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Attitudes and behaviors related to introduction of Electronic Health Record (EHR) among Shiraz University students in 2014

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A B S T R A C T

Introduction: Electronic Health Record contains all the information related to the health of citizens, from before birth to death have been consistently over time is electronically stored and will be available without regard to location or time all or part of it to authorized persons. The acceptance of EHR by citizens is important in successful implementation of it. The aim of this study was to determine the attitudes and behaviors related to the introduction of electronic health records among Shiraz university student.

Method: The present study is a cross-sectional descriptive survey. The study population consisted of all Shiraz University students. The data gathering tool was a questionnaire and data were analyzed in SPSS v.16 software, using descriptive statistical tests. Also, the samples, i.e. 384 students, were selected through convenient sampling.

Results: The results showed that most of the students kept their medical records at home to show them to a specialist and only 15% of them were familiar with the Electronic Health Records term. The use of Electronic Health Records for Maintenance of drug prescriptions was of the most importance.

Conclusion: Among the students who are educated class and the source of change, the university students' familiarity with Electronic Health Records is too low and most of them were not even familiar with its name and it is very important to implement this system familiarize the users on how to use it sufficiently.

Keywords: Electronic Health Record (EHR), Attitudes and behaviors, Shiraz University Students

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Introduction

Today, due to increasing demands of clients, instability, poor quality of care and cost effectiveness and poor coordination of care activities, the healthcare systems are at risk (1). Due to growing influx of patients to hospitals and their growing demand for services, health centers have found that electronic health records (EHR) can help to improve efficiency in delivery of service (2). It should be noted that the use of E-health systems for the exchange and sharing of information between healthcare organizations in many countries to promote integrated care is a major goal(3) and there is considerable evidence that health information technology can improve the quality and safety of care and reduce costs (4). Therefore, launching of the EHR is as an opportunity to implement major improvements in public health (5). EHR helps clinicians to find medical history, interventions, referrals, laboratory test results, and assists in managing of drug allergies (6).

Electronic Health Record contains all information related to the health of citizens, from before birth until after death, have been consistently over time, is electronically stored and all or part of it are available to authorized persons without regard to place or time (7).

EHR is one of the most ideal Health Care Information Systems, which must be carefully designed and managed according to the needs of the community (8). Also, the first phase of implementation of EHR is of survey of causes of need to EHR (1, 2, 9).

In this study, the attitude of students about their own medical records was measured and then their familiarity with the EHR term was investigated. A number of applications of the anticipated EHR were presented and according to the importance of each they were prioritized by him/her. It could help the designers to design and implement the Electronic Health Records appropriately. In addition, patients' access to network-based EHR to communicate with health care providers could potentially increase the quality of health care (10).

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Methods

The present study was a cross-sectional descriptive survey, conducted on the students at Shiraz University in 2014. The subjects were selected through convenient sampling method.

From the 384 questionnaires (sample size was selected according to Morgan table) distributed among students, 217 were collected completely. The study participants were assured that their information and identity will remain confidential until the investigation ended.

The questionnaire consisted of 5 parts; the first part included demographic data and the second part contained information about the state of health resources that students used, including a five-part Mainstream Media, books, newspapers, magazines, internet and other items that students have access to.

The third part was a kind of medical records kept at home by students, including four parts: images of radiology, medical records, hospital bills and medical prescriptions; the students were scored 1-4 for each account.

Part 4 of the Maintenance of documentation that included 6 items using a Likert scale of five options from very high to very low (1-5) was scores in group. Part 5 also proposed EHR applications using the Likert scale from strongly agree to strongly disagree (5 options were scored).

Data collection was conducted through a questionnaire, the validity of which was measured by health information management lecturers' opinions in Shiraz University of Medical Sciences. After the necessary amendments and confirmation, the reliability of the questionnaire was measured by distributing 30 questionnaires among students out of the samples. After collecting and entering data into SPSS16, after 10 days the questionnaires were distributed again among the same sample of students; and then re-import SPSS results and their reliability was measured using Cronbach's alpha test. The overall reliability coefficient of 85% was achieved which represents a high reliability.

Results

From 217 students who completed the questionnaire, 65% were male and the rest were female. The mean age was 23.2 years (4.7). In addition, 69% of were undergraduate students, 27 % of graduate and the rest were PhD students.

Resources from which the students receive news and information about the state of health are shown in Table 1.

Table 1. The sources of information and news received by the students about their health status

	N	percent
Mainstream Media	121	70
Newspaper and books	9	5
Internet	29	17
Others	14	8
Total	173	100

The results indicated that the greatest source used by the students radio and television (70%), but books and magazines were the lowest sources used (15%). 87% of them kept their medical records at home.From 169 respondents who kept their medical records at home in Questions 6 to 9 that corresponds to the type of documents that kept in the house asked.

Table 2. The type and percentage of medical data collected at home calculated based on the views of those interviewees who collected their data at home

	n	percentage
Medical images	109	64.6
Medical reports	109	64.6
Doctor letters	59	35
Others	99	35
Total (interviews)	217	-

According to Table 2, 64.6% kept their medical images and medical reports, 35.3% kept their doctor letters at home and 99 people collected medical records at home using other types. The results showed that medical images and medical reports with 64.6% were most documents maintained and doctor letters with 35.3% were the lowest of all kept at home by students. Reasons for the collection of the medical records at home are shown in Questions 10 to 16 in Table 3

Table 3. Reasons for collection of the medical records at home

	scale	Rank	N
For insurance issues	3.1	4	124
to give to specialist	4.2	1	153
I want to judge progression of my disease	3.1	5	119
I change my doctor	3.7	2	148
Just for curiosity	2.8	6	115
I want to increase my own level of medical knowledge	3.2	3	131
Total (n)	-	-	169

According to Table 3, the reasons explained for keeping the medical records at home were 3.1 financial issues, 4.2 to provide specialist services, , 3.3 judgment for development of disease , 3.7 to change the doctor, 2.8 just for curiosity, and 3.2 increase medical knowledge was.

The results showed that the highest score belonged to the provision of a specialist (4.2) and the lowest score to just for curiosity (2.8) .

Only 15% of the students were familiar with the term her. Views on the proposed HER functionalities in the form of a proposal in questions 18 to 23 are shown in Table 4.

According to table 4 Electronic medication record was more proposed and considered important among students. In addition, electronic vaccination record was less important as viewed by the the students.

Table 4. Views on the proposed EHR functionalities

	Completely agree	Agree	No idea	Opposite	Completely opposite	scale	Rank
Electronic vaccinate record	18	22	34	17	9	2.7	6
Online information on doctors and hospitals	16	24	29	25	6	3.2	4
Administration of appointments and reminders	19	35	29	14	3	3.3	3
Electronic medication record	27	39	19	9	6	4.3	1
Electronic access to finding and medical images	23	28	27	14	8	4.2	2
Online consultation of a GP or specialist	13	23	38	16	10	3.1	5

Discussion

Few studies have been conducted on the citizens' familiarity to concepts related to EHR either in Iran or other countries; also, comparison has been done in similar studies. What distinguishes this study from similar studies is using the student community for sampling since most of the population in our country is young.

Findings showed that most people kept medical records at home and only a few of them did not kept medical records at home; this finding corresponds with those of previous studies (9, 11).

The results of a study conducted by Geebraili showed that the average familiarity of respondents (providers) to EHR was moderate to high (12). The findings of the study showed a low awareness of the EHR among the students.

In a similar study in Germany and Austria in 2010 conducted by Alexander et al., it was shown that the awareness of the citizens of Germany and Austria of EHR was lower than intermediate level (9); this is consistent with our results.

Good awareness of the benefits and uses of EHR can increase the adoption rate and decrease the resistance (13). The results of a study conducted in 8000 on German citizens showed that 71% of the people like to add their own electronic health records (14).

Kim and choei in an article entitled "User behaviors toward mobile data services: The role of perceived fee and prior experience" suggested that rapid advances in information and communication technology had caused people to have the opportunity to achieve some digital information contents without restrictions in time or place (14).

Also, Alexander et al. in their study indicated that the highest proposed use of Electronic Health Records in Germany was electronically recorded vaccinations and in Austria it was electronically recorded vaccination and online information for physicians and the hospital (9). However, in our study electronic medication record was the most important application proposed for EHR.

The majority of the students got information about health status through TV and radio; the medical images and medical reports were most of the documents kept at home. Also, the main reason for keeping these documents at home by students was providing them to the specialist.

Very low percentage of the students were familiar to EHR term.

Conclusion

Previous research showed that familiarity of people to EHR could be effective in its successful implementation. The results of the present study showed that the majority of students endorsed the importance of their medical records and kept them at home. This was seen as a positive point. The results showed that the students' familiarity with electronic health records was too low and for the successful implementation of it, EHRs must be introduced to the general population.

Therefore, it is recommended that:

1- Ministry of Health and Universities of Medical Sciences should acquaint people with their rights, particularly their rights of access to health information.

2- With consideration that more students learn about the health through the media and on the other hand the knowledge of EHR is low the level of understanding of information via TV and radio should be increased and encouraged.

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