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Research Article

The Effect of Summer School Education on the Attitudes of Students towards Research

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Abstract

Objective: The present study was performed in 2015 to determine the effect of summer school education affects the perspective of talented students on research.

Methods: This study was performed semi-experimentally using the summer school training method on Thirty-six Talented students from the Zabol University of Medical Sciences in 2015. The data collection tool was a standard questionnaire used to survey student perspectives on research.

Results: Scores on perspectives on research changed from mean ± SD of 40.10 ± 1.30 pre-intervention to 60.30 ± 1.80 post-intervention (p=0.001). The mean and SD for female students was 65.02 ± 2.23, which was higher than mean and SD of males students was 50.32 ± 3.14. (p=0.01). These findings indicate that summer school affected perspectives on research in this student sample (p=0.001).

Conclusion: Establishing summer school for students may develop students' perspectives on and willingness to learn about research. Studentship is the best time during which they can learn research skills. Holding such workshops can play an important role in the evolution of the health system.

Keywords

Education; School summer; Students; Research

Introduction

One of the latest education methods is the summer school teaching method [1]. The summer school method is a scientific plan, held by a science and education center during summer holidays. The summer school is a specified plan with organized timing that aims to educate and develop science in universities and results in significant changes in knowledge and skills level [2]. If these workshops run Collaborative, they can significantly impact participants and generally exert specific effects on the viewpoint [3]. The New York Medical School ran the first summer school, aimed at low-level students. The results were positive, indicating that the program significantly influenced the perspectives of students [1].

The literature recognizes that some programs for individuals with special needs already exist that utilize outdoor adventure as the primary means through which therapeutic goals are achieved [4] In some countries, such as the US and UK, these workshops are run officially for primary school students intending to enter secondary and high school [2]. Nowadays, summer schools are run at different universities with various subjects, such as research methodology education [5]. Accordingly, investing in the development of research and involving students in research projects will play an important role in determining the future research status of Iran. One of the most important factors in medical student participation in research is level of motivation. As medical research is one of the most important fields of research in societies, training researchers and proficient students is one of the aims and policies of Iranian educational authorities. Moreover, holding educational programs using the latest methods provides the basis for future interventions to modify students' attitudes toward research and research activities during school years activities [2]. The aim of this study was to investigate the effect of education using the summer school method on the perspective of talented students on research in an Iranian medical university.

Methods

This semi-experimental study was performed on Thirty-six Talented students from the Zabol University of Medical Sciences (Zabol, Iran) in 2015. At the first stage, different sessions for drawing purposes and initial structures of summer school were completed by the researchers. Following the required coordination in order to run summer school by the Talented students center and the center of research and development of medical educations at Zabol University of Medical Sciences, the students were informed of the time and place of workshops by the university website, banners, and posters setup in the campus area and were also informed by the Edo officials of faculties (Medical, Pharmacy, Nursing and Midwifery, Health, Paramedical).

Eager students with different majors enrolled in this workshop. The data collection tool was a questionnaire including demographic information (e.g., age, gender, marital status, educational level, major, and grade average) and the tools for investigating the viewpoint towards research included 26 items scored on a 5-point Likert scale [completely agree (5) to completely disagree (1)] yielding potential scores of 26 to 130. The summed scores of each participant were used to determine the level of their perspective. These scores were adopted from the Mir Kheshti et al. [6] study on the perspective of medical students on research after graduating in 2011. The content validity of this questionnaire was confirmed by investigating the viewpoint of ten medical experts and the reliability of this tool was calculated as 90%, using Cronbach's alpha coefficient.

On the first day of holding this workshop before the opening ceremony, the questionnaire of investigating the perspective on research was distributed among students. The summer school was held over four days in the form of four research workshops (preliminary research method, advanced research method, and SPSS course), two educational clinics, and one free discussion. These workshops included both theoretical and practical aspects. The questionnaire surveying the viewpoints to the research was completed again in 60 days. Data were analyzed by SPSS 21. Descriptive and analytical tests use for data analysis. $P \leq 0.05$ and 95% confidence interval were considered statistically significant.

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Results

Of the 36 students who participated in the study, four (11.11%) were males. Their mean ± SD age was 21 ± 1.08. Regarding marital status, 34 students were single (94.44%) and two students were married (5.55%). Of those, 33 students (91.66%) graduated and three students (8.33%) were Doctors of Medicine (MD). Regarding university major, 16 students (47.22%) were students of nursing, three (8.33%) of midwifery, seven (19.44%) of health, five (13.88%) of healthcare management, three (8.33%) of MD, and two (5.55%) of anesthesiology (Table 1).

The average grade of participating students was 17.01, with a maximum and minimum of 18 and 16, respectively. Regarding perspectives on research, the mean ± SD of total scores was 40.10 ± 1.30 pre-intervention and 60.30 ± 1.80 post-intervention (p=0.001). The mean perspective on research in female students was 65.02 ± 2.23, which was higher than that of males (p=0.01). The results were not significant according to marital status (p=0.5). There were no significant associations between educational variables such as university major (p=0.8) and educational levels (p=0.4). In addition, the mean changes in perspectives on research among students did not differ significantly based on average grade (p=0.1) (Table 2).

Table 1: Frequency distribution of research units based on the individual and educational variables.

Variables		No	%
Gender	Female	32	88.88
	Male	4	11.11
Marital Status	Single	34	94.44
	Married	2	5.55
Education Level	Doctor of medicine	3	8.33
	B.A/B.S	33	91.66
University Course	MD	3	8.33
	Nursing	16	47.22
	Midwifery	3	8.33
	Health	7	19.44
	Anesthesiology	2	5.55
	Management	5	13.88

Table 2: Comparison of mean changes of viewpoint on research based on the individual and educational variables.

Variables		Mean Score	T or f	P value
Age	21 ± 1.08		r =0.014	P= 0.650
Gender	Female	65.02 ± 2.23	t=1.91	P=0.014
	Male	50.32 ± 3.14		
Marital Status	Single	48.13 ± 1.13	t =2.59	P=0.050
	Married	45.73 ± 3.28		
University Course	MD	48.9 ± 2.46	F=0.249	P=0.774
	Nursing	68.12 ± 2.11		
	Midwifery	40.26 ± 3.12		
	Health	62.02 ± 1.43		
	Anesthesiology	58.10 ± 2.16		
	Management	46.23 ± 2.14		
Education Level	M.D	60.06 ± 1.23	t =0.267	P= 0.403
	B.A/B.S	62.46 ± 3.20		

[Note - MD: Medicine Doctor, B.A/B.S: Bachelor of Administration/ Bachelor of Science]

Discussion

The International Scientific Summer School (ISSS) was designed to improve the reflexive relationship between scientists and science [7]. The mean perspective on research among participating students was 40.10 ± 1.30 pre-intervention. In Memarpour study the mean perspective on research was 68.97 ± 12.56 [8]. This suggests an insufficient perspective on research. To explain their result, further considerations for developing the viewpoint are required in regard to the low perspective on research pre-intervention.

In the present study, with regard to perspectives on research, mean ± SD of the total scores was 40.10 ± 1.30 pre-intervention and 60.30 ± 1 .80 post-intervention. These results were consistent with those of Zier and Green [9] and Beattie [3], who conducted one period of summer school addressing research. Following this plan, medical students became highly motivated to do research and received a higher research level score. Other studies have shown that summer school improves confidence and self-esteem in students, improving their behaviors and increasing their acquisitions [10,11]. Similar results were observed in a study conducted by Miguel A Medina, which investigated the effect of a summer plan on improving the function of 147 medical students at a Texas medical school located in San Antonio. They found that the summer plan improved function [12].

The results of their study, in terms of positive effects following summer school, were inconsistent with those of Fradley. Freadly et al. showed the students did not show any significant differences after summer school courses of five hours/day, five days/week, totaling 150 hours [13].

The results of this study suggest that mean changes in perspectives on research in female students were significantly higher than in male students who participated in the summer school plan. This result was also consistent with Pavlik, who reviewed acceptance and application parameters in developing the summer plan at Baylor Medical University. This workshop was directed toward female participants who took part in an eight-week enhancement program. These summer enhancement programs were performed in order to enhance the mission of medical universities in 1984 [14]. In addition, the study by Memarpour suggested that female students (72.97 ± 20.54) were more knowledgeable than male students (68.09 ± 21.56) [8]. We can infer that this difference might be due to the fact that female students are more motivated, determined, and hopeful, persevere more in their tasks, and are more sensitive to their own improvements. The personal factors and high number of students participating in this study is also important and should be considered. The mean perspective on research in single students was 48.13 ± 1.13, higher than that of married students (45.73 ± 3.28). The findings of this study are consistent with the results of a study by Memarpour and, accordingly, single students (69.73 ± 12.37) had a better perspective on research than did married ones (66.12 ± 12.54) [8]. One of the limitations of this study was its self-report nature.

Conclusions

Summer schools for students can improve the perspective of talented students on research, rendering them inclined to perform research activities. Implementing research-based summer school plays a key role in motivating students. Therefore, holding these workshops is necessary to the development of health systems.

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