

Effect of self-care training program based on Orem's model on the behaviors leading to sexually transmitted disease in vulnerable women

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ABSTRACT

Background: Vulnerable women are prone to sexually transmitted diseases due to their high-risk behaviors. The present study aimed to investigate the effect of self-care training program based on Orem's model on the behaviors leading to sexually transmitted diseases in vulnerable women.

Materials and Methods: This field trial was initially conducted on 100 women covered under health services and welfare organization in Isfahan city, who were selected by rationing sampling. For needs assessment, they filled the self-care needs assessment questionnaire in three domains of knowledge, attitude, and practice. Then, at the stage of intervention (self-care training), 64 subjects were selected through convenient sampling and were assigned to experimental and control groups by random allocation. Data were analyzed by descriptive and analytical statistical tests through SPSS 18.

Results: Results showed that mean scores of knowledge ($P < 0.001$), attitude ($P < 0.001$), practice ($P = 0.04$), and behavior change ($P = 0.01$) were significantly higher immediately after and 3 months after intervention, compared to before intervention, but there was no significant difference in mean scores between immediately after and 3 months after intervention.

Conclusions: With regard to these results, it can be concluded that if the educational programs are planned based on clients' real needs assessment, the learners follow the educational materials, related to their problems, more seriously and it results in a notable behavior change in them.

Key words: Model, Orem self-care, sexually transmitted disease, training, vulnerable populations

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INTRODUCTION

Women are make up half the population of each country, managers and coaches, families and community activists. Therefore, their health, healthiness half of the population, families and society satisfies.^[1] Vulnerable women are at the risk of social corruption more than other women. They include addicted women, those with an addicted spouse, women or their spouses with a history of imprisonment, and women with several sexual partners or out of a family frame.^[2] In this regard,

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a study conducted on 196 poisoned women in Iran showed that 79% of them had out of marriage sexual relationship.^[3] Addicted women and prostitutes^[4,5] are at risk of high-risk behavioral outcomes such as sexually transmitted diseases (STDs), infectious diseases, and miserable outcomes such as an unwanted pregnancy, a high risk of cervix cancer,^[6] ectopic pregnancy, infertility, and pelvic inflammatory diseases.^[7] They are also predisposed to the most common, complicated, and risky diseases such as hepatitis, genital herpes, and AIDS. Involvement in each of these diseases brings about probability of incidence of others.^[8] In the study of Sajadi *et al.* conducted in 14 cities in Iran, prevalence of HIV was found to be 4.5% among prostitutes with no history of injection addiction.^[9] Meanwhile, Platt *et al.*, in a meta-analysis study in Europe, reported a prevalence less than 1%.^[10] Kazerooni *et al.* showed that herpes type two and Chlamydia had prevalence of 9.7% and 9%, respectively.^[11] Meanwhile, Perla *et al.* reported that prevalence rates of herpes type two, Candida, and vaginal bacterial infection were 80%, 10%, and 44.8%, respectively.^[12] Other studies showed that high-risk sexual behaviors impair mental health and emotional and behavioral balance among those involved. High-risk behavior refers to having several sexual partners, no use of condom to prevent STDs, and other risky behaviors such as smoking, drug abuse, and consumption of alcohol.^[13] A qualitative study in Iran showed that unprotected sexual relationship (use of no condom) is common among injection addicts.^[14] Research shows that prostitutes have poor healthy behaviors, and due to their vast communication with others, especially teenagers, contaminate more individuals.^[15] The World Health Organization and the United Nations emphasized on combined health care including education conducted by peers, empowerment, more use of condom, and treatment of STDs in high-risk groups, including vulnerable women.^[17] In this regard, self-care education as an important approach for prevention and control of high-risk behaviors and their consequences is suggested.^[15] Self-care is an activity Performed by the individuals to promote health, prevent diseases, limit the disease, and maintain health.

On the other hand, self-care can be conducted with no need for professional help, if learned adequately.^[18] In this regard, Orem self-care model is one of the most complete models, which suggests appropriate clinical guidance to plan and administrate self-care among clients.^[19,20] Rostami *et al.* showed a significant increase in all dimensions of older adults' quality of life (QOL) through Orem model, including general health, physical function, playing physical role, playing emotional role, social function, physical pain, power and energy, general perception of health, and mean overall QOL, compared to before education.^[21] Masoudi *et al.* showed that application of a self-care program, designed based on Orem model, had a positive effect

on self-esteem among patients.^[22] A study by Hajiagha *et al.* on the effect of education based on the theory of planned behavior skills for HIV prevention in adolescents showed no significant difference in subjects' knowledge, intention, attitude, abstract norm, and control of perceived behavior between the study and control groups before educational intervention, while there was a significant increase in these variables in the intervention group after intervention^[23] ($P < 0.001$). With regard to the outcomes of STDs in women, especially vulnerable women at risk of development and carrying these diseases, and, on the other hand, in young population of Iran, and increased incidence of life-threatening diseases such as AIDS day after day,^[24] a self-care program, designed based on individuals' needs, can act as the best tool to increase knowledge, attitude, and practice, and consequently, lead to prevention of STDs and high-risk behaviors.^[25] Women's role in their own self-care and their family members' care is of great importance and their vast presence in official health activities plays a pivotal role in the success of health and public health system.^[26] Therefore, as control and prevention of the behaviors leading to STDs is associated with cultural, social, and religious background in each society, the present study aimed to investigate the mean scores of knowledge, attitude, practice, and behavior change concerning STDs in vulnerable women before, immediately after, and 3 months after administration of a self-care program.

MATERIALS AND METHODS

This is a clinical field trial conducted in 2014 to investigate the effect of independent variable of self-care program on the dependent variable of behavior change in vulnerable women concerning STDs in Isfahan. This is a two-group, four-stage (assessment, planning, administration, and evaluation) and multivariable study with a before, immediately after, and 3 months after intervention design. Sampling in assessment stage was conducted through census sampling in which 100 women under coverage of well-being center and vulnerable women counseling centers were selected. Inclusion criteria were: Having at least one condition of being on methadone for cessation of addiction or prostitution, having complete consciousness, not taking psychotropic medications, being interested in participating in the study, age group between 18 and 49 years, having at least primary school education, and ability to answer the questions and discuss in educational classes. Absence in more than two sessions of educational classes, loss of interest to continue with the study, and being poisoned were considered as the exclusion criteria. Data were collected by a researcher-made questionnaire containing demographic characteristics (age, age at first marriage, age at the first sexual experience, level of education, and residence status) and a questionnaire assessing women's

knowledge (24 items), attitude (12 items), and practice (12 items) about STDs. After literature review and primary designing, its content validity and reliability were confirmed by 10 experts pre-test and post-test with a 1-week interval and by 15 vulnerable women, respectively. Cronbach alpha was adopted for internal consistency of the questionnaire. It was 0.829 for knowledge, 0.796 for attitude, and 0.834 for practice. In the domain of knowledge, which had the options of “yes,” “no,” and “no idea,” “yes” was scored 1, and “no” and “no idea” were scored zero, with total scores ranging between 0 and 24. To have more clear results, the scores were multiplied by 100 and divided by 24 to obtain scores between 0 and 100. In the domain of attitude, the items were scored by a five-point Likert’s scale (absolutely agree = 4 and absolutely disagree = 0) ranging between 0 and 48. The scores were converted to 0–100 criterion for more convenience of understanding. In the domain of practice, there were three options of “I never do” (0), “I sometimes do” (1), and “I always do” (2), ranging between 0 and 24, which were converted to 0–100 for more clarity. To measure subjects’ behavior change, the mean scores of knowledge, attitude, and practice concerning STDs were calculated in the intervention stage and were divided by 3 so that behavior change (outcomes of knowledge, attitude, and practice) was obtained.^[27] Firstly, the researcher was introduced to the vice-chancellery for research and the vice-chancellery for health (communicable diseases department) as well as to Isfahan well-being organization, and after taking a written introduction letter, was referred to vulnerable women’s counseling centers no. 1 and 2 authorities under coverage of vice-chancellery for health and to the authorities of Isfahan social security services office under coverage of well-being organization. Researcher explained the research goals to them. If there was needs assessment, the authorities were asked whether an identical education or a needs assessment-based education was conducted. Researcher’s educational content was based on needs assessment. Based on Orem model, in the first stage (assessment), subjects’ needs concerning behaviors leading to STDs in the three domains of knowledge, attitude, and practice were determined and prioritized. In the second stage (planning), content of self-care need-based educational program was designed. It included women’s anatomy and physiology, men’s anatomy and physiology, function of uterine in menstruation and pregnancy and condition of having sex in this period, healthy and high-risk behaviors, post rape interventions, familiarization with types of contamination and transmission ways, diagnosis, and individuals’ care and treatment in STDs. In the third stage (administration), education and intervention were conducted from Jan 2014 to Oct 2014. Before intervention, during completion of personal characteristics, and knowledge, attitude, and practice concerning STD questionnaires, the time of

administration and the subject and content of educational program were explained to the subjects. Then, education was administered by the researcher in the form of eleven 60-min sessions, through personal (face-to-face) and group education (lecture, group discussion, picture presentation, role play, and questions and answers).

After the end of each session, there was 1–2 h of Q and A debugging. Finally, subjects’ questions were answered through phone calls and SMS for 3 months. In the control group, after the end of intervention, a 4-h session was held on general issues concerning diseases. In the fourth stage (evaluation), subjects (control and study groups) completed the knowledge, attitude, and practice questionnaire immediately after and 3 months after intervention. Collected data were analyzed by descriptive and inferential [Chi-square, Mann–Whitney, repeated measures analysis of variance (ANOVA), and independent *t*-test]. We applied the Statistical Package for Social Sciences SPSS Version 18.0 (Inc., Chicago, IL, USA) for data analysis. A value of $P < 0.05$ was considered significant.

Ethical considerations

Ethical considerations were respected by obtaining permission from the vice-chancellery for research in Isfahan University of Medical Sciences, ethics committee, vice-chancellery for health, and Isfahan well-being organization, as well as by obtaining a written consent from the subjects. Researcher conducted sampling alone due to specific condition of the subjects during the entire study and tried to keep subjects’ information confidential. The subjects could leave the study whenever they wanted to.

RESULTS

Mean (SD) of subjects’ age was 33.51 (6.74) years. The age at first marriage was 17.44 (3.92) years and the age at first sexual experience was 17.46 (3.92) years. Subjects’ highest education was at primary school level (39%); their residential status was rented (49%), 64% were homemakers, and 49% were married. Repeated measures ANOVA showed no significant difference in mean scores of knowledge before, immediately after, and 3 months after self-care education about STD in the control group ($P = 0.11$). Meanwhile, the difference was significant in the study group before, immediately after, and 3 months after intervention ($P < 0.001$). Least significant difference (LSD) *post hoc* test showed a significant increase in mean scores of knowledge immediately after and 3 months after intervention, compared to before intervention ($P < 0.001$), but the difference was not significant between immediately after and 3 months after intervention ($P > 0.05$) [Table 1]. Repeated measures ANOVA showed no significant

difference in mean scores of attitude before, immediately after, and 3 months after self-care education in the control group ($P = 0.41$), while in the study group, the difference was significant ($P < 0.001$). LSD *post hoc* test showed a significant increase in mean scores of attitude immediately after and 3 months after intervention, compared to before intervention ($P < 0.001$), but the difference was not significant between immediately after and 3 months after intervention ($P > 0.05$) [Table 2]. Repeated measures ANOVA showed no significant difference in mean scores of practice before, immediately after, and 3 months after intervention in the control group ($P = 0.28$), while in the study group, this difference was significant ($P = 0.04$). LSD *post hoc* test showed a significant increase in mean scores of practice immediately after and 3 months after intervention, compared to before intervention ($P < 0.05$), but the difference was not significant between immediately after and 3 months after intervention ($P > 0.05$) [Table 3]. Repeated

measures ANOVA showed no significant difference in mean behavior change scores (outcomes of knowledge, attitude, and practice based on Orem model) before, immediately after, and 3 months after intervention in the control group ($P = 0.18$), while in the study group, this difference was significant ($P = 0.01$). LSD *post hoc* test showed a significant increase in mean behavior change scores immediately after and 3 months after intervention, compared to before intervention ($P < 0.05$), while this difference was not significant immediately after and 3 months after intervention ($P > 0.05$) [Table 4].

DISCUSSION

Results showed that vulnerable women's knowledge about STDs was higher before and after intervention in the study group, compared to that of women in the control group. Niknami *et al.*,^[28] in a study on the effect of health

Table 1: Distribution of knowledge level for behavioral change leading to venereal diseases in the experimental and control groups, before, immediately after, and 3 months after intervention

Group	Knowledge	Before intervention		Instantly after intervention		3 months after intervention	
		Number	Percentage	Number	Percentage	Number	Percentage
Experimental	Low	17	53.1	0	0	0	0
	Moderate	15	46.9	1	3.1	0	0
	High	0	0	31	96.9	32	100
Control	Low	21	65.6	16	50	19	59.4
	Moderate	10	31.2	15	46.9	12	37.5
	High	11	3.1	1	3.1	1	3.1

Table 2: Distribution of attitude level for behavioral change leading to venereal diseases in the experimental and control groups, before, immediately after, and 3 months after intervention

Group	Attitude	Before intervention		Instantly after intervention		3 months after intervention	
		Number	Percentage	Number	Percentage	Number	Percentage
Experimental	Low	24	75	18	56.2	16	50
	Moderate	8	25	14	43.8	16	50
	High	-	-	0	0	0	0
Control	Low	11	34.4	4	12.5	4	12.5
	Moderate	21	65.6	27	84.4	27	84.4
	High	-	-	1	3.1	1	3.1

Table 3: Distribution of practice level for behavioral change leading to venereal diseases in the experimental and control groups, before, instantly, and 3 months after intervention

Group	Practice	Before intervention		Instantly after intervention		3 months after intervention	
		Number	Percentage	Number	Percentage	Number	Percentage
Experimental	Low	6	18.8	0	0	1	3.1
	Moderate	18	56.2	2	6.2	4	12.5
	High	8	25	30	93.8	27	84.4
Control	Low	1	3.1	2	6.2	2	6.2
	Moderate	17	53.1	14	43.8	17	53.1
	High	14	43.8	16	50	13	40.6

Table 4: Distribution of self-care ability level for behavioral change leading to venereal diseases in the experimental and control groups, before, immediately after, and 3 months after intervention

Group	Behavior change	Before intervention		Instantly after intervention		3 months after intervention	
		Number	Percentage	Number	Percentage	Number	Percentage
Experimental	Low	10	31.2	0	0	0	0
	Moderate	22	68.8	14	43.8	10	31.2
	High	-	-	18	56.2	22	68.8
Control	Low	9	28.1	4	12.5	5	15.6
	Moderate	23	71.9	28	87.5	27	84.4
	High	-	-	0	0	0	0

education program on preventing AIDS in self-reported addicts' wives in Kermanshah, Iran, reported a significant association between subjects' level of knowledge before and after administrated education ($P < 0.001$).^[29] Pasyar and Gholamzadeh, in a study on the effect of education on nurses' knowledge and performance regarding AIDS in the emergency departments of hospitals affiliated to Shiraz University of Medical Sciences, observed a significant increase in nurses' knowledge immediately after and 1 month after education, compared to before education ($P < 0.001$). Nonoyama *et al.*, in a study on the effect of sex-related information for STD prevention, showed that education was effective on increasing adolescents' knowledge. Their findings emphasized on filling the gap between the information transferred to the subjects and their needs.^[30] Findings of the present study showed that vulnerable women's attitude was higher in the study group before and after intervention, compared to that in control group women. Sari *et al.* showed that 61% of the women who had illicit sexual relationship, tear of condom, or unprotected sex referring to laboratory for STD test suffered from fear, concerns, and anxiety disorders (52% depression and 52% anxiety).^[31]

Ghaffari *et al.*, in a study on the effect of educational program on HIV/AIDS-related knowledge, attitude, and behavioral intentions of male high school students, showed that subjects' education had a positive effect on their attitude concerning safe sexual behaviors^[32] ($P < 0.05$). Results showed that vulnerable women's functioning was higher before and after intervention in the study group, compared to that in control group women. Jadgal *et al.*, in a study on the effect of health education according to the theory of planned behavior on malaria-preventive behavior in Chabahar, Iran, showed that educational intervention had a significant effect on increase of safe sexual behavior during 2 months after intervention ($P < 0.05$).^[33] Hajiagha *et al.*, in a study on the effect of education based on the theory of planned behavior skills in adolescents, showed no significant difference in subjects' knowledge, intention, abstract norm, and perceived behavioral control before intervention, while

there was a significant increase after intervention ($P < 0.001$).^[23] The above-mentioned studies prove that a health education program is effective on promotion of individuals' knowledge, attitude, and positive function. Researcher believes that if education-based preventive interventions are based on the learners' needs and culture, better learning occurs and learners step toward health more eagerly. Findings of the present study also showed that ability of self-care was more effective on behaviors leading to STDs in vulnerable women before and after intervention in the study group, compared to that in control group women. It seems that through administration of a self-care educational program, based on Orem model in regard with STDs, some high-risk behaviors are changed due to presentation of educational content based on individuals' physical and mental needs.

It was also observed in the outcomes of subjects' knowledge, attitude, and practice in the form of self-care ability. Youngkin and Lester, in a study on promoting self-care and secondary prevention in women's health concerning self-examination of bacterial vaginosis in USA, showed that subjects' power in secondary prevention of this disease was improved through basic education and use of bacterial vaginosis self-examination kit.^[34] Zamora *et al.*, in a study on determination of educational program on STD and self-care behavior in adolescents, showed that educational program based on adolescents' needs could act as the best tool to promote knowledge, attitude, and practice, and consequently, application of self-care behavior toward prevention of STDs and high-risk behavior.^[25] Based on the results obtained in the present study and in other studies, it can be inferred that personal and group self-care educational sessions, conducted for those involved in or predisposed to STDs, can be a beneficial action to promote recognition and knowledge and to reduce self-care defects among vulnerable women in the society. Subjects' personal, cultural, internal conditions and their different understanding from educational materials in sessions and various life expectations might have been effective on the research results and are among research limitations.

CONCLUSION

With regard to the results, promotion of self-care educational program, based on educational needs, can bring about a notable decrease in problems, and detect and treat the patients or those at its risk in a timely manner. Health care and disease prevention systems are suggested in this context to reduce the behaviors leading to STDs and make a background to prevent such behaviors through self-care needs education.

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Conflicts of interest

There are no conflicts of interest.

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