

ORIGINAL RESEARCH**Comparing the effects of group discussion and lecture educational methods on preventive behaviors of high blood pressure in Eslamshahr women**

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Abstract

Introduction: Nowadays, high blood pressure is a major risky factor for heart disease, stroke and kidney diseases and education is one of the effective factors that reduces high blood pressure. This study was designed and conducted to compare the effects of group discussion and lecture methods on preventive behaviors of high blood pressure in Eslamshahr school students' mothers.

Materials & Methods: In this experimental study, a two-stage cluster sampling was conducted and 168 students were selected. Then, these students were divided into three groups of 56 members each. In addition, their mothers were invited to participate in the study. Samples into three groups (two case groups and a control group) were divided into three stages and with a questionnaire which consists of demographic information questions and questions related to knowledge, attitude, behavior developed by the researcher, were evaluated. provide educational content, lectures and group discussion methods were to used. Data collected using software SPSS-21 and ANOVA, chi-square test and Kruskal-Wallis test were used.

Results: The test showed significant differences between the two methods in the confidence level of 0.95, so that the ratings of knowledge and attitudes and preventive behaviors were higher in group discussion ($p < 0.001$). These results suggest that education in group discussion in comparison with lecture method is more effective and encouraging.

Conclusion: The results showed that the group discussion method is more effective than lecture is. therefore recommended to pay more attention to high blood pressure in mothers, in this educational method, especially in the education of preventive behaviors.

Keywords: High blood pressure, Knowledge, Attitude, Behavior, Education

Introduction

High blood pressure is a public health problem in the world, impacting on more than a third of adults within 25 years and older and the number one cause of early death and disability in the causes of death in the world [1]. The prevalence of high blood pressure in both sexes in 1390 in Iran was 29.8% [2]. This disease is the most common heart disease that often leads to stroke, heart attack, kidney failure and early death [3-5]. High blood pressure, systolic blood pressure is 140 mm Hg or higher and diastolic blood pressure is 90 mmHg and higher [6]. Many factors are involved in developing high blood pressure, including failure to comply with health behaviors, poor diet, physical inactivity, obesity, stress, diabetes, inappropriate behavior, genetics, age, sex [7,8] as well as social factors [9]. High blood pressure can be prevented, which requires political will and efforts of health workers in the public sector, the scientific research community, civil society, the private sector, families and individuals. Community-based programs, such as regular reviews of health and health promotion campaigns targeting healthy lifestyle, help to lower high blood pressure and stroke [10]. Proper educational methods to raise awareness and create positive attitudes and ultimately perform the desired behavior play an important role in the prevention of high blood pressure. Instructing via group discussion allows students to express their ideas and views and, this technique promotes a variety of learning such as learning content, skills, attitudes and processes and can be used as a method for improving the health of people due to promoting a meaningful interaction. Lecturing, a common method, is cheap and can be greatly adapted with the educational program [11]. In a study entitled "The impact of group discussion with high school students in the lifestyle of their parents having high blood pressure" it was shown that group discussions with high school students about diet, regular walks and high blood pressure medication by parents have had a positive effect [12]. Also, a study entitled "The Effect of Educational Program Based on BASNEF Model on Women's Blood Pressure with Hypertension" showed that the use of this educational model via having a lecture has been effective to lower blood pressure of

patients [13]. Due to exposure to risky factors in adolescence and adulthood such as smoking, sedentary lifestyle, many women's health problems increase with age and, therefore, unhealthy diet increases and the development of preventive and curative services for chronic diseases which are on the rise among women would be necessary [14]. Iranian women are not excluded from this category and holding useful and effective educational classes for this group of people is necessary. This study aimed to investigate the effects of two educational methods on knowledge, attitude and preventive behaviors of high blood pressure in mothers.

Materials and Methods

In this experimental study, participants were mothers of elementary school students of Eslamshar city and informed consent was obtained from all study participants. The criteria to continue participating in the study are mothers' wish, aged 20- 49 years, with at least one school child, without high blood pressure, and having the certificate of primary school. Criteria for exclusion from this study include unwillingness to continue the cooperation and participation of the mothers in the study, and failure to respond to at least 20% of the pre-test questions. The target group was selected using two-stage cluster sampling. Based on Eslamshahr schools' geographic location, the map was prepared and according to the socio-economic structure of the city which is homogeneous, the map was divided into three equal parts. In the center of each of these three sections, girl and boy schools were determined and from the list, a girl school and a boy school were randomly selected and each of the selected schools was randomly assigned to one of methods including the control group, group discussion, and lecture group. Then from the degree of the selected schools, a class randomly selected and based on the list, 11 students were randomly selected (5 girls and 6 boys) and invitation cards were distributed among them for their mothers. The sample size based on previous studies [15] and the $\alpha=0/05$ $\beta=0/1$, $s= 2/4$ $d=2$ number of samples, including 20% loss, 56 persons in each group (case and control) were estimated. In this study, a questionnaire that included demographic questions of the study population (age, employment status, spouse's job, and

spouse's education) and questions related to knowledge, attitude and behavior were designed. 30 questions on knowledge with a minimum score of 1 and a maximum of 3; 20 attitude questions with scores ranging between 1 to 5; and 8 questions of behavior ranging between 1 to 4 scores respectively. The above-mentioned questionnaire was developed according to sources, authentic books and experts' approval (5 experts in health education and health promotion, an epidemiologist, a cardiology specialist and two of the researchers who have worked in connection with the subject) and demystifying ambiguities and problems and its validity was confirmed. The Test-retest methods and internal consistency (Cronbach's alpha) were used in order to make the questionnaire stable and reliable. The development of the educational content was based on the analysis of educational needs assessment in the pre-test results. Educational interventions for the discussion group in two sessions of 60 minutes in groups of 10 students and a group of 8 people for mothers and two sessions of 50 minutes using a lecture in the form of questions and answers related to the subject during one month in selected schools were conducted. In the control group, no intervention happened. Immediately after finishing the intervention, the primary intervention was done and again after 2 months, the initial post-test questionnaires were distributed in both the experimental group and control group and subsequently the data were collected. To assess the educational benefits, the data in each of the three stages before, immediately and two months after the intervention of statistical software SPSS-21 and ANOVA with repeated observations for balancing the effects of demographic variables on the impact of education on knowledge, attitude and behavior, the Kruskal-Wallis tests were used for the purpose of comparison and analysis.

Results

In this study, before the educational intervention, mothers of three groups in terms of age, occupation, education level were studied, and there were not any significant differences between knowledge and attitude, but there is a minute difference between two

groups of lecture and control in terms of the structure of the behavior. The average age of mothers ranging 34.97 ± 5.66 (Table 1) and 96.04% of mothers were housewives (Table 2).

Table1. The age distribution of mothers in the control and test groups

The significant level of Analysis of Variance	Median	Standard deviation	Mean	Groups
p-value =0.57	35	38.5	39.35	Discussion
	5.32	72.5	33.34	Lecture
	35	88.5	21.32	Control
	16.34	66.5	97.34	Total

Table2. The job distribution of mothers in the control and test groups

Fisher's exact test significance level	Job		Groups
	Housewife	Practitioner	
p-value = 0.21	51 (91.7%)	5 (8.3%)	Discussion
	55 (98.21%)	1 (1.79%)	Lecture
	55 (98.21%)	1 (1.79%)	Control
	161 (96.04%)	7 (3.96%)	Total

The results also show that the education level of more participants 72.6% was diploma and higher diploma (Table 3).

Table 3. The education distribution of mothers in the control and test groups

Chi-square significant level.	Education		Group
	Diploma and higher Diploma	had not graduated from high school	
p-value=0.06	47(83.9%)	9(16.1%)	Discussion
	43(76.8%)	13(23.2%)	Lecture
	32(57.1%)	24(42.9%)	Control
	122(72.6%)	46(27.4%)	Total

To check the mean scores of knowledge and attitude before implementing educational intervention according to the results of ANOVA and Kruskal-Wallis was not significantly correlated ($=0.09$) (Table 4), ($p=0.55$) (Table 5). However, this finding was significant for the behavior of structures ($p=0.03$) (Table 6).

Table 4. Mean, standard deviation and significant levels for scores of knowledge structure in three groups at three times

2 months after the intervention	Immediately after the intervention	Before the intervention	Group
Mean ± SD	Mean ± SD	Mean ± SD	
2.78 ±0.24	2.93 ±0.1	2.39 ±0.26	Discussion
2.75 ±0.19	2.86 ±0.12	2.50 ±0.21	Lecture
2.46 ±0.26	2.43 ±0.29	2.44 ±0.28	Control
p-value=0.000	p-value=0.000	p=0.09	The significant level of analysis variance

Table 5. Mean, standard deviation and significant levels scores of attitude in three groups at three times

2 months after the intervention	Immediately after the intervention	Before the intervention	Group
Mean±SD	Mean±SD	Mean±SD	
4.48 ±0.45	4.72 ±0.31	3.89 ±0.48	Discussion
4.39 ±0.43	4.49 ±0.33	3.95 ±0.33	Lecture
3.99 ±0.45	4 ±0.47	3.98 ±0.45	Control
p-value=0.000	p-value=0.000	p=0.55	The significant level of analysis variance

Table 6. Mean, standard deviation and significant levels scores of behavior in three groups at three times

2 months after the intervention	Immediately after the intervention	Before the intervention	Group
Mean ± SD	Mean ± SD	Mean ± SD	
2.99 ±0.35	2.93 ±0.44	2.78 ±0.44	Discussion
2.91 ±0.34	2.88 ±0.32	2.84 ±0.34	Lecture
2.65 ±0.37	2.67 ±0.38	2.64 ±0.41	Control
p-value=0.000	p-value=0.000	p=0.03	The significant level of analysis variance

The mean scores of knowledge before, immediately, and two months after the educational intervention in group discussion were 2.39 ± 0.26 , 2.93 ± 0.27 , 2.78 ± 0.24 and these scores for lecture group were 2.50 ± 0.21 , 2.86 ± 0.12 , 2.75 ± 0.19 respectively (Table 4). Mean attitude scores before, immediately, and two months after the educational intervention in group discussion 3.89 ± 0.48 , 4.72 ± 0.31 , 4.48 ± 0.45 and in group lecture 3.95 ± 0.33 , 4.49 ± 0.33 , 4.39 ± 0.43 respectively (Table 5). Also the mean behavior scores before, immediately, and two months after in the group discussion were 2.78 ± 0.44 , 2.93 ± 0.44 , 2.99 ± 0.35 and in group lecture 2.84 ± 0.34 , 2.88 ± 0.32 , 2.91 ± 0.34 respectively (Table 6). The results indicate the effectiveness of education in educational groups. The impact was greater in group discussion rather than lecture group.

Discussion

Demographically, Mothers in the study in the control and test groups were similar. The mean and standard deviation, the people's ages in groups of discussion and lecture were (35.39 and 5.38) and (34.33 and 5.72) and in the control group (32.21 and 5.88), respectively (Table 1). Most of the subjects in the experimental groups (group discussions 91.7% and lectures (98.21%) and control (98.21%) were housewives and only 8.3% of discussion group and 1.79% of lecture and 1.79% of the control group were employed (Table 2). The results also showed that in the majority of researching units, the education level of participants were diploma and higher and the rest in the study had not graduated from high school. Mentioned values for the experimental discussion group (83.9% and 16.1%) and lecture (76.8% and 23.2%) and control group (57.1% and 42.9%), respectively (Table 3). The mean score of mothers' knowledge participating in group discussion before education than the other two groups were

lowest, but they gained a significant and high score immediately after education. There was also this difference in the lecture group, but had a lower score than the group discussion. Two months later, we are faced with the decrease of the mean scores of the educational groups, but still the score of knowledge after two months in the intervention group was more than before and the score of knowledge of group-discussion was more than lecture group (Figure 1). The results show the effectiveness of educational interventions to increase educational sustainability and awareness regarding the prevention of hypertension in experimental groups compared to the control group. The effectiveness of educational interventions to increase positive attitudes and sustainability education regarding the prevention of high blood pressure in the test group than the control group according to the results was evident. That's why the mean score of attitude in the pre-test was low, but immediately after education, high and noteworthy scores were gained. The increase was higher in the group discussion than the lecture group. Two months after the intervention, we could see decrease in the mean score of attitude in departments, but still, two months later, the attitude score in the intervention group was higher than before education and the attitude score of group discussion more than the lecture group (Figure 2). Although the three groups before the intervention had little difference in mean scores of behavior. But after the intervention, ratings and test groups were higher than the control group and the mean scores of participants in the group discussion was higher than the lecture group. Two months after the intervention, we are facing with the increase of the mean scores of two groups, which was higher and more than before education and behavior score of the group discussion was higher than the lecture group (Figure 3). The results could indicate the effectiveness of educational interventions in order to promote education sustainability in the prevention of high blood pressure in experimental groups compared to the control group. It seems that the discussion in small groups causes a dependency on members of the group, equal opportunity for free expression of ideas, brainstorming, collective effort and struggle, efforts to adapt the group and an increase in

the power of analysis in mothers. [11] Aghapour and colleagues also comparing the effects of lecture and group discussion on midwifery students with significant learning, showed learning enhance using group discussion method than the lecture method [16]. The results of the study of Arias and colleagues showed that students in the small-group discussion groups scored significantly higher than those in the lecture groups especially when skill performance was tested [17] and Mahram and colleagues show the efficiency of education to group discussion rather than lecture method [18]. The findings of the study conducted by Bafghi and colleagues also show significant increase in both teaching groups of lecture and discussion group but the amount of learning through group discussion was much higher than the one through lecture [19]. All these findings are also in line with the findings of present research. Research was carried out by Esfihankalaty and colleagues entitled as “the comparison of the lecture and group discussion on raising knowledge and awareness of pregnant women in Gorgan”. It was shown that ‘there was no significant relationship between lecture group and group discussion and the knowledge of pregnant women before and after training in both methods was moderate that do not match with this study [20] and according to Shirazi and Rahim Khani [21] perhaps could be suggested that the

probable cause of the incompatibility of the current study with similar studies is the variety of measuring devices, implementation and duration of the intervention and the duration of the test in the post-intervention phase [22].

Conclusion

The results of the current study showed that the designed educational intervention has had significant and sustainable effects on knowledge, attitude and preventive behaviors from high blood pressure in the experimental groups and this effect was greater in group discussion. In other words, education using group discussion method was more effective than lecture-based education. According to the results of this study, it is suggested that the group discussion should be used in educational programs on the prevention of high blood pressure.

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Conflict of interest

Authors declare no conflict of interest.

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