

## The Effect of Health Education on Knowledge, Attitude and Practice (KAP) of High School Students' Towards Brucellosis in Yazd

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**Abstract:** Brucellosis, as an infectious disease, constitutes a major health and economic problem around the world including Yazd province. It is aimed to set a health educational program regarding to KAP of students about brucellosis and evaluate its effects. All students of the largest male high school, as a quasi-experimental and before and after study were conducted in Yazd province using a 34 itemized questionnaire. The knowledge of students about brucellosis, sign of disease and the principals of prevention of disease was significantly increased after intervention. The attitude and practice of students about Brucellosis has also increased after suitable designing of educational programs by physicians. It can be concluded that physicians can play an important role in such this health educational programme and this method can be empowered the community for control of endemic disease.

**Key words:** Health education % Brucellosis % Knowledge % Attitude % Practice

### INTRODUCTION

Brucellosis, as an infectious disease, can cause long-lasting or chronic symptoms that include recurrent fevers, joint pain, and fatigue. It constitutes a major health and economic problem around the world including Iran. This disease, however, is more common in countries that do not have effective public health and domestic animal health programs. The Mediterranean Basin, South and Central America, Eastern Europe, Asia, Africa and the Middle East are currently listed as high risk countries. It has a long history in Egypt, Islamic republic of Iran, Iraq, Jordan, Lebanon, Oman, Saudi Arabia, Sudan, Syria and Yaman countries. The annual reporting of Brucellosis indicates around 40000 human cases in the region, however, this is a vast underestimate of the actual number of cases [1]. In addition, in Yazd province 966 annual new cases is reported in 2005 [2]. Although this disease is not common in the united states but an estimated of 100 to 200 cases per year has been reported. The prevalence of brucellosis in Iran and Yazd adults has been reported to account for approximately ...% and % of population, respectively. It is caused by the bacteria of the genus *Brucella* which is primarily passed among animals, and causes disease in many different vertebrates. Various *Brucella* species affect sheep, goats, cattle and several

other animals. Humans are generally infected by coming in contact with animals or animal products that are contaminated with these bacteria and occupational exposure via inhalation of organism in various workplaces and laboratories. The lack of health education in students can also lead to disease through eating or drinking of contaminated milk products e.g. unpasteurized milk and cheese. Students can also play an important role for health promotion of their family or community individuals. Therefore the primary preventive program and health education can be considered as most important ways in health programs. It is aimed to set a health educational program and evaluate its effects for high school students.

### MATERIALS AND METHODS

In the educational program for promotion of knowledge and attitude of brucellosis, all students of the largest male high school ranged from 14 to 19 years old with a mean of  $16.7 \pm 1.46$  in Yazd province were conducted in this study as a quasi-experimental and before and after study. The programme was conducted during a whole school day. The educational content was based on the recommendation in the medical literature and need assessment in pre-test (Table 1). Teaching methods included a lecture, group discussion and exhibition about

Table 1: Teaching methods and contents of the implemented brucellosis programme

Teaching method	Content
Lectures	- definition of brucellosis - methods of transmission of brucellosis - prevention and control of brucellosis
Exhibition	Slide, Pamphlets about brucellosis
Group discussion	Self-management skills to help control brucellosis

Table 2: Mean number of correct answers for knowledge and attitude at pre-test and post test

	Mean number (SD)		
	Pre-test	Post-test	Significance
Knowledge	12.40 (3.8)	19.97 (3.6)	P<0.0001
Attitude	23.26 (3.7)	28.07 (2.7)	P<0.001

Table 3: Mean of increase of knowledge and attitude based on course

Course	Cases No.	Mean of	Mean of	Significance
		knowledge Increases	Attitude Increases	
Biological sciences	55	7.22	4.94	P<0.001
Mathematics	45	7.93	4.80	P<0.001
Humanities	30	7.60	4.73	P<0.001

brucellosis were educated by physicians in three sessions. To evaluate the educational program, a one group pretest/ post test design was applied using a pre-test before the program and post-test three months after program. A 34 itemized questionnaire was designed by researches and the content validity was established by five experts who were either academic staff or physicians. To determine the internal reliability, a cronbach's alpha was calculated for scale ( $\alpha=0.81$ ). The knowledge, attitude and practice of students were compared before and after education. Data were transferred to SPSS (Statistical Package for Social Sciences) for analysis and statistical tests. Statistical analysis was performed with paired t-test. We considered differences significant at  $P<0.05$ .

### RESULTS

A total of 130 male students were interviewed with structured questionnaire before and after intervention. The duration of the programme was 3 months (from September to November 2004). General speaking, the knowledge of students about brucellosis was significantly increased after intervention. The results indicated that only 32% of respondents were aware about brucellosis as an endemic disease, whereas it was increased to 59.3%

after intervention. Our findings also revealed that the knowledge of students regarding to the signs of disease increased from 53.3 to 70.7% after intervention. This intervention also increased student's knowledge about how long the cheese should be kept in salt water in that 65.4% of students were aware after intervention compared to 13.1% before intervention.

The mean of knowledge and attitude of students about Brucellosis was low at the beginning of programme whereas it has increased after suitable designing education programs by physicians (Table 2). The mean score of knowledge has been increased from 12.4 to 19.97 ( $P<0.001$ ) whereas attitudes' score has increased from 23.26 to 28.07 ( $P<0.001$ ). Results also indicated (Table 3) that the increment of knowledge and attitude was approximately the same in all courses including biological Sciences, Mathematics and Humanities ( $P<0.001$ ). After students attended the health education sessions, a significant difference was found between before and after the program. 31% reported a history of raw milk ingestion before the program decreased to 13% after the program ( $P<0.001$ ). Also 41% reported a history of consumption of fresh cheese without pasteurization before the program that this decreased to 14% after the program ( $P<0.001$ )

### DISCUSSION

General speaking, literature review showed no or little information about brucellosis either epidemiological or interventional study. It might be due to control of disease in developed countries but problem still remained in developing countries including Iran. This is, therefore, the first and important based study which has measured the KAP of students about brucellosis before and after intervention. There is no mystery about the epidemiology of brucellosis in animals or in humans. Everything needed for the elimination of the disease is known but applying that knowledge throughout the world is an immense challenge [3]. Health education is the cornerstone of health promotion and has been defined as "the lifelong process by which individuals acquire knowledge, attitudes and behaviour that promote health and foster wise decision for solving personal, family and community health problems" [4]. The two main findings of this study was that the knowledge and attitude of students and the practice based on self report regarding to row milk ingestion and fresh cheese as a folklore was significantly increased after intervention. This study supports the results of Jhofranipoor who showed an increment of general knowledge about prevention of brucellosis from

72 to 96% [5]. Similar studies about the control of brucellosis were also indicated success in health education program [6, 7].

The short - term success of this intervention project is significant for several reasons.

First, physicians were able to create a positive environment for participants and present the material in such a way that there were no dropouts over three sessions. This supports the idea that this type of health promotion project is sustainable because it depends upon the self - motivation of the educators and participating students, rather than incentive from outside. Secondly, the success of health education project may be due to the fact that the physicians in our society enjoy highly of the people's respect and this has led to the success of this program [2]. Third, physicians were also increased the effectiveness of their program by understanding the impact of cultural norms on student behavior.

It may be suggested that this program can be implemented in other high schools in Yazd province and ask students to aware their parents about brucellosis. It is believed that using this method can be empowered the community for control of endemic disease.

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