Original Article

An investigation on the effect of Health Belief Model-based education on refusal skills in high risk situations among female students

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Abstract

Background: Various studies show an association between lack of social skills in adolescents and the future incidence of behavioral disorders. If girls, as future mothers, lack adequate health, awareness, self confidence and social skills, they may act as a source of many social problems. Therefore, the present study has tried to educate this group on one of the most essential social skills, refusal skill in high risk situation.

Materials and Methods: This is a field quasi experimental study conducted on 145 female students in middle schools in Arak, Iran in 2010-2011. The schools were randomly selected. The subjects were selected through systematic random sampling from the schools' log book. The data were collected by questionnaires containing personal and familial characteristics, three health belief model structures, and behavioral intention in high risk situations. The data were analyzed by descriptive statistical tests (frequency distribution, mean, SD) and inferential tests of repetitive variance analysis and T-test through SPSS.

Findings: In the present study, repetitive variance analysis showed that education by use of a health belief model had a positive effect on refusal skills in high risk situations as well as perceived barriers ($p = 0.007$), self-efficacy($p = 0.015$), behavioral intention ($p = 0.048$) after educational intervention in the study group, but not on perceived benefits ($p = 0.180$).

Conclusions: The results showed that education significantly increased refusal skills in high risk situations in the study group through the health belief model. With regard to the results, it is essential to equip the students with preventive behaviors to guarantee their physical, emotional and social health.

Key words: Education, health belief model, refusal skills in high risk situations, behavioral intention

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This article was derived from an MSc thesis in Isfahan University of Medical Sciences, No: 389260.

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Quick Response Code:	Website: www.***
	DOI: ***

Introduction

Adolescence is one of the most important periods of human life. Today adolescents constitute a higher percentage of the population of Iran than they did in the past.[1] Major changes take place in social behavior, appearance and mental state of a person at the time of puberty, and many healthy habits and behaviors which significantly affect healthy behaviors in adulthood are formed at this time. It is of such importance that it can lead a person and their society to ultimate progression or regression.[2] One other reason for the importance of this period of human life is the susceptibility of girls at this time,[3] as evidence shows adolescents and youngsters younger than 25 years are predisposed to AIDS mostly through sexual relationships.[4] Numerous studies show an association between lack of social skills and incidence of behavioral and mental disorders as well as future high risk behaviors.[5]

Local studies report the adolescent population to be 16 million people (27%) over 50% of whom do not have

healthy life skills,[2] like being independent from their family and joining their peers and friends. Although this is a prerequisite of socialization and getting an identity, it can also lead to smoking, drinking, drug abuse, and high risk and dangerous behaviors due to peer pressure.[6] Based on previous researches, adolescents should be effectively educated before and within the puberty period. However, in most countries, girls are not officially educated concerning their hygiene and health at the time they are in real need of such education.[7] Adolescent girls, as future mothers, may in turn raise children who are unaware of health issues if they themselves lack adequate health, awareness and self confidence. Therefore, investment on girls is an investment on national development.[8] In respect to adolescent education in the present society, schools can play a major role in providing education for adolescents for their lives as adults. Schools should also take action in the promotion of physical, cognitive, emotional and social health.[9] Education and practice of healthy life skills for students is also one of the main health goals in schools.[1] Generally, people who have attained necessary social skills can adapt to their environment well.[10] Former researches show that the most efficient educational programs are based on the axis theory which originates from behavioral change models.[11] The Health Belief Model (HBM) is one of these models.[12] Backer and Wemi believe this model includes perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action and self efficacy.[13] Since, adolescence coincides with puberty, it is a very important period of human life which acts as a step in human physical, mental and social development, and can impact every personal aspects of a person. Society has numerous concerns related to this period of life that may lead to personal and social issues if necessary supervision is not administrated.[8] Unsuccessful marriages, high risk pregnancies, mortalities, and unhealthy behaviors and habits all root in this period of life. About half of the adolescent population of society are not sufficiently protected against AIDS and other sexual diseases, and are predisposed to unhealthy sexual relationships, drug abuse, early pregnancy, violence, educational failure, and etccetera.[1] Past researches suggest an association between lack of social skills and the incidence of future high risk behaviors.[5] Therefore, the population under 15 years of age is susceptible to AIDS.[14] Midwives as an element of the health care system can play a key role in counseling women on health at any age including adolescence and puberty.[2] Therefore, this research tried to educate adolescents on one of the most necessary social skills: refusal skills in high risk situations. This was done in order to take a step toward the promotion of mental, physical and social health amongst adolescents and to increase their refusal intention, and to equip them with preventive behaviors

Materials And Methods

This is a field quasi experimental, two group, three step study conducted on middle school girls of Arak in 2010-2011. The population studied comprised all female middle school students studying in governmental schools. The inclusion criteria were interest in attending the research, having a written consent signed by the students and their parents, and being in optimum physical health with no special physical or mental disease based on their school health record. The exclusion criteria were losing interest to stay in the research, more than one absence in educational sessions or school transfer for any reason, death of parents, departure or divorce of parents during the study or any other certain situations or unexpected events which increase the students' stress level. The schools were randomly selected from two educational districts in Arak and were allocated as control and study groups through convenient random sampling. The subjects were selected through systematic random sampling from school log books and based on sample size of 126 subjects (63 subjects in each group).

Ten additional subjects were included due to subject drop out. The data were collected by a questionnaire, which was written by the researcher, about three structures of HBM (perceived benefits, perceived barriers and perceive self efficacy), and behavioral intention of refusal skills used in high risk situations. The questionnaire included five sections. The first section contained personal and familial demographic characteristics (birth rank, number of children, parents' occupation, family income, parents' education level, parent's death, having a step father or mother, and parents' divorce). Section 2-4 contained HBM based scales, each consisting of two groups and each group containing 10 questions about adolescents' perceived benefits of refusing high risk situations which were scored by the Likert scale with five options from Absolutely agree (score 5) to Absolutely disagree (score 1). In the reverse condition of the answers, absolutely disagree scored 5 and absolutely agree scored 1. The third section included 13 questions about perceived barriers in refusal skills of high risk situations which were scored through three option answers (No, somehow, yes). Answer No scored 0, answer Somehow scored 1 and answer Yes scored 2.

The fourth section contained 7 questions on perceived

self efficacy in refusal skills used in high risk situations with a scoring system similar to the perceived benefits section. The fifth section of the questionnaire included 7 questions on behavioral intention of refusal skills in high risk situations with a scoring system similar to the perceived benefits section. Behavioral intention scale is in fact the combination of three structures of perceived benefits, obstacles, and self efficacy. It should be mentioned that categorization of the above structures and behavioral intentions were designed based on the supervisors' comments and the indications of some of the academic staff of the Nursing and Midwifery School, Education School, and the statistics counselor. Content and face validity were employed to attain scientific validity of the questionnaire. The questionnaire was written by the consideration of the Weiland Healthy Behavior Scale used in Rahimiyan booger,[5] literature review and internet search, supervisors' indications, the tool employed in the study of Ghaffari et al.,[11] and related standard tools like the Cooper and Smith Self-esteem Test. Then, content and face validity were considered and it was evaluated by academic members of the Nursing and Midwifery School, Social Science and Education School, and Psychology School of Isfahan University of Medical Sciences with high scientific experience and activities in relation with adolescents. The questionnaire was eventually confirmed by their suggestions, modifications and changes. The questionnaire was distributed to 20 middle school female students for face validity and they were asked to pass their comments concerning possible ambiguity. The students' reactions to the questionnaire and their needed time to complete it were carefully noted. Ultimately face validity was confirmed.

The questionnaire was given to 30 middle school female students to confirm reliability which led to measurement of Cronbach's alpha of 0.7. The schools, which took part in the confirmation of validity and reliability, did not participate in the study.

After selection of the students, an anonymous questionnaire including personal and familial characteristics, and three structures of HBM and behavioral intention of refusal in high risk situations was given to the students. The questions were read out by the researcher to achieve the students' highest attention and participation level, and then the students completed the questionnaires individually. The schools were randomly selected as case and control groups.

Intervention was conducted in the form of education based on HBM through using a protocol which was a result of vast literature review.

Education on perceived benefits, barriers and self efficacy in refusal skills used in high risk situations was conducted in the form of 5 sessions of 1.5 hour length, with a maximum of three sessions a week through lecture, group discussion, questions and answers, and brain storming in four 15-20 member groups in the school mosque in the intervention group.

Just after and two months after education, both study and control groups completed the same questionnaire. In order not to deprive the control group of education, it was also given the necessary education in the form of a lecture after the intervention ended. Data were analyzed by descriptive (Mean, SD) and inferential statistics (variance analysis, repetitive observations, independent t-test) through SPSS.

Findings

The findings showed that most of the subjects in both groups were the first born of a family with two children in which the father was self employed and the mother was a housewife. There were no parental deaths, step father or mother or parental divorce among the subjects. The highest frequency for fathers' education level was 51.4% primary school in the study group and 37% high school diploma in the control group. The highest frequency for mothers' education was 44.4% primary school in the study group and 35.6% middle school in the control group. The fathers' and mothers' education level was higher in the control group compared to the study group. ANOVA test before, just after and two months after showed no significant difference in perceived benefits in the study group ($p = 0.18$) and control group ($p = 0.456$). Perceived barriers had a significant difference in the study group ($p = 0.007$) but not in the control group ($p = 0.456$). Perceived barriers in this study were scored in a way that those with a lower perceived barriers rate in the refusal of high risk situations scored more and vice versa. Perceived self efficacy had a significant difference in the study group ($p = 0.015$) but not in the control group ($p = 0.506$); behavioral intention had a significant increase in the study group ($p = 0.048$) but a significant decrease in the control group ($p = 0.001$, Table 1).

T-test showed a significant mean difference in the behavioral intention score just after ($p = 0.02$) and two months after ($p = 0.005$) education between the study and control groups with a higher mean score in the study group.

Table 1. Range, levels and mean scores of perceived benefits, barriers, self efficacy and score of behavioral intention in the refusal skills used in high risk situations before, just after and two months after intervention in the study and control groups

Scale	Range	Level		Stage	Study		control	
					Mean	SD	Mean	SD
Perceived benefits	10-50.1	Poor	10-23.3	Before intervention	44.5833	6.22976	44.6575	4.68217
		Average	23.4-36.7	Just after intervention	44.5972	5.77674	43.8493	6.83876
		Appropriate	36.8-50.1	Two months after intervention	45.7500	3.30169	44.5205	5.89046
					0.180		0.456	
Perceived barriers	0-26.00	Poor	0-8.66	Before intervention	21.5972	5.09808	22.5616	4.11969
		Average	8.67-17.33	Just after intervention	22.8194	4.46055	22.4384	4.77548
		Appropriate	17.34-26	Two months after intervention	23.7361	5.76290	22.9315	4.65573
					0.007*		0.456	
Self efficacy	0-14	Poor	0-4.66	Before intervention	11.4444	2.39653	11.7260	2.65236
		Average	4.67-9.33	Just after intervention	11.9861	2.59736	11.4932	2.85834
		Appropriate	9.34-14	Two months after intervention	12.3333	2.12960	11.7808	2.75503
					0.015		0.506	
Behavioral intention	7-35.0	Poor	7-16.33	Before intervention	30.9028	3.46475	31.4932	2.85834
		Average	16.34-25.67	Just after intervention	31.7917	3.19744	30.2466	4.57281
		Appropriate	25.68-35.01	Two months after intervention	31.8611	3.66677	29.9726	4.26541
					0.048		0.001*	

Discussion

ANOVA test results showed that education based on HBM and behavioral intention in the refusal of high risk situations among female students had a significant increase in perceived benefits ($p = 0.007$), perceived self efficacy ($p = 0.015$), behavioral intention ($p = 0.048$) in the study group but had no noticeable effect on the perceived benefits ($p = 0.18$). In this regard, Taremian and Mehryar (2008) reported that there was a significant increase in the perceived benefits ($p = 0.007$), perceived self efficacy ($p = 0.015$), behavioral intention ($p = 0.048$) in the study group but no noticeable effect on the perceived benefits ($p = 0.18$).[15] They also reported that there was a significant difference in students' mean scores in the increase of knowledge on drug abuse, change of attitude change toward drug abuse, and attainment of related skills in the post test stage compared to the pretest stage.[15] Cabezon et al. (2005) showed that the level of pregnancy significantly decreased in the study group compared to the control group,[16] which was inconsistent with the results of the present study. The reason for the lack of a significant increase in perceived benefits in the study group can possibly be high scores of this scale before the education which laid that in category of appropriate (Table 1). This seems to be due to research limitations and existing challenges as well as the general design of the questionnaire which fitted adolescents' age. With regard to perceived barriers, Rakhshani et al. (2010) showed that HBM significantly increased refusal behavior among students in the study group after the education.[17] Lee et al. (2008) concluded that there was a significant increase in the function of alcoholic patients who received education on coping skills under social pressures and a decrease in related barriers through simulation of real life situations,[18] which is consistent with the results of the present study (a decrease in related barriers for the prevention of high risk behavior). Botvin et al.(2004) concluded that educational methods that increase social resistance skills and personal and social competency are among the most efficient methods. They indicated that primary preventive programs based on the increase of adolescents' competency, self efficacy and self confidence can play a better role in the prevention of misbehaviors during adulthood.[19]

Rosental et al. (2006) showed that capability, competency and deserve are important criteria in high risk sexual behaviors. They concluded that the ability to say no to high risk sexual behavior alone can bring about healthy sexual behavior.[20] These results are in accordance with the results of the present study, in which education was effective on the increase in perceived self efficacy.

Schwinn and Schinke (2010) concluded that adolescents who had received culture based preventive skills had lower alcoholic drinks intake and high risk behavior levels in the study group compared to the control group.[21] Botvin et al. (2001) showed that there were fewer cases of smoking (amount and frequency), alcoholic drinks, Marijuana, drunkenness, abuse of inhalators and some types of drugs in the study group compared to the control group.[22] These findings are consistent with those of the present study concerning behavioral intention (it increased behavioral intention to prevent high risk behaviors). In the present study which had the ultimate goal of enabling the adolescents in the prevention of high risk behavior, in fact, the behavioral intention in the refusal of high risk situations should increase as a result

of other research goals. Behavioral intention significantly increased from before education to just after education and then to two months after in the study group which is a satisfactory result, but its mean score significantly decreased in the control group declaring the need of this vulnerable group for awareness, comprehensive education and learning life skills especially against high risk behaviors at this age. Mean score changes (revealed by independent T-test in both groups) show behavioral intention has a higher score in the study group just after and two months after intervention compared to the control group which can prove the effects of education.

Conclusion

The results showed that education though HBM was effective on refusal skills of the students in high risk situations in the study group. It declares the necessity of educational preventive interventions for the students in order to promote their physical, emotional and social health. It is recommended that this model be included in educational programs.

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How to cite this article: Boroumandfar KH, Shabani F, Ghaffari M. **An investigation on the effect of Health Belief Model-based education on refusal skills in high risk situations among female students**. Iranian Journal of Nursing and Midwifery Research 2012; 17(3): 229-233.

Source of Support: Isfahan University of Medical Sciences, **Conflict of Interest:** None declared.