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RESEARCH ARTICLE

EVALUATION OF PATIENT DISCHARGE INFORMATION BETWEEN WHAT IS SAID AND WHAT IS WRITTEN

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ABSTRACT

BACKGROUND:

A patient's discharge from the hospital is considered a crucial transition. Appropriate patient education about their condition and its treatment can reduce adverse events and improve health outcomes.

OBJECTIVE:

Identifying high-risk patients for adverse events after hospital discharge and evaluating patient discharge information to ensure patients are safely discharged.

METHOD:

Between January 2019 and February 2020, a retrospective cross-sectional study examined hospital discharge notes. A random sample of 600 hospital discharges was audited, and a convenience sample of 150 patients was used to gauge patient satisfaction.

RESULTS:

The patient's age, medical history, the presence of a physical limitation, and the presence of a surgical wound were all significantly related to readmission at $p < .05$. In addition, there was a significant correlation between emergency room visits, medical history, and physical or mental impairment $p< .05$. Lastly, the presence of complications was associated with physical restriction and surgical wound $p < .05$. The findings revealed that 84.6% (n = 127) of patients did not appear to pay attention to the information on their discharge summaries, but they kept them as a reminder of their follow-up appointments. There were medical abbreviations in all of the discharge summaries (n = 150). Almost all discharge summaries contained at least 70% of the required information (diagnosis, past history, allergies, procedures, laboratory results, medications, and appointments). In contrast, the patient's level of satisfaction was lowest with respect to crucial aspects such as warning signs, recommendations, and educational materials. They were neither verbally nor in writing summarized.

CONCLUSION:

Patient-specific discharge information and summaries should be provided. It should be suitable for the patient's physical, educational, and psychological conditions. Important parts of post-discharge instructions should be provided in a straightforward, written format to improve health outcomes and reduce adverse events.

KEYWORDS

discharge summary, discharge planning, discharge information, readmission to hospital, patient's satisfaction, patient's self-care

INTRODUCTION

The discharge of patients from hospitals is one of the greatest challenges in health care settings, as it represents a crucial transition for patients [1]. Discharge planning is the creation of a patient-centered plan for each hospital-bound patient [2]. Discharge information and coordination for integrated health care following discharge are the primary components of discharge planning and should be tailored to the patient's health needs [2]. Information regarding a patient's condition, treatment, and follow-up provided at discharge can reduce readmissions and improve health outcomes. This discharge information improves the patient's self-care activities regarding a healthy lifestyle, medications, and wound care to reduce mortality and morbidity risks [2].

When discharge instructions are delivered in a manner that is inappropriate for the patient's physical, educational, and psychological differences, many patients find it difficult to understand and follow them [3]. This is of particular concern for older patients with low literacy skills, chronic diseases, and postoperative status, for whom medication adherence, lifestyle changes, and follow-up are essential [3,4].

Considering the discharge information as a whole, the discharge summary is the most crucial element of this circle. The discharge summary is the most prevalent method for documenting a patient's diagnostic findings, medical management, and follow-up appointments [2]. Effective and comprehensive discharge summaries reduce adverse drug reactions, unplanned readmission, complications, and mortality, and increase patient and provider satisfaction [2]. Conversely, an incomplete discharge summary may result in re-hospitalization, unwelcome events, and dissatisfied patients [2,5].

Numerous studies have examined the caliber of discharge summaries. They evaluated three pertinent areas: [1] content, [2] organization, and (3) readability or comprehension. They discovered that the discharge summaries were disorganized, contained poor information, and were written at a sixth-grade level or higher; therefore, they required revision [13–16].

There are three primary medical health sectors in Jordan: government, private, and military. The policies of each area determine the format of the discharge summary or information. In all cases, these summaries adhere to a specific format that is unique to each one; the patient will receive the information upon discharge and can fill it out by hand or have it printed by a computer.

There are no official, unified guidelines for discharge planning and information in Jordan, nor for the writing of discharge summaries. In addition, no research has been conducted to evaluate or enhance hospital discharge information and summaries. Existing papers contained statistics and periodic reviews of quality programs, but they did not reveal their flaws or underlying development mechanism. Consequently, this study will be the first in Jordan to evaluate hospital discharge information and summaries in relation to the patient's level of satisfaction. This study's findings may encourage health institutions and care providers to adopt the best evidence-based practice for hospital discharge summaries and information.

The objective of this study was to identify patients at high risk for adverse events following hospital discharge and to evaluate patient discharge information to ensure that patients are discharged safely.

METHODS

RESEARCH DESIGN

This retrospective cross-sectional study examined the discharges and summaries generated at Jordan University Hospital (JUH) from January 2019 to February 2020. Patients and discharge summaries were selected within a year of data collection so that the patient could recollect and understand what transpired. This period was chosen to avoid the widespread effects of the Corona pandemic on the medical industry.

SETTING

This research was conducted at JUH in Amman, Jordan's capital. It is the first teaching hospital in Jordan with a 670-bed capacity [11]. This hospital has received numerous international accreditations. JUH's mission is to promote quality management and scientific investigation. This hospital serves all segments of society from various governorates in the Kingdom. It houses all medical specialties and conducts numerous major and minor surgical procedures. It is the destination for all patients with different health insurance plans.

SAMPLE AND SAMPLING METHOD

The study's target population comprised all hospitalized and discharged Jordanian patients. The accessible population consisted of all JUH patients who were admitted and discharged. The first sample in this study was comprised of 600 discharge notes was selected for auditing between and discharge (10 patients were randomly selected for each specialist doctor, knowing that the number of specialists was 60 from various medical specialties). The inclusion criteria included patients admitted to JUH who were Jordanians. Both males and females had a minimum age of 18 years

The second sample was quantitative interviews and questionnaires which were conducted with 150 patients admitted and discharged between January 2019 and February 2020. Patients admitted to JUH who spoke and read Arabic were included in the inclusion criteria. Both males and females had a minimum age of 18 years. Patients with cognitive impairment, dementia, or head trauma were excluded, as were admissions for ongoing routine day procedures, such as chemotherapy, hemodialysis, and wound dressing.

INSTRUMENTS

Researchers divided the auditing and follow-up sheet of discharges into two sections: (1) demographic characteristics and admission data; and (2) follow-up data (if patient readmitted or visited emergency within 30 days of discharge or had complication reported in a clinic appointments).

The Patient Continuity of Care Questionnaire (PCCQ) used was the initial version of the instrument, consisting of 41 items rated on a 5-point Likert scale. Two distinct sections of the questionnaire addressed aspects of care prior to discharge (27 items) and after discharge (14 items). It included perceptions of the following six subscales: (1) relationships with care providers during hospitalization; (2) information transfer and exchange with patients; (3) relationships with care providers in the community; (4) management of written discharge forms; (5) management of appointments and follow-up; and (6) management of communication among providers. The means of subscale scores are reported, but no total score is provided. Using Cronbach alpha coefficients, scales' reliability and internal consistency were evaluated. The subscale Cronbach alpha coefficients for the revised instrument were acceptable and ranged between 0.78 and 0.83 [17,18].The questionnaire was translated into Arabic, and a pilot study was conducted to determine whether or not this questionnaire can be used in our community. Cronbach's alpha of the PCCQ scale in this study was found to be 0.86.

ETHICAL CONSIDERATIONS

Prior to data collection, the Institutional Review Board (IRB) at JUH granted ethical approval. Participants were given a sheet of information detailing the purpose of the study and their rights. Participants were also informed that their information would be kept confidential and used solely for research.

DATA COLLECTION PROCEDURE

We utilized the PCCQ to investigate the patients' satisfaction and experiences with care prior to and after discharge. The researchers interviewed them during follow-up appointments in outpatient clinics.

DATA ANALYSIS

Version 24 of the Statistical Package for the Social Sciences (SPSS) was used to enter and analyze the data. The collected data were filtered and examined for consistency and completeness. The characteristics of the sample were analyzed using descriptive statistics. The Chi square statistic was used to determine the relationships between variables. A t-test was utilized to examine the differences.

RESULTS

REVISED AND FOLLOWED UP PATIENT DISCHARGES

The outcomes of our review of the discharge summaries of 600 patients are shown in Table 1. The discovery revealed that 23.5% (n=141) of the patients are elderly. More than 52% (n=316) of patients had a medical history. 87.6% (n=526) of patients exhibit the prevalent behavior of taking at least one type of medication after discharge. In addition, almost half of patients were discharged with surgical wounds (47.5%; n=285).

A contingency table to show the relationship between follow up variables and demographic variables is shown in Table 2.

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF REVISED DISCHARGES

Variable	n	%
Age		
18-64 years	459	76.5
≥ 65 years	141	23.5
Had medical history		
No	284	47.3
Yes	316	52.7
Had physical limitation		
No	565	94.2
Yes	35	5.8
Had mental & cognitive impairment		
No	587	97.8
Yes	13	2.2
Had previous admissions		
No	156	26
Yes	444	74
Number of medications after discharge		
Zero medication	74	12.3
1-3 types	294	49
≥ 4 types	232	38.7
Had high alert medication after discharge		
No	483	80.5
Yes	117	19.5
Had surgical wound after discharge		
No	315	52.5
Yes	285	47.5
Readmitted within 30 days after discharge		
No	541	90.2
Yes	59	9.8
Visited emergency within 30 days after discharge		
No	547	91.2
Yes	53	8.8
Had complication reported in a clinic appointment		
No	527	87.8
Yes	73	12.2

TABLE 2: CONTINGENCY TABLE

Demographic characters	Follow up variables					
	Readmitted within 30 days		Visited emergency within 30 days		Had complication reported in a clinic appointment	
	No	Yes	No	Yes	No	Yes
Age						
18-64 years	422	37	423	36	406	53
≥ 65 years	119	22	124	17	121	20
Had medical history						
No	270	14	270	14	251	33
Yes	271	45	277	39	276	40
Had physical limitation						
No	518	47	523	42	503	62
Yes	23	12	24	11	24	11
Had mental & cognitive impairment						
No	529	58	538	49	516	71
Yes	12	1	9	4	11	2
Had high alert medication						
No	436	47	444	39	422	61
Yes	105	12	103	14	105	12
Had surgical wound						
No	275	40	283	32	292	23
Yes	266	19	264	21	235	50

The findings revealed that there was a significant relationship between readmission within 30 days after discharge and the patient' age X2(1) =6.92 p=.009, medical history X2(1) =14.6, p=.000, presence of physical limitation X2(1) = 25, p=.000, and presence of a surgical wound X2(1) =6.14, p=.013.

The finding revealed that there was a significant relationship between visiting the emergency department within 30 days after discharge and medical history X2(1) =10.2, p=.001, presence of physical limitation X2(1)=23.5, p<.001, presence of mental & cognitive impairment X2(1) =7.9, p =.005.

Finally, the findings revealed that there was a significant relationship between having complications which reported during clinic appointments, such as wound infection and physical limitation X2(1) =12.9, p<.001, and the presence of surgical wound X2(1) =14.6, p<.001.

PATIENT SATISFACTION AND EXPERIENCE

We conducted interviews with 150 patients and compared what they were told about their condition to what was written in their discharge summaries. Socio-demographic characteristics of patients are shown in Table 3. According to the findings 58.7% (n=88) of patients only completed a secondary education. Two-thirds of the patients had comorbid conditions (hypertension, diabetes, heart disease, chronic kidney disease, and chronic obstructive pulmonary disease) 61.3% (n=92). More than half of patients 66% (n=99) received ≥ four types of medication after discharge.

TABLE 3: DEMOGRAPHIC CHARACTERISTICS OF PATIENTS

Variable	n	%
Age		
18-64 years	121	80.7
≥ 65 years	29	19.3
Gender		
Male	58	38.7
Female	92	61.3
Place of living		
North of Jordan	70	46.7
Middle of Jordan	73	48.7
South of Jordan	7	4.6
Activities of daily living		
Self-care	113	75.3
Need help & assistance	37	24.7
Level of education		
At least secondary	88	58.7
Diploma or higher	62	41.3
Number of comorbid disease		
No comorbid disease	58	38.7
≥ 1 of comorbid disease	92	61.3
Number of medications before admission		
Zero medication	31	20.7
1-3 types of medications	54	36.0
≥ 4 types of medication	65	43.3
Number of medications after admission		
Zero medication	2	1.3
1-3 types of medications	49	32.7
≥ 4 types of medication	99	66.0
Receiving medical care out of JUH		
No	138	92.0
Yes	12	8.0

The PCCQ was developed to evaluate patient perceptions and experiences with various aspects of care before and after hospital discharge. The PCCQ scale is comprised of 41 items. The responses ("strongly agree" and "somewhat agree") were deemed extremely satisfactory, whereas the responses ("strongly disagree" and "somewhat disagree") were deemed unsatisfactory. Unhappiness with these aspects of their experience is likely to leave them with the impression that they lack the knowledge and resources to effectively manage their condition. According to Table (4), patients were least satisfied with information regarding urgent and non-urgent symptoms and how to manage them. Also, patients were less likely to be satisfied with medication, diet, and physical activity information.

TABLE (4): PATIENTS' SATISFACTION WITH THE ASPECTS OF CARE PRIOR TO AND AFTER DISCHARGE

Subscale / item	n	%
Relationships in Hospital		
Item 17- Providers understood my expectations/beliefs/preferences	111	74
Item 19- Had confidence in my providers	129	86
Item 20- Satisfied with information from my providers	110	73.3
Item 21- Satisfied with emotional support from my providers	110	73.3

Item 22- Satisfied with opportunity for questions with providers	126	84
Item 27- Felt adequately prepared for discharge	140	93.3
Information Transfer		
Item 1- Provided with clear information on my diagnosis	125	83.3
Item 2- Provided with clear information on my prognosis	126	84
Item 3- Told about non-urgent symptoms and how to cope with them	74	49.3
Item 4- Given information on urgent symptoms and who to contact	78	52
Item 5- Informed of follow-up tests that are required	65	43.3
Item 6- Given information on my medications	23	15.3
Item 7- Given information on healthy eating	51	34
Item 8- Given information on physical activity & restrictions	66	44
Item 16- My family or close friends had the necessary information to help me	39	26
Management of Follow-up		
Item 10- Given information on follow-up appointments	149	99.3
Management of Forms		
Item 39- Forms were all completed	135	90

Calculating the total mean PCCQ for each patient yields a mean of 3.49 and a standard deviation of 0.50. Using the t-test, we compared the total mean on the PCCQ for each patient and the mean of each PCCQ item with demographic information to determine the differences between them. The mean score of patients with at least a secondary education and those with at least a diploma did not differ significantly. There were no statistically significant differences between the mean score of patients with a disease history and those who were disease-free. There were no statistically significant differences between the mean score of patients with at least one co-morbid disease and those without any. There were no statistically significant differences between the mean score of patients with physical impairment and those without impairment. There were no significant differences in mean score between patients who provided their own care and those who required family assistance. There were no significant differences in the mean score between patients who were discharged with at least three types of medications and those who were discharged with four types of medications or more.

The findings revealed that 84.6% (n=127) of patients did not appear to pay attention to what was written on their discharge summaries but kept them as a reminder of follow-up appointments. One hundred percent of the discharge summaries (n=150) contained medical abbreviations. Almost all discharge summaries included 70% of the basic data (primary diagnosis, secondary diagnosis, past medical history, past surgical history, allergy, procedures, laboratory results, name of medications after discharge, and follow-up appointments). In contrast, more than 4% of patients did not include vital information such as alarming signs and symptoms, recommendations (diet, wound, or work), nursing education, and educational materials, and they were not verbally informed about these points. According to patient feedback, 90% (n=135) of patients recommended filling out this section in simple language, especially for alarming signs and symptoms, recommendations (diet, wound, or work), nursing education, and educational materials.

Following discharge, 14.6% (n=22) of these patients visited the emergency department, according to follow-up and post-discharge experiences. Additionally, 6.6% (n=10) of patients called or attempted to call a doctor to inquire about their health. Finally, 1.3% (n=2) of patients arrived at the clinics prior to their scheduled appointment to inquire about their condition.

DISCUSSION

REVISED AND FOLLOW UP PATIENT'S DISCHARGES

The current findings revealed that there was a significant association between unwanted events (readmission, emergency room visits, and reporting complications during clinic appointments) that can occur within 30 days after discharge and the patient's age, medical history (diabetes, hypertension, liver disease, and heart disease), presence of physical limitation (hearing or vision impairment), presence of mental and cognitive impairment (dementia, Alzheimer's disease), and presence of physical limitation (hearing or vision impairment).

These unanticipated and unplanned occurrences are one of the obstacles that cause additional stress and a substantial waste of medical resources. However, some of these undesirable events can be predicted and prevented; prior to discharge, it is necessary to identify patients at high risk (older age, physical or mental impairment) to reduce the likelihood of these events [10]. These findings highlight the need to provide information based on the patient's needs and help us to concentrate on specific needs, such as aging, health issues, physical or mental challenges, and surgical wounds [12,13]. According to the findings of an observational and retrospective auditing study, the discharge plan should be based on the patient's needs [9]. A systematic review found that a comprehensive discharge plan reduced the length of stay and the risk of hospital readmission, particularly for older patients with medical conditions [10]. Another systematic review of the efficacy of discharge planning and transitional care interventions revealed that discharge planning reduces the elderly readmission rate [11]. In conclusion, these findings were consistent with an earlier qualitative study aimed at enhancing patients' ability to recognize postoperative complications that can occur after hospital discharge [12].

PATIENT SATISFACTION WITH THE ASPECTS OF CARE PRIOR TO AND AFTER DISCHARGE

Patients were satisfied with the information they received regarding their diagnosis, prognosis, and follow-up appointments, according to the current study. The patients were least pleased with the information regarding alarming symptoms, lifestyle modification, and medication. Numerous pieces of information were absent or insufficient, and the patient was not provided with them verbally or in writing prior to or after discharge. Similar to the findings of previous studies, which indicated that clear explanations may increase patient satisfaction with the discharge process, these findings indicated that clear explanations may increase patient satisfaction with the discharge process. Continual education, preparation for discharge, and post-discharge monitoring may contribute to enhancing patient satisfaction and reducing adverse effects [6,7,19,20].

The current study determined that the discharge summaries provided to 150 patients included basic information such as demographics (primary diagnosis, secondary diagnosis, past medical history, past surgical history, allergy, procedures, laboratory results, name of medications after discharge, and follow up appointments). These summaries were written in English and included medical acronyms. On the other hand, more than 4% of patients lacked important information such as alarming signs and symptoms, recommendations (diet, wound, or work), nursing education, and educational materials, and were not verbally informed about these points. These results are also consistent with the findings of numerous studies that found discharge summaries to be disorganized, deficient in content, and written above the sixth grade reading level [13,21, 24]. There should be 13 elements in discharge summaries (patient details, admission and discharge diagnoses, investigations, laboratory and imaging tests, surgical procedures, hospital course, allergies, adverse reactions, discharge medications, stopped and changed medications, pending laboratory tests, medical problems at discharge, and follow-up details) [15,16,23, 25].

Patients visited the emergency department, attempted to call a doctor to inquire about their health condition, or came to the clinics before their scheduled appointments, according to the current findings of follow-up after discharge. These practices are all concerning for patients and their families. This may have occurred as a result of insufficient or improperly presented information. This may have occurred due to a failure to consider the patient's circumstances (physical and psychological conditions); therefore, we prefer to document this information or inform the patient's family. Consistent with a prospective observational study which reported that complete and readable written discharge instructions were associated with a reduction in the number of telephone calls and readmissions, these results indicated that complete and readable written discharge instructions were associated with a reduction in the number of telephone calls and readmissions [21, 26, 27].

THE STUDY IMPLICATION

According to the knowledge of the researchers, this was the first study to evaluate hospital discharge information and summaries and link them to the patient's satisfaction level in Jordan. This study contributes to our understanding of the significant effects of discharge information and discharge summaries on patients. In order to improve the discharge information and summary in Jordanian hospitals, it is necessary to establish unified guidelines based on evidence-based medical practice. Effective person-centered communication and the transfer of vital

information to patients based on their needs should be taught to health care professionals. Changes in practice should begin with physicians, nurses, and pharmacists in order to improve their coordination in providing patients with effective and useful information. The nursing evaluation and educational interventions should be incorporated into the discharge procedure and discharge summary. Complete and straightforward discharge papers are necessary to encourage patients to read these vital documents. Using a well-designed information technology solution may enhance communication with medical professionals (mobile applications).

LIMITATIONS

Due to the fact that the research was only carried out at one location, its findings cannot be generalized.

RECOMMENDATIONS

To generalize the findings, additional research should be conducted in other areas. Create an official guideline for discharge summaries in all Jordanian hospitals in order to enhance the quality of the discharge process, discharge information, and discharge summary.

CONCLUSION

The current study found that unwanted and unplanned events could be predicted and prevented; it is necessary to identify patients at high risk (older age, physical or mental impairment) prior to discharge to reduce the likelihood of these occurrences. Accordingly, the discharge information and summaries should be tailored to the needs of the patients. It should be suitable for the patients' physical, educational, and psychological conditions. Important information and instructions for post-discharge care should be provided in a simple, written language in order to improve health outcomes, increase patient satisfaction, and reduce the number of adverse events.

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