

Assessing the Willingness of School Students to Choose the Field of Health Information Technology

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Abstract

Aim: The study aimed to, first, provide the students with some information about the field of Health Information Technology (HIT) and its professional status and, second, to investigate the university applicants' willingness to choose this field.

Method: The present study is a quasi-experimental study on two groups of subjects, i.e. a control group and a test group. This study was conducted on the high school students in twelfth grade. The sample size in each group contained 116 subjects, who were randomly selected and placed in one of the groups. The data collection tool in this study was a questionnaire prepared based on the previous literature. SPSS version 26, descriptive and analytical statistics were used to analyze the data.

Results: The participants' familiarity with the field of health information technology was 11%, 5.7% of whom had obtained only a little information about the field through mass media and social networks. Comparing the willingness of the two groups of participants to choose the field of information technology, showed a statistically significant difference, with 99% probability.

Conclusion: The importance of informed decision-making and interest regarding the university major has been shown because it is very effective in teaching specialized human resources, especially in health care education. In this regard, the education and familiarity of high school students with academic fields can be useful. It is necessary to introduce the field of HIT and the scientific and practical capabilities of its graduates to the community.

Keywords: Health Information Technology; Students; High School; Willingness; Assessment

Selecting a field of study (FoS) is one of the most important choices in an individual's life as it significantly affects every person's life (1). Interest in one's FoS and having a purpose in choosing a field are closely related to the individual's employment status after graduation (2). Therefore, the choice of a field determines the direction of the developments and events in a person's life (1).

According to the previous studies, various intrinsic and extrinsic factors affect the choice of a field of study. Intrinsic variables include personal interest, attitude, ability, and academic performance, and extrinsic variables include parents, relatives, teachers, friends, the economic status of the family, and the parents' jobs (3,4,5,6,7). On the other hand, knowledge about specialized academic fields and employment opportunities has a vital role in choosing that field (8).

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According to the results of research conducted by Sadeghian et al., medicine, and its sub-fields are among the most popular academic fields in Iran (10). Advances in medical science and information technology have led to changes in the professions involved in healthcare. One such FoS is health information technology (HIT) (11). Since 2009, this field has replaced medical records management in Iranian universities. Medical records management was an important major in the vast field of healthcare and medical treatment and was taught at most of the Iranian medical science universities between 1972 to 2009 (12).

Even though HIT has been taught in medical universities for many years, researchers have concluded that applicants are not sufficiently aware of the content of the subjects they are going to study when choosing it, and they choose the field with unrealistic expectations and a vague idea of what it is (12,13,14,15). This type of uninformed decision-making leads to the student's dissatisfaction with the FoS and causes issues for higher education policymakers(12). Moreover, lack of interest in the field, in turn, leads to a lack of interest in the job the graduates do and reduces professional inefficiency after starting work (17,18).

It is a fact that one of the greatest resources and assets of a country is its efficient and motivated workforce. Therefore, if people step into a FoS without having the necessary knowledge and interest, and are unaware of their capabilities, they will not have the required efficiency and effectiveness at the workplace when they are employed after graduation. Thus, a large part of the government's budget for the education and training of the labor force is wasted (12). The aim of this study was, first, to provide the readers with some information about the field of HIT and its professional status and, second, to investigate the university applicants' willingness to choose this field. It is hoped that the results of this study, which emphasize the importance of the

applicants' awareness and knowledge about academic fields, help solve the problems of employment in areas unrelated to the employee's field, such as dropout, willingness to change one's university field after entering university, lack of interest in the profession, and reduced efficiency and effectiveness at the workplace. It is thus hoped that wasteful government spending on education and training of disinterested students would be reduced.

Method

This is a quasi-experimental study on two groups of subjects, *i.e.* a control group and a test group. It was conducted in 2019, adopting a post-positivist paradigm and a quantitative approach. Considering the purpose of the study, the population consisted of high school students in twelfth-grade studying experimental sciences. Because the school's location might influence the results of our study, two large schools in a central part of Kerman were selected (4,19).

The sample size in each group was 116 students, which was specified using the G Power software with $\alpha = 5.05$ and $\beta = 0.85$, and the effect size of $d = 0.5$ (Figure 1).

Samples were randomly selected and placed in one of the groups. To avoid the interference of the samples, two researchers conducted the study simultaneously.

The data collection tool was a questionnaire prepared based on the previous literature. The questionnaire consisted of items that determined the individual's level of familiarity with the field of HIT, the source of their information, how much of the subjects' information was obtained through mass media, social networks, friends, and relatives, their familiarity with the related job opportunities and the job market, and enquired about their willingness and interest in choosing the field. Depending on the type of question, participants had to answer either yes/no questions or give responses on the Likert scale. Content Validity Ratio (CVR) was used to

determine the content validity of each item on the questionnaire, and then the total validity of

the questionnaire was confirmed using the content validity index (CVI) (0.64).

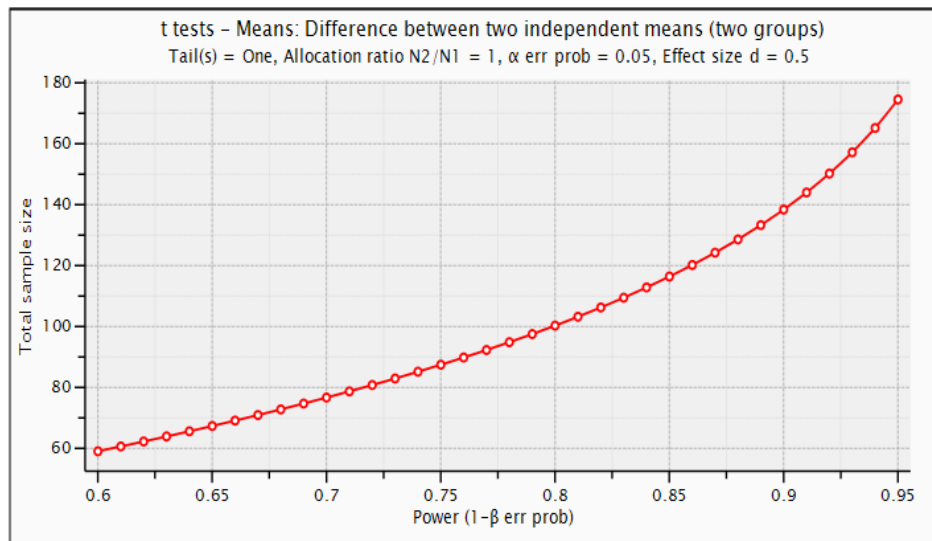


Figure 1: Sample Size of Each Group with G Power Software

There was no need to measure the reliability of the questionnaire, as reliability is only required for reflective questionnaires (20) but the questionnaires used in this study were formative.

To introduce the field of HIT, the educational content of HIT was prepared based on the latest national and international scientific sources and was approved by three professors in the field of HIT.

To observe ethical principles, the full questionnaire was first distributed among the subjects in the control group, and after collecting the questionnaires, some information about the field of HIT was given to the subjects. In the test group, the items of the questionnaire were divided into two categories. First, questions related to the level of familiarity with the field were distributed. Then, the necessary information was provided to them, and the second questionnaire was passed out to measure the subjects' willingness to choose HIT as their field in university. Finally, descriptive and analytical statistics and SPSS version 26 were used to analyze the data. Since the latent

variable was measured with a question in both groups, the Mann-Whitney U test was used to analyze the results (20).

For ethical considerations, the study began after acquiring the necessary permits from the education department and school management and obtaining verbal informed consent from the students. Thus, voluntary participation, complete and informed consent of the participants, the right to withdraw, and the confidentiality of the results and personal information were the ethical considerations observed by researchers. In compliance with ethical principles, the control group was trained after the study.

Results

As mentioned, all participants in the study were twelfth-grade high school students who studied experimental sciences. In general, the highest level of the students' parents' education was a diploma. In addition, as stated by the participants, most fathers (34.9%) were government employees, and most mothers were housekeepers (54.3%). (Table 1)

Table 1: Demographic Information about Study Participants

	Variable	Percent
Father's education	Diploma and less	33.2
	Associate degree	19.8
	Bachelor	28.4
	Master's degree and higher	18.5
Mother's education	Diploma and less	37.1
	Associate degree	19.0
	Bachelor	33.2
	Master's degree and higher	10.8
Father's job	Employee	34.9
	Self-employment	28
	Retired	8.6
	Physician	1.2
	Captain	.4
	Driver	2.6
	Dead	.4
	Judge	.4
	Worker	.4
	Firefighter	.4
	Farmer	2.2
	Teacher	8.6
	Engineer	4.7
	Military	6.5
	Faculty member	.4
Mother's job	Housekeeper	54.3
	Chef	.4
	Retired	.9
	Nurse	2.6
	Physician	1.2
	Self-employment	3
	Student	.4
	Employee	15.5
	Teacher	19.4
	Engineer	.9
	Writer	.4
Faculty member	.9	

Overall, the participants' familiarity with the field of HIT was 11%, 5.7% of whom had obtained only a little information about the field through mass media and social networks. Also, 2.2% of the participants stated that they knew a student of HIT among their friends or relatives, and 0.4% of the participants had some information about the job opportunities in the field.

Comparing the willingness of the two groups of participants showed a statistically significant

difference. According to the value of sig or z, hypothesis 1 is confirmed with 99% probability. In the Mann-Whitney U test, the difference is determined based on the mean rank. The results showed that the mean rank of the test group was higher than the control group. In other words, the students in the test group were more willing to choose the field of HIT than the students in the control group (Tables 2 and 3).

Table 2: Comparing the Willingness of the Two Groups of Participants

	HIT. Choice
Mann-Whitney U	750.000
Z	-2.873
Asymp. Sig. (2-tailed)	.004

Table 3: Mean Rank of Groups

	Group	%	Mean rank	Sum of ranks
HIT. Choice	Intervention	65	56.46	3670.00
	Control	35	39.43	1380.00
	Total	100		

Discussion

The results showed that the participants were quite unfamiliar with HIT (11%) and its job opportunities (0.4%). The study found that the knowledge of many students was inadequate when choosing a field of study, and students did not often choose it based on awareness and knowledge about their different options, which was consistent with similar studies (12-15,17). Due to the long history of teaching this field in medical universities, authorities must pay more attention to introducing the field to the public, especially to high school students. Because choosing a field without knowledge and interest, leads to a waste of government spending on education, and the emergence of educational problems (12,21). Since mass media and social networks are practical and essential tools for improving education and learning (22), and the widespread application of virtual social networks by young people has provided a unique opportunity to use the

capabilities of such media (23), therefore; in this regard, social networking capabilities can be used. Even though the field has been taught in medical universities for many years, students stated that they had received little information about this field from mass media and social networks (2.2%). Therefore, educational administrators and policymakers should emphasize this issue and consider appropriate solutions. They should describe fields, courses, and skills required for professional activities in the field, and introduce the related occupations, job opportunities, professional duties, and regulations (24).

Furthermore, comparing the participants' willingness in the control and test groups to choose the field of information technology, showed a statistically significant difference. Thus, the students in the test group were more interested in choosing the field of HIT than the participants in the control group. According to several studies, having detailed knowledge about a particular FoS and recognizing its job opportunities can have a significant impact on choosing it(5,7,9,12,15,17). It seems that among all sources of information about professional positions, the best source is listening to the lectures given by business owners and professionals in a particular field. Such lectures can serve as a good guide for applicants to choose the right FoS that suits their interests (19). Therefore, it is suggested that educational programs be developed and implemented in high schools to improve students' awareness of the fields of study taught at universities. Also, because the primary source of information, today, is the Internet and virtual social networks, developing appropriate educational content in such sources is very important and can improve students' awareness and knowledge about different university fields.

Limitation

One of the limitations of the present study is that its findings are based on a survey given to

high school students, and thus, quantitative tools were applied for data collection and analysis. It is suggested that qualitative studies be conducted in the future, e.g., through individual and group interviews, to overcome this limitation and obtain more accurate findings.

Conclusion

The importance of interest and informed decision-making for one's university major has been demonstrated, as it is highly influential in training specialized human resources, especially in healthcare education. In this regard, educating and familiarizing high school students with academic disciplines can be beneficial. It is necessary to introduce the field of HIT and the scientific and practical capabilities of its graduates to the community. Since virtual social networks are available and used by a large segment of society today, significant steps can be taken in this direction with proper planning. The importance of this issue is doubled since for the optimal use of information technology in the area of health, and for the need to train efficient human resources, IT management requires the training of several familiar and interested professionals.

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