Minimum data set for electronic health card of schizophrenia

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ABSTRACT

Purpose: Having a clinical information system is a good solution for monitoring medical problems. This system is designed to improve the speed and accuracy of data management. The goal is to replace medical records with a clinical information system to support storing, processing and distributing data in all the sections of a healthcare center. The purpose of this research was to determine the minimum data that is needed in the schizophrenia electronic health card.

Materials and Methods: A number of 40 psychiatrists were surveyed in 2014. The information was gathered by a questionnaire and interviews. All data were analyzed using descriptive statistics.

Results: According to the results table and observed frequencies, from the 29 items had been questioned. All elements with the consent of more than 75% as key elements in electronic health card of schizophrenia were approved.

Conclusion: An electronic health card for schizophrenic patients can help the treatment team in providing effective healthcare and better medical records for the hospital admission staff to better manage patient information. It also reduces the problems of a patient's family members and relative's and simplifies the treatment process for schizophrenics.

Keywords: health electronic card; information technology; minimum data set; schizophrenia; Iran.

INTRODUCTION

Since the advent of computers and networking, the use of information technology for health services has been evolving at a relatively slow pace. In comparison with other industries such as banking, manufacturing and airlines, information technology (IT) for health services has been slow to catch up with the increasing demand and need for distributed sharing of health-related information.[1] The flow of patient's health care while he/she is under observation is often not captured or integrated into the workflow of the underlying health information system.[2] The advent of smart card technology has paved the way for an individual to carry personal information in the form of a credit-card sized device. With the advantage of being robust and portable, smart cards represent a technology that can be employed in health care to provide distributed storage of patient's medical records.[3] A smart card is a credit-card sized plastic card with an embedded computer chip that can be memory or also include a microprocessor.[4] A microprocessor chip can add, delete and otherwise manipulate information in its memory and hence offer complex data security schemes.[5]

Smart cards have been in use as health cards for more than 10 years.[6]

In the medical sector, it contains information about the patient: identification, emergency data (allergies, blood type, etc.), vaccination, drugs used, and the general medical record.[7] Different parts of the data stored on the card can be protected with different levels of access control. These features make smart cards very useful for the medical domain.[8] Schizophrenia is a progressing mental disorder. About 1% of the world's population are suffering from it. Statistics show that more than half of mental institutes' capacity is occupied by schizophrenic cases.[9] About 1% of the population is affected by schizophrenia. The illness tends to develop between the ages of 16 and 30 years, and mostly persists throughout the patient's lifetime.[10] patients with schizophrenia occupy about 25% of all psychiatric hospital beds[1] and represent 50% of admissions to hospital.[11] According to the World Health Organization report seven people in every 1000 people aged from 15 to 35 years old have schizophrenia. More than 50% of the schizophrenia cases do not receive the required attention. Furthermore, 90% of the schizophrenia cases are in developing countries.[12] Because of their disorders, these patients are not able to give their medical information in time of emergency, and in most cases the patients' family members and relatives do not know the vital and required information.

The purpose of this paper was to determine the required electronic health card's data in a way that contains the information needed by the medical team to quickly access the precise personal and medical information and eliminate some problems through the process of treatment.

MATERIALS AND METHODS

This survey study was conducted in two psychiatric hospitals in Tehran in 2014. In the first stage a comparative study was carried out on data collection of some countries in the field of psychiatry, including United States, Australia, Canada and the UK. The data were extracted and translated from psychiatric forms of the four countries mentioned above. Also, some schizophrenic cases of Iran were used. Then a checklist was prepared based on demographic and clinical data. The validity of the checklist was confirmed by experts. The checklist was given to 40 psychiatrists. If 75% or more of the participants agreed with an item of the electronic health card, that item was confirmed. If 50% to 75% of the participants agreed with an item, that item was suggested to be used in the card. If less than 50% of the

participants agreed with an item, that item was deleted from the checklist. All the gathered data were analyzed by descriptive statistics.

RESULTS

The collection of data on patients with schizophrenia included demographic and clinical information. The demographic information was divided into three categories:

- Basic information: name, surname, father's name, gender, age, marital status, national security number, address and phone number
- Insurance information: type of insurance and insurance number
- Emergency calls information: name of the person who should be contacted at the time of emergency, his/her phone number and relationship with the patient

Clinical data were also divided into three categories:

- Medical history: blood type, having HIV, hepatitis, shock therapy, allergies, using allergy medications, record of suicide and other problems
- Psychiatric history: admission records in psychiatry hospitals, drug abuse and drug side effects
- Mental status: motor activity, patient's appearance, mood, emotion, thoughts, orientation, memory, judgment and attitude

All the elements of the checklists were analyzed. Thus, from the 29 items that had been questioned, all that were agreed on by more than 75% of the surveyed psychiatrists were considered key elements in electronic health card of schizophrenic patients. So the minimum data that should be included for a schizophrenic patient was determined.

DISCUSSION

The data of healthcare centers are recorded in the health file of a person, and they are compared, combined, and interpreted by doctors or other healthcare practitioners. In addition, doctors use the data in diagnosis of illness, extension of treatment programs and analysis of healthcare impacts. The data related to a patient can be extracted from his/her health file and be saved in the database in a concentrated manner.

Minimum data set provides a fruitful source for analysis and planning of treatment as well as continuous analysis of patient's improvement and his/her performance. The data also provide a useful source for policy-makers, healthcare specialists, and beneficiaries, resulting in improvement of

Table1. Required data frequency in health electronic card for patient's schizophrenia.

N	Variables (required information for schizophrenics)	Observed Frequency									
		Completely Agree		Agree		No Comment		Opponent		Strongly Disagree	
		Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
1	ID Number	32	80	6	15	1	2.5	1	2.5	0	0
2	Name	30	75	8	20	1	2.5	1	2.5	0	0
3	Age	31	77.5	8	20	1	2.5	0	0	0	0
4	Address	31	77.5	6	15	2	5	1	2.5	0	0
5	Telephone number	31	77.5	8	20	1	2.5	0	0	0	0
6	Maternal	29	72.5	6	15	4	10	1	2.5	0	0
7	Introducer	24	60	10	25	4	10	2	5	0	0
8	Introducer's number	24	60	11	27.5	4	10	1	2.5	0	0
9	Introducer's addredd	23	57.5	10	25	5	12.5	2	5	0	0
10	Diagnosis	33	82.5	5	12.5	1	2.5	1	2.5	0	0
11	Test result	25	62.5	8	20	4	10	1	2.5	2	5
12	Radiology	21	52.5	11	27.5	4	10	2	5	2	5
13	Main complain	25	62.5	7	17.5	3	7.5	5	12.5	0	0
14	Medical history	28	70	7	17.5	3	7.5	2	5	0	0
15	Food and Drug Allergies	30	75	9	22.5	1	2.5	0	0	0	0
16	Psychotherapy history	30	75	5	12.5	3	7.5	1	2.5	1	2.5
17	Drug abuse history	25	62.5	10	25	2	5	1	2.5	2	5
18	Family history	26	65	8	20	2	5	3	7.5	1	2.5
19	Hospital stay history	30	75	7	17.5	1	2.5	1	2.5	1	2.5
20	Drug side effects	30	75	9	22.5	0	0	0	0	1	2.5
21	Motor activity	21	52.5	13	32.5	2	5	2	5	2	5
22	General appearance	19	47.5	14	35	3	7.5	2	5	2	5
23	Mood and affect	23	57.5	10	25	3	7.5	2	5	2	5
24	Thoughts	22	55	12	30	2	5	2	5	2	5
25	Orientation	22	55	10	25	2	5	3	7.5	3	7.5
26	Memory	17	42.5	14	35	4	10	2	5	3	7.5
27	Judgment	18	45	12	30	4	10	4	10	2	5
28	Insight	18	45	12	30	3	7.5	5	12.5	2	5
29	Suicidal/homicidal	20	50	10	25	4	10	4	10	2	5

Table2. The minimum data elements of electronic health card for schizophrenic patients.

Basic Information	Medical History	Psychiatric History	Psychiatric Assessment
Name	Main complain	Hospital stay history	Motor activity
ID number	Blood type	Drug side effect	General appearance
Age	HIV and hepatitis	Family history	Mood
Sex	Drug allergy	Drug abuse	Affect
Maternal	Electroshock history		Thoughts
Telephone number	Visit list		Memory
Address	Abuse history		Judgment
Emergence contacts	Diagnosis		Insight
	Other problems		Suicidal/Homicidal Orientation

healthcare and quality of treatment services. The whole data are an instrument for recording the most related and updated facts on the health information of a patient. Therefore, the data of a minimum data set should be easily accessible for healthcare providers. By providing the least variables related to circumstance of personal care including demographic and clinical ones and the care plan of the patient, such data could facilitate the sound communication amongst healthcare practitioners and on-time decisions by managers.[13]

Considering the huge amount of data that is produced in modern medicine, there is great need for storing

and categorizing these data. Still only a minimum of data is collected. A standard method for collecting the key elements of data has been developed that makes understanding easier and comparison possible it also satisfies the internal needs of institutions and the medical society. [14] The investigated countries in this research were similar to Iran in terms of gathered demographic information such as name, surname, gender, age, telephone number, address, urgent calls, main complaint, medical history, hospital stay and mental evaluation and diagnosis. However, they were different from Iran in other aspects such as ethnicity, vicinity, legal case number, social history, state, date of vaccination and body control. Most of the data used in the above mentioned countries have been categorized into demographic and clinical groups. An electronic health card should be organized perfectly. It must contribute to the profitability of medical jobs and provide easy access to patient's medical information.[15]

In 2013, Mort and Latv categorized the data elements of their health card into three categories: (1) personal information such as name, date of birth, blood type, gender, and address; (2) patient information including allergies, previous illnesses of the patient, used medications, vaccinations and surgery dates; (3) biomedical information such as blood pressure, blood sugar and oxygen. Their study identified 16 data elements that were considered illness information for a general center,[16] while the current paper specifies 29 data elements and considers clinical data just for a single disease only for psychiatric centers.

In a study by Hsu and colleagues the data of the health card included: administration, operations, vaccinations, allergy medication, and if patient was willing to donate organs, the needed data for donation.[17] Some findings of this study, for example the history of allergies to drugs and the type of data are not consistent with the present research. In a study by Kardas and colleagues the data of the a patient health card at least included: patient's name, surname, birth date, blood type, gender, address, home, work and mobile telephone numbers, emergency contact information and insurance information.[3] Their study is in agreement with our study in terms of personal data.

CONCLUSION

Considering the great number of schizophrenics, there is a need for a systematic health care system for organizing the patients' information. Currently there are a lot of problems in offering medical services to mental patients and in particular schizophrenics. There is no doubt that in the long run these problems will lead

to bigger problems because of high costs of accessing schizophrenics' valid information and thus prolonged treatment.

Concerns regarding the ignorance of society of these patients condition are a subject that has forced the healthcare policymakers to predict and arrangement a powerful solution to the improvement of these patients' situation. Quick access to clinical information such as test results and radiology reduces the repeated medical actions and improves the services quality. Using the streaming data and the history of patient since the first day of his/her treatment will reduce the drug side effects and medical mistakes. So accessing clinical information that should be available through a clinical system seems vital.

Considering the importance of this issue, the primary data for schizophrenics' electronic health card has been analyzed and based on the results the minimum of the information mentioned in this research will improve the efficiency of a health card in a way that provides quick access to the patient's information making the process of treatment easier.

CONFLICT OF INTEREST

None declared.

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