraz, Iran. *Journal of Health Information Management* 2012;9(4):448-56.[persian]

[37] Glasgow JM, Vaughn-Sarrazin M, Kaboli PJ. Leaving against medical advice (AMA): risk of 30-day mortality and hospital readmission. *Journal of general internal medicine* 2010;25(9):926 -9.

[38] Kim H, Colantonio A, Bayley M, Dawson D. Discharge against medical advice after traumatic brain injury: Is intentional injury a predictor? *Journal of Trauma and Acute Care Surgery* 2011;71(5):1219-25.

[39] Shirani F, Jalili M, Asl-e-Soleimani H. Discharge against medical advice from emergency department: results from a tertiary care hospital in Tehran, Iran. *European Journal of emergency medicine* 2010;17(6):318-21. [persian]

DOI: 10.37200/IJPR/V24I5/PR201747
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