



Identifying Influential Factors of the Patient Discharge Process from ShafaTakestan Hospital in Qazvin City

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ABSTRACT

Background: The process of the patient discharge from the hospital is one of the most important processes that has been taken into consideration by managers in recent years. An efficient health system can only accomplish its duty to provide the health of the community by providing the right services and this system can be evaluated through its services. Therefore, the necessity of performing this research is to improve the quality of hospital services for patients and increasing patient satisfaction. This study has been aimed to identify the factors affecting the process of patient discharge.

Methods: This was a cross-sectional study conducted in a general hospital located in Takestan, Qazvin in 2019. The study population in the qualitative section of the study included those who were aware of the discharge process and had managerial positions in the hospital. The sampling process was continued until achieving data saturation. The required information was gathered through reviewing relevant literature, observing the discharge process, and conducting semi-structured interviews with managerial members and study experts.

Results: In the present study, the most important factors affecting the discharge process were lack of timely physician visit and issuance of the discharge order, delay in the approval of medication used by pharmacy officer, sending discharge files to hospital discharge unit, the patients' needs, diagnostic services (discharging with doctor's opinion), delays in registering nursing records, and undue secretarial performance in reviewing and recording reports in the hospital information system.

Conclusion: The results of the present study, in line with other researches, have shown that the importance of the discharge process on hospital performance is undeniable and this process needs continuous investigation, monitoring, and intervention.

Key words: Hospital discharge, Patient discharge, Hospital, Affecting factors

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Introduction

The health sector, as one of the most important social sectors of any country, has a decisive role in the health and wellbeing of the community. So, one of the goals of hospitals is to provide health for the community (1, 2). The hospital, with its specific responsibilities, is considered to be the most important health institution, and indeed a social medical organization as it provides full health care for the community (3). Patients' satisfaction is a vital indicator of the quality of the health care system because the patient is the centerpiece of the services and the main reason for building the hospital is the existence of the patients. On the other hand, in the competitive marketplace, institutions will be more successful in bringing service providers to the forefront of their program (4, 5). Hospitals account for more than 50 to 80 % of the costs of the Ministry of Health, and the hospitalization sector is the most expensive one. (6-8). Therefore, it is necessary to improve the quality of hospital services. In this regard, discharge service plays a significant role and is the most important part of the hospital evaluation. Therefore, this process is one of the most important steps in influencing hospital performance and is one of the managerial challenges in many hospitals (9).

The discharge process begins when the physician issues the discharge order and continues until the patient is discharged and the bed assigned to him is released. This process is the last stage of the patient's and his or her companions' contact with the hospital system, and the lengthy discharge process not only discourages them financially, mentally, and healthily, but also the government does not consider the high cost of citizen health care as cost-effective. Improper execution of discharge process can also cause patient and staff dissatisfaction, rush hour of unit discharge, an increase of uncertain cases, delay in discharge, and delays in the admission of new patients. On the other hand, identifying the factors influencing this process and promoting it is imperative for

several reasons such as reducing the patient's waiting time to leave the hospital, timely admission of new patients, determining the financial status of the cases, and increased patient and staff satisfaction (10). In a study conducted by Ajami, findings revealed that the most important factors in the delayed discharge process were delays in writing summaries by interns, lack of a hospital information network system, lack of guidance on staff discharge procedures, and lack of financial support for patients to pay their bills (1). In another study conducted by Ketabi, the study results indicated that the factors affecting the length of hospital stay were unnecessary activities or having no specific sequences. Patient's information about required documents or blood bank debt at discharge, inaccuracies in completing a patient's medical record, delay in writing a patient's medical record, lack of information, and insufficient patient's records to clear and delay payment for settlement (6). The results of the research conducted by Nejhad Jafari showed that human resources including physicians and residents had the most impact on the discharge process (5). In another study, results emphasized that important factors in the discharge delay process could be the inadequate communication between service providers pointed to the lack of a standard process in registering discharge orders, shortage of staff, and lack of understanding of the importance of the discharge process (11). Similarly, the most important delay factors in a study carried out by Karen Rask and Hessling's were found to be communication breakup between team members and lack of appropriate planning (12, 13). Thus, it can be concluded that the process of discharge is a common concern of hospital managers who need special attention and improvement (14). Despite the importance of the issue, this topic has rarely been surveyed in Iranian hospitals specifically in Qazvin Province. Furthermore, identification of influencing factors on the discharge time could be more precisely conducted through having a holistic, scientific approach like six sigma. This



study aims at identifying factors affecting the discharge process in Shafa hospital located in Takestan, Qazvin in 2019.

Materials and Methods

The qualitative research was applied based on the nature of the study in the summer of 2019 at Shafa Takestan Hospital. According to the understudied subject, the statistical population should have consisted of individuals who have a good command of the aristocracy, so the study of the population included hospital experts namely hospital chief, hospital manager, metron, clinical supervisor, educational supervisor, nurse, physician, discharge unit, accounting, and finance unit, medical documentation unit, insurance expert, pharmacy, health and education unit, assistant and secretary of inpatient sectors. The research setting was Shafa Takestan Hospital. The sample size is not taken into consideration since this study seeks to examine the views of individuals in the understudied field. Exclusion criteria were disinclination to participate in the study, being a part of emergency department medical personnel, and less than three months of work experience in hospitalized wards. In this study, considerations such as obtaining informed consent from research units and participants, the right to withdraw from the study at any time, and other ethical codes related to descriptive-analytical studies were observed. The data gathering tool is a researcher-made questionnaire that was designed based on direct observation of the researcher, reviewing internal and external literature of articles related to this field and opinions of process experts. Considering the questionnaire development process, the researcher first attends to the hospital and observes the discharge process for two weeks in the understudied hospitalized wards, and the whole discharge process with its activities consisting of patient visit and physician discharge order until delivery exit sheet to the hospitalized ward was examined. The factors affecting this process were extracted during the process of implementation, then studies on the factors affecting the process of

discharge were extracted from hospitals in Iran and the world by referring to reputable Persian information banks such as SID- Magiran- Irandoc- nlai.ir- daneshyar.net, etc as well as external databases such as Google Scholar- Science Direct- PubMed- Scopus- Medicine- Kmlc. com, etc. In addition to the identified issues plus the experts' recommendations, the researcher made a list of 55 primary factors plotted in Fish Bone Chart (Chart 1) and incorporated after completing surveys and consulting with the individuals. Experts in the field were categorized as 14 major agents and 43 final subcategories (Table 1).

The tool was formalized and content was validated by experts and participants. For face validity, the questionnaire was read and validated by members of the management panel including hospital chief, hospital manager, matron, and educational supervisor. To achieve this purpose, a questionnaire was given to several process-aware experts namely hospital chief, hospital manager, matron, clinical supervisor, educational supervisor, nurse, physician, discharge unit supervisor, fund manager, medical record officer, secretary, and the insurance officer. They were asked to comment on the quality of the items and the whole questionnaire and. In this way, the necessary corrections were made to ensure that all questions were adequately and uniformly understood. After this step, the questionnaire was completed with 33 questions.

The questionnaire was designed based on a five-point Likert scale ranging from very high to very low impact, with a score of 5 to 1. The higher score indicated the more important role of the agent in the discharge process. Potential scores alternated from 33 to 165. The questionnaire used consisted of two main sections with one open-ended question. The first part included demographic information including gender, organizational position, unit/department of work, and the second part contained questions that influenced factors in the discharge process in five areas including manpower, hospital environment, discharge process, services, and

management. At the end of the questionnaire, an open-ended question was also designed to identify other items that were effective in the discharge process but were not included in the questionnaire.

After receiving the ethical approval and presenting the reference to the hospital, information was collected by attending the units and departments. The researcher presented the questionnaire to 120 members of the management panel and experts of the discharge process by referring to the studied units in the mentioned hospital. After explaining the purpose of the research and answering their questions about the questionnaire and how to complete it, they were given ample opportunities to respond so that they could complete the questionnaire properly. Ultimately, 120 questionnaires were completed and returned. The ethical code of the project is IR.QUMS.REC.1397.007.

Results

Medical and administrative personnel were 120 people who participated in the study and were mostly female (75.8 %). The majority of participants were clinical nurses (48.4 %) and

physicians (17.5 %). Among all of the participants in the study, 40 people were in internal medicine, 15 in surgery, 14 in gynecology, 14 in neonatal, and 27 in hospital staff (Table 1).

Primary factors were identified based on direct observation of the researcher, review of internal and external literature and articles related to this area and process experts' views on the fishbone chart (chart 1) in six main groups including management, individuals, environment, process, services, equipment and facilities were included. These factors were categorized as 14 main factors and 43 final sub-factors after combining surveys and consulting with experts in the field (Table 2). The most important identified factors affecting the discharge process include lack of timely attendance of physicians to visit patients and issuance of discharge orders, delays in approval of medications by pharmacy personnel, the concurrence of sending discharge files to discharge unit, patients' need for diagnostic services (delayed on doctor's request), delays in registering nursing records and poor performance of the clerk in reviewing and recording HIS cases.

Table 1. Demographic information of medical and administrative personnel in Selected Hospital

Demographic variables		Frequency	Percentage(%)
Gender	male	29	24.2
	female	91	75.8
Inpatient ward	Internal	40	36.3
	Surgery	15	13.6
	Obstetrics and gynecology	14	12.7
	Children	14	12.7
Organizational post	Nurse	58	48.4
	Physician	21	17.5
	Hospital Management (Chief-Manager-Metron-Clinical Supervisor)	7	5.8
	Staff	34	28.3



Table 2. Main and subordinate factors affecting discharge process in hospitalized units of the Selected Hospital

Main factors	subordinate factors
Expect patients to receive needed services on the discharge day	Request diagnostic services to determine the patient's final status Attend counselors after office hours to provide counseling services Absence of a timely attendance by a physician Attending a physician in another hospital High workload of the nurse in busy hospital wards
Delay in sending discharge files from inpatient departments to the documentation and discharge unit	Submission of files by the Hospital Services Force Accumulation of discharge cases in the inpatient and outpatient departments of all departments before 12:30 noon to the discharge units
Payment of costs and types of patient insurance coverage	Not having enough money at the time of discharge Not having a bank card Patient's financial inability to settle Referral to the support unit Non-attendance at discharge unit
Delays in approval of medicines and supplies by the pharmacist	Request correction due to registration errors by the ward nurse Pharmacy bustle and timely handling of incoming messages Lack of sufficient attention by pharmacy staff to messages received from inpatient departments
Expect the patient to receive surgery	No surgeon in the operating room was on time Delays in the inpatient transfer to the operating room due to a crowded hospital ward
Problems and Disadvantages of patient's insurance documents	Lack of information about the patient or his / her compliance with the required insurance documents Absence of an insurance expert in the hospital to review and approve insurance documents (due to leave or mission)
Lack of staff (discharge personnel)	Lack of sufficient funding to make a contract with new personnel
Location of documentation and discharge units in the Hospital	The distance between the Document Unit and the Discharge Unit Lack of proper location for deployment of Document Unit and the Discharge in one place
Inadequate equipment in the inpatient unit	Insufficient funds to purchase equipment Lack of planning for optimal use of the computer system in the departments
Factors related to staffing	Personnel ability to control and record file information in HIS Lack of knowledge, awareness, and sensitivity of personnel to the importance of the discharge process Incomplete completion of documents and records by physicians and nurses Misinterpretation by the nurse or clerk of the instructions recorded in the file while examining it and recording the report or the information in the HIS Nurse's inability to communicate verbally with the patient for education (lack of knowledge about the patient's mother tongue) Patient-related factors (age, gender, level of personal information, etc) in educational attainment Poor coordination between nurse and pharmacy officer Poor coordination between the clerk with the documentation units and discharge after filing

**Main factors****subordinate factors**

Lack of standards specified time for discharge

Failure to specify waiting time for the discharge process

Managing and monitoring the process

Lack of supervision of personnel performance during process implementation

Lack of punishment and proper staff encouragement

Lack of feedback to improve performance

Delay in the patient discharge due to patient attendance function

Lack of understanding of patient discharge procedures After submitting the file from the Inpatient Department to the Document Unit

Frequently asked questions by patient attendance on the discharge unit

No patient attendance at the discharge unit

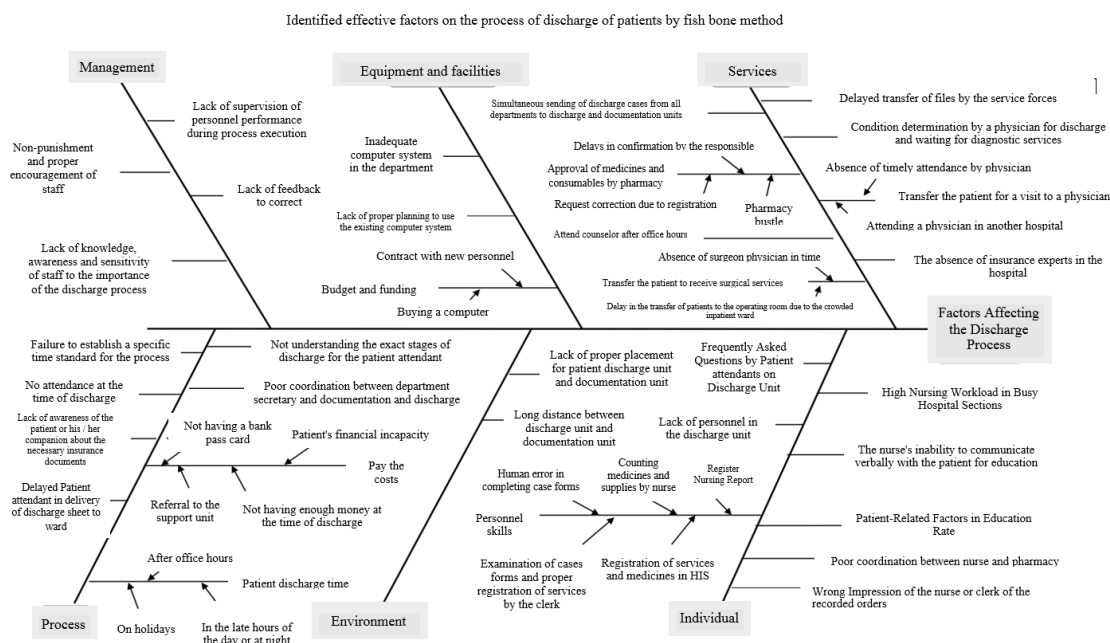
Delay in delivering the discharge sheet to the relevant department

Time to issue a discharge order

Discharge on holiday

Discharge in the evening (after office hours)

Discharge at the end of the day or night

**Chart 1.** Identified effective factors on the process of discharge of the patients by the fishbone method**Discussion**

The purpose of this study was to identify the factors affecting delays in the discharge of patients in Shafa Hospital in Takestan. The results of the patient discharge process as well as the factors affecting the delay in discharge indicated problems of this process. These similar results have been researched according to the findings of many internal and external studies of the discharge process that have assessed the status of

this discharge process and need further evaluation. The patient discharge process is an activity that is common to all types of hospitals and is one of the most important steps affecting hospital performance and is considered as one of the management challenges in many hospitals (9, 15). As studies have shown, paying attention to the discharge process is considered to be one of the most common problems in hospitals, and as it is one of the most influential steps in patient



satisfaction, taking it into account has been more important than ever (10). This highlights the necessity of the patient discharge process and its importance in the evaluation of hospitals as its most vital part (9). The results of this study showed that the most important factors identified in the discharge process include lack of timely physician visit and issuance of the discharge order, delay in the approval of medications by pharmacy personnel, concurrence of sending discharge files to discharge unit, patients' need for diagnostic services (physician-assisted discharge), delaying registration of nursing records, and undeclared secretary performance in reviewing and recording HIS records. Concerning the factor of the timely absence of physicians in hospital wards, similar results were found in most studies such as Ajami (16), Jaafari, and Khatibi (10), Ebrahimipour (17), Ajami (18), Nasiri Pour (19), Ketabi (20), Sunil (21), Alan (22), Shahnava (23) and Sadeghi (9) and there was a direct and significant relationship between this factor and delay in discharge. It should be noted that the discharge process initiated by the physician and any kinds of delays in the physician's presence in the ward ultimately affects the entire discharge process. Studies show that delay in a patient's visit by a physician can be explained by various factors such as patient waiting time, total discharge time, unoccupied beds, higher hospital and patient costs, and patient satisfaction.

The delay factor in the approval of the drugs used by the pharmacist in this study which was effective in the discharge process was similar to the results obtained by Nejad Jafari and Khatibi's research, Reddy and Atashgar (11, 24). The delay factor was cited as an effective factor among the most human resources and their lack of understanding of the status of the process. In their study, Nejad Jaafari and Khatibi concluded that human resources including physicians and drug managers had the greatest impact on the disruption of the order of the discharge process, thus it should be emphasized that human resources are of utmost importance to improve this process (10, 11, 24). The results of this study

indicated that this factor in general needs more supervision and management. Since such confirmation is not made, the documentation unit and the discharge unit cannot handle the discharge file which affects the discharge process. It reflects the low sensitivity of the personnel of this unit to the discharge process in the hospital performance, which can be improved by the intervention. On the other hand, the hustle and bustle of the pharmacy unit are one of the issues that affect the activity of a responsible person and should be addressed by hospital managers.

The results of the present study showed that the relationship between the performance and the skill of the inpatient's ward in reviewing and recording the cases in the hospital information system and the patient discharge process was statistically significant because the inaccuracies in the examination of the registry data based on the relevant checklists and incomplete and incorrect recording of information in the hospital information system cause the file to be re-routed to the ward and cause hospital deductions. Besides, it is a wasting of time leading to the patient's waiting time in the discharge process to be prolonged and dissatisfying. Since there were no other factors mentioned in this study, comparability was not possible but in the present study, this factor was important and was considered to be one of the shortcomings in most of the sections. This can be improved by enhancing the secretary's ability to enhance his/her performance in reviewing and recording information files as well as by sensitizing the importance of the discharge process and accelerating the performance of other departments involved in the process, including the DOC, and setting the stage for process improvement.

In addition to the factors mentioned, other contributing factors such as patients' financial difficulty and lack of knowledge of the patient or his/her companion about the insurance documents required for discharge were identified in this study which influenced the discharge process. The results of the present study are consistent

with the results of Ajami (16), Ebrahimipour (17), Ajami (18), Nasiri Pour (19), Ketabi (20), Samadbeek (25), Sunil (21) and Mahta (26). One of the advantages of identifying the causes of disruption in the discharge process is that it can be prevented by providing strategies that can facilitate the process such as improving bed management and hospital management. Therefore, it is important to identify the factors affecting the discharge process because hospital beds are the most important hospital resources and the length of patients' stay in the hospital helps in optimal use of beds. Based on the results of the present study, there was a positive and significant relationship between the effect of discharge unit and timely handling of discharge records in hospital on discharge process which reflects the attention paid to this factor. To interpret this factor, it can be noted that simultaneous dispatch of clearance files from all departments at the same time around noon resulted in the accumulation of files in the discharge unit which resulted in disturbance of the responsible unit. So, it can be improved by specifying a precise timetable for submitting files and sending multiple completed files from the departments to the discharge unit instead of simultaneously submitting all the files as well as direct interference by the clerk in transferring the files and causing the delay in the process. The files were cleared in the unit and improved patient waiting for companions queue for final settlement. The results of the present study, which is in line with other researches, have shown that the importance of the discharge process on hospital performance is unquestionable and this process needs continuous investigation, monitoring, and intervention.

Conclusion

It is concluded that improving the discharge process needs further consideration by hospital management. Such an improvement will not be achieved unless it is continuously monitored as a key process in the hospital and provide the necessary conditions for implementing the proposed solutions. It is suggested to check

factors that are involved in each of the discharge processes which make discharge faster with better management. To improve this process, evaluating the performance of employees using practical criteria could be beneficial. Besides, hospital management should also consider patients' satisfaction with the services they receive, especially the discharge process as well as staff views on how to improve this process.

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Conflict of interests

The authors declared no conflict of interests.

Authors' Contributions

Rafiei S and Mohebbifar R designed research; Rahmani P collected and analyzed data; Rahmani P wrote the manuscript. All authors read and approved the final manuscript.

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