SPER Publications and Solutions Pvt. Ltd.

Original Article

Structured health education for Iranian female high school students: effect on self-esteem

Hoda Mokari [1], Shiva Khaleghparast [2]*, Behrooz Ghanbari [3], Behshid Ghadrdoost [4], Amir Reza Azizian [5], Zahra Hanifi [2], Shabnam Zafari [2]

[1] Nursing Care Research Center, Iran University of Medical Sciences, Tehran, Iran, [2] Rajaie Cardiovascular Medical and Research Center, Iran University of Medical Sciences, Tehran, Iran, [3] Gastrointestinal and liver Diseases Research Center, Firoozgar Hospital, Iran University of Medical Sciences, Tehran, Iran, [4] Department of Medical Physiology, Iran University of Medical Sciences, Tehran, Iran, [5] Department of Community Health and Epidemiology, University of Saskatchewan Saskatoon, Saskatchewan, Canada.

Correspondence: Shiva Khaleghparast, Rajaie Cardiovascular Medical and Research Center, Iran University of Medical Sciences, Tehran, Iran. Email: sh_khaleghparast@yahoo.com

ABSTRACT

Background: Health education in adolescence is important in which critical transitions from childhood to adulthood occur. These developmental transitions range from a marked increase in growth rate and physiological changes to movement toward economic and social independence. One of the most influential elements on this development is the self-esteem of a teenager. This study aims to determine if structured health education for Iranian female high school students will affect their self-esteem. Methods: This study was a longitudinal pre- and post-intervention three-step self-assessment survey study. Participants consisted of 159 female students between 15 to 18 years of age. They were selected from two public high schools in Tehran, Iran, and randomly allocated to intervention and control groups. Students in the intervention group received structured education on adolescent health, whereas those in the control group only received the standard educational curriculum. Baseline pre- and post-intervention questionnaires were obtained immediately before and after the structured education from all students. An additional follow-up questionnaire was completed by all students after three months of the structured education. Results: Eighty-six students with mean age of 14.98 ± 0.67 and seventy-three students with mean age of 15.15 ± 0.75 ($p=0.16$) were allocated to the intervention and control groups, respectively. Repeated measured ANOVA showed that the trend of changes of self-esteem score in intervention group was statistically significant ($p<0.001$). Conclusion: Structured adolescent health education increased the average score of the self-esteem of Iranian female high school students.

Keywords: Self-esteem, adolescent health, structured education, female students.

Introduction

Introduce the Problem

Being a teenager is one of the most sensitive and critical stages of human life. Teenagers have passed their childhood and entered into a new stage of life which poses several challenges to any individual [1]. Particularly, the most important change and transition of being a teenager, which is known as the milestone of teenager life, is adolescence. During this period, consistency turns into chaos, and the physical and mental symptoms of adolescence appear subsequently [2]. Certain issues such as confusion and decrease in self-esteem arise while the individual faces the new situation [3]. Low self-esteem leads to isolation, depression, aggression, and anti-social behaviors, while high self-esteem creates sense of self-confidence which allows an individual to adapt with difficult situations in life and acknowledge the sense of competency, successfulness, and happiness [4-6].

Explore Importance of the Problem

One of the most important issues in educating teenagers is a lack of receiving appropriate and adequate education from

Access this article online	
Website: www.japer.in	**E-ISSN:** 2249-3379

How to cite this article: Hoda Mokari , Shiva Khaleghparast, Behrooz Ghanbari, Behshid Ghadrdoost, Amir Reza Azizian, Zahra Hanifi, Shabnam Zafari. Structured health education for Iranian female high school students: effect on self-esteem. J Adv Pharm Edu Res 2018;8(S2):58-65.
Source of Support: Nil, Conflict of Interest: None declared.

standardized, reliable, and well-designed information resources regarding adolescent health [7]. There is evidence that several factors including families, schools, friends, educational organizations, and social communication means can play essential roles on providing teenagers with resources to being mentally and physically secure and healthy [3, 8].

Objective

Structured health education in adolescence seems to be crucial and effective to mitigate the fear of the new situation and to convey appropriate health information [9]. This study aims to determine the effect of structured adolescent health education on self-esteem of female teenagers to help authorities design relevant educational protocols.

Methods

Study Design and Participants

This study was a longitudinal pre- and post-intervention self-assessment survey study conducted in 2014 in Tehran, Iran. The research population consisted of 159 female students aged between 15 and 18 years from two public high schools located at the same urban area in the city of Tehran. Inclusion criteria were mental and physical health, menarche, living with biological parents, no history of drug abuse, no history of educational failure, no history of adolescent health education, and no traumatic events in the last three months confirmed by individuals' medical records. Exclusion criteria included withdrawing consent from participating in the study by students and/or their parents, being absent for more than two sessions in the educational classes, and stressful events during the study period (Figure 1). A written informed consent form was collected from each participant and her parents. Three students were excluded because their parents withdraw their consent from participating during study and they had more than two sessions of absence.

After approval of the Ethics committee of the Tehran University of Medical Sciences and a consent of a planning manager of the Education Department in the Ministry of Education, two public female high schools amongst 28 schools in the northeast area were randomly selected (Figure 2).

One school was randomly selected as a control and the other was considered as an intervention group. In each school, all students of three randomly-selected Grade 9 classes who were eligible to the study were enrolled. In control group, all students only received the standard educational curriculum approved by the Ministry of Education, and the study researcher had no influence on programs of the school.

Study Protocol

The structured health education of the study consisted of six sessions: five 60-minute sessions for students and one 90-minute session for parents. They were held on Mondays and Wednesdays at the intervention school. Topics of the sessions from the first session through the last session included an introduction to adolescence, menstrual health, pre-menstrual syndrome and menstrual pain, nutrition during adolescence, mental health, and sexual education for parents, respectively. The teaching methods of these sessions were a combination of focused group discussions, lectures, and one-on-one question-answer sessions. For the purpose of assessing and following up on self-esteem scores, questionnaires of the study were distributed in both groups by the study researcher in three phases: before educational sessions of the study, after completion of all educational sessions, and three months later following the educational sessions.

Questionnaire

The study questionnaire consisted of two sections. The first section evaluated personal profile of the study subjects including students' age, their parents' age, their parents' educational levels, and the number of family members via 12 questions. The second part was designed as per the Coopersmith self-esteem scale questionnaire [10]. This part of the questionnaire included 58 questions on 5 main subjects: social relationships, family relationships, self-perception, future perception, and personal responsibility performance. The question types were Yes/No questions with eight neutral questions to detect lie. These eight neutral questions had no applicable scores on the final grading. The rest of questions were divided into two sections: 19 questions were received a positive score if a student answered yes, while the remaining 31 questions were scored positive if a student answered no. In total, each participant could have a score scale between 0 and 50 in which a grade closer to 50 indicated higher self-esteem and a closer grade to zero represented lower self-esteem.

Statistical Analysis

Statistical analysis was performed with IBM SPSS Statistics for Windows, Version 22.0. (Armonk, NY: IBM Corp). All variables were tested for normal distribution with Kolmogorov-Smirnov test. Categorical variables were compared by Chi-square test or Fisher's exact test, if applicable. To compare means of variables between two groups, Independent t-test or Mann-Whitney U test was used. Repeated measure ANOVA followed by Benferroni post-test was used to assess parametric distributions. Multivariate logistic regression was also used to adjust the confounding factors. P value<0.05 was considered as statistically significant level.

Results

Structured Health Education Effect

The socio-demographic and family characteristics of students in both groups are shown in Table 1. In univariate analysis, mother's age was significantly higher in control group in comparison with intervention group (p=0.01). Father's educational status were statistically different between groups (p<0.001). Changes in the self-esteem scores during the study are summarized in Table 2. Before the intervention, there were

no statistically significant differences in mean self-esteem scores between two groups (29.66 in the intervention group versus 30.58 in the control group, p=0.41). Repeated measured ANOVA test showed that the trend of changes of self-esteem scores in the intervention group was statistically significant (p<0.001). However, self-esteem scores did not demonstrate significant changes in the control group during a period of three-month follow-up. (p=0.08).

Ancillary Analyses

A multivariate logistic regression test was implemented to investigate the confounding effect of mother's age and father's educational status on self-esteem scores in two groups after statistically significant effect on univariate analysis. The mother's age and father's educational status variables did not show significant effects on self-esteem scores in the intervention and control groups after the multivariate regression test (Table 3).

Discussion

Self-esteem scores among female high school students after the structured health education showed significant improvement, compared to those of students who did not receive the education. The influence of health education in increasing mental health was investigated in different studies, and it has been shown that self-esteem and psychological health of individuals increase as an effect of education-based interventions [11, 12]. Cousineau et al. have concluded that education on physical changes of teenagers during adolescence has a positive effect on psychological health and self-esteem of teenagers [13]. Moreover, Dadpour et al. have demonstrated that logical and emotional education is effective on the self-esteem of talent students [4]. Physical characteristics of students also impact on self-esteem. Bodiba et al. have reported that obese and overweight teenagers have lower self-esteem. Lack of exercise and even sexual abuse are more likely being happening in vulnerable teenagers, particularly those with lower self-esteem [14, 15]. However, Yang et al. have concluded that there is no significant relationship between beginning of adolescent symptoms, depression, and self-esteem of female students [16].

The results of this study showed a significant improvement in self-esteem average scores even after three months of follow-up after the structured health education in intervention and control groups. Similarly, Okeke et al. compared the self-esteem score of students in two groups of intervention and control before and after 10 intervention sessions of an educational program. Their results showed that intervention group had gained a higher self-esteem in comparison to the control group [17].

The major goal of three-month follow-up in this study was to evaluate learning outcomes of the structured health education on flexibility of confronting crises in adolescence by assessing self-esteem. Learning refers to creating an almost sustainable change in behavior caused by experience. This means temporary changes caused by emotional or similar states are not considered learning. However, changes in behavior do not occur necessarily immediately after the learning experience [18]. Learning is a process that helps an individual to adapt with environmental changes, and it needs flexibility of living in various environmental situations. Thus, it is necessary to consider learning as a major tool for adaptation with the environment [19]. This study demonstrated that the health education had sustainable effects on students' self-esteem after three-month follow-up.

Method of conducting health education is one of the most important elements in formation of effective learning process for students. It has been shown that small steps in conveying information may result in perfect learning process [20]. It should be noted that the most common educational method is lecture method which contrast with the aforementioned principles [19]. In this study, two methods of focused group discussions and one-on-one question-answer session along with lecture sessions were implemented to maintain customized amount of information delivery to each participant based on her own personal and mental capabilities. Similar studies showed that the adolescent health education can affect self-esteem and mental health of students [21]. Adolescent health structural education plays an effective role in preventing or mitigating behavioral and social anomalies and psychological and personal disorders in teenagers so lack of this education can lead to decreasing this sense of worth. Education to teenagers creates a sense of competency, capability, effectiveness, overcoming problems or adapting failures and finally can increase self-esteem [22, 23].

There are some limitations to this study. Despite efforts to allocate participants randomly into two groups, there were statistically significant differences for mothers' ages and fathers' educational levels between the two. One reason can be the relatively small sample size of the study. Future studies with more sample size may warrant more homogenous comparable groups. Another limitation of the study is that only the effect of structured health education on self-esteem was sought in a period of three-month follow-up. The study was not able to identify the association of this type of education and other aspects of mental health such as self-confidence, anxiety, and depression. Furthermore, it could not illustrate long-term effects of the education on mental health of female high school students. These can be investigated by further studies in this field.

Conclusion

Findings of the study show the importance of structured health education on self-esteem for Iranian female high school students. It is recommended that educational programs containing adolescence health be added to the curriculum of female high schools to facilitate the presence of female-related health providers in schools at appropriate time to educate students based on the educational course plan.

Acknowledgments

We sincerely thank Tehran University of Medical Sciences, officials of the Department of Nursing and Gynecology, officials of the District 4, Department of Education, compassionate teachers, respected parents and dear students of Moalem and Hadaf high schools without whose support, this study may not have been realized.

Competing interests

There was no conflict of interest.

Authors' contributions

Study concept and design: Shiva Khaleghparast

Technical and material support, conducting the project: Hoda Mokari

Revising the manuscript: Behrooz Ghanbari, Amir Reza Azizian

Collecting the data and review of literature: Zahra Hanifi, Shabnam Zafari

Data analysis and preparing the manuscript: Behshid Ghadrdoost.

References

1. Michaud P, Ambresin A. The health of adolescents around a world in transition. Georgian Med News 2014; 5:54-59.
2. Altıntaş A, Aşçı F, Kin-İşler A, Güven-Karahan B, Kelecek S, Özkan A, Yılmaz A, Kara FM. The role of physical activity, body mass index and maturity status in body-related perceptions and self-esteem of adolescents. Annals of human biology 2014; 41(5):395-402.
3. Schauder T. The development of self-esteem of children in Germany between 1989 and 2009. Praxis der Kinderpsychologie und Kinderpsychiatrie 2011; 61(3):198-213.
4. Dadpour G, Tavakolizadeh J, Panahi Shahri M. The effectiveness of rational-emotional group training on self-esteem and anxiety of gifted boy students. Journal of Research & Health 2012; 2(1):36-43.
5. Hu J, Ai H. Self-esteem mediates the effect of the parent–adolescent relationship on depression. Journal of health psychology 2016; 21(6):897-904.
6. Shrestha T. Self-esteem and stress coping among proficiency certificate level nursing students in nursing campus Maharajgunj and Lalitpur Nursing Campus. Journal of Nepal Health Research Council 2013; 11(25):283-288.
7. Costello EJ, He J-p, Sampson NA, Kessler RC, Merikangas KR. Services for adolescents with psychiatric disorders: 12-month data from the National Comorbidity Survey–Adolescent. Psychiatric Services 2014; 65(3):359-366.
8. Fleming CB, Catalano RF, Haggerty KP, Abbott RD. Relationships between level and change in family, school, and peer factors during two periods of adolescence and problem behavior at age 19. Journal of youth and adolescence 2010; 39(6):670-682.
9. Karila L, Larrar M, Ferreri M. Adolescent behavioral disorders. La Revue du praticien 2014; 64(4):505-508.
10. Ryden MB. An adult version of the Coopersmith Self-Esteem Inventory: Test-retest reliability and social desirability. Psychological Reports 1978; 43(3 suppl):1189-1190.
11. Jones JE, Blocher JB, Jackson DC, Sung C, Fujikawa M. Social anxiety and self-concept in children with epilepsy: a pilot intervention study. Seizure 2014; 23(9):780-785.
12. Tavakoli S, Lumley MA, Hijazi AM, Slavin-Spenny OM, Parris GP. Effects of assertiveness training and expressive writing on acculturative stress in international students: A randomized trial. Journal of counseling psychology 2009; 56(4):590.
13. Cousineau TM, Franko DL, Trant M, Rancourt D, Ainscough J, Chaudhuri A, Brevard J. Teaching adolescents about changing bodies: randomized controlled trial of an internet puberty education and body dissatisfaction prevention program. Body Image 2010; 7(4):296-300.
14. Bodiba P, Madu S, Ezeokana J, Nnedum O. The relationship between body mass index and self-concept among adolescent black female university students. Curationis 2008; 31(1):77-84.
15. Chavez Ayala R, Rivera-Rivera L, Angeles-Llerenas A, Díaz-Cerón E, Allen-Leigh B, Lazcano Ponce E. Factors for sexual abuse during childhood and adolescence in students of Morelos, Mexico. Revista de saude publica 2009; 43(3):506-514.
16. Yang JH, Han SW, Yeom CW, Park YJ, Choi WS, Seo JY, Koo YJ. Depression and self-concept in girls with perception of pubertal onset. Annals of Pediatric Endocrinology & Metabolism 2013, 18(3):135-140.
17. Okeke-Adeyanju N, Taylor LC, Craig AB, Smith RE, Thomas A, Boyle AE, DeRosier ME. Celebrating the strengths of black youth: Increasing self-esteem and implications for prevention. The journal of primary prevention 2014; 35(5):357-369.
18. Mokarie H, Kheyrkhah M, Neisani L, Hoseini F. The impact of puberty health education on self concept of adolescents. 2013.
19. Olson MH: An introduction to theories of learning. Psychology Press; 2015.
20. Wachelka D, Katz RC. Reducing test anxiety and improving academic self-esteem in high school and college students with learning disabilities. Journal of behavior therapy and experimental psychiatry 1999; 30(3):191-198.
21. Standage M, Gillison F. Students' motivational responses toward school physical education and their relationship to general self-esteem and health-related quality of life. Psychology of Sport and Exercise 2007; 8(5):704-721.

22. De Jong P, Sportel B, De Hullu E, Nauta M. Co-occurrence of social anxiety and depression symptoms in adolescence: differential links with implicit and explicit self-esteem? Psychological medicine 2012; 42(03):475-484.
23. Obeid N, Buchholz A, Boerner KE, Henderson KA, Norris M. Self-esteem and social anxiety in an adolescent female eating disorder population: age and diagnostic effects. Eating disorders 2013; 21(2):140-153.

Table 1: Socio-demographic and family characteristics of students

variable		Intervention (n=86)	Control (n=73)	p-value
Age (mean ± SD)		14.98±0.67	15.15±0.75	0.13
Number of family members (mean ± SD)		4.59±0.97	4.74±1.04	0.36
Grade point average (GPA) in the last year (mean ± SD) *		19.25±0.71	19.03±0.77	0.07
Father's age (mean ± SD) **		44.44±4.30	45.64±8.15	0.27
Mother's age (mean ± SD) †		39.45±5.07	41.72±5.90	0.01
Father's educational status (%)	Illiterate	1(1.2)	0(0)	<0.001
	Grade 1-12	39(45.3)	53(72.6)	
	Bachelors' degree	32(37.2)	16(21.9)	
	Masters' degree or PhD	14(16.3)	4(5.5)	
Mother's educational status (%) ‡	Illiterate	0 (0)	1(1.4)	0.17
	Grade 1-12	58(67.4)	57(80.3)	
	Bachelors' degree	28(32.6)	13(18.3)	
	Masters' degree of PhD	0(0)	0(0)	

* There were one no response in the intervention group (n = 85) and four no responses in the control group (n = 69). Grade point average (GPA) is calculated from 20 in the Iranian educational system.

** There were two no responses in the intervention group (n = 84) and six no responses in the control group (n = 67).

† There were five no responses in the control group (n = 68).

‡ There were two no responses in the control group (n = 71).

Table 2: Changes in the students' self-esteem scores pre- and post-intervention between the intervention and control groups.

Group	Self-esteem score before education	Self-esteem score after education	Self-esteem score 3 months after education	p-value
Intervention	29.66±7.55	33.02±6.89	34.14±6.61	<0.001
Control	30.58±6.59	29.32±7.52	28.95±8.33	0.08

Table 3: Multivariate logistic regression test based on univariate analysis

Variable	B	Beta	t	p-value
Mother's age	0.027	0.018	0.225	0.82
Father's educational status	1.13	0.099	1.24	0.21
Group(intervention/control)	-5.39	-.337	-4.08	<0.001

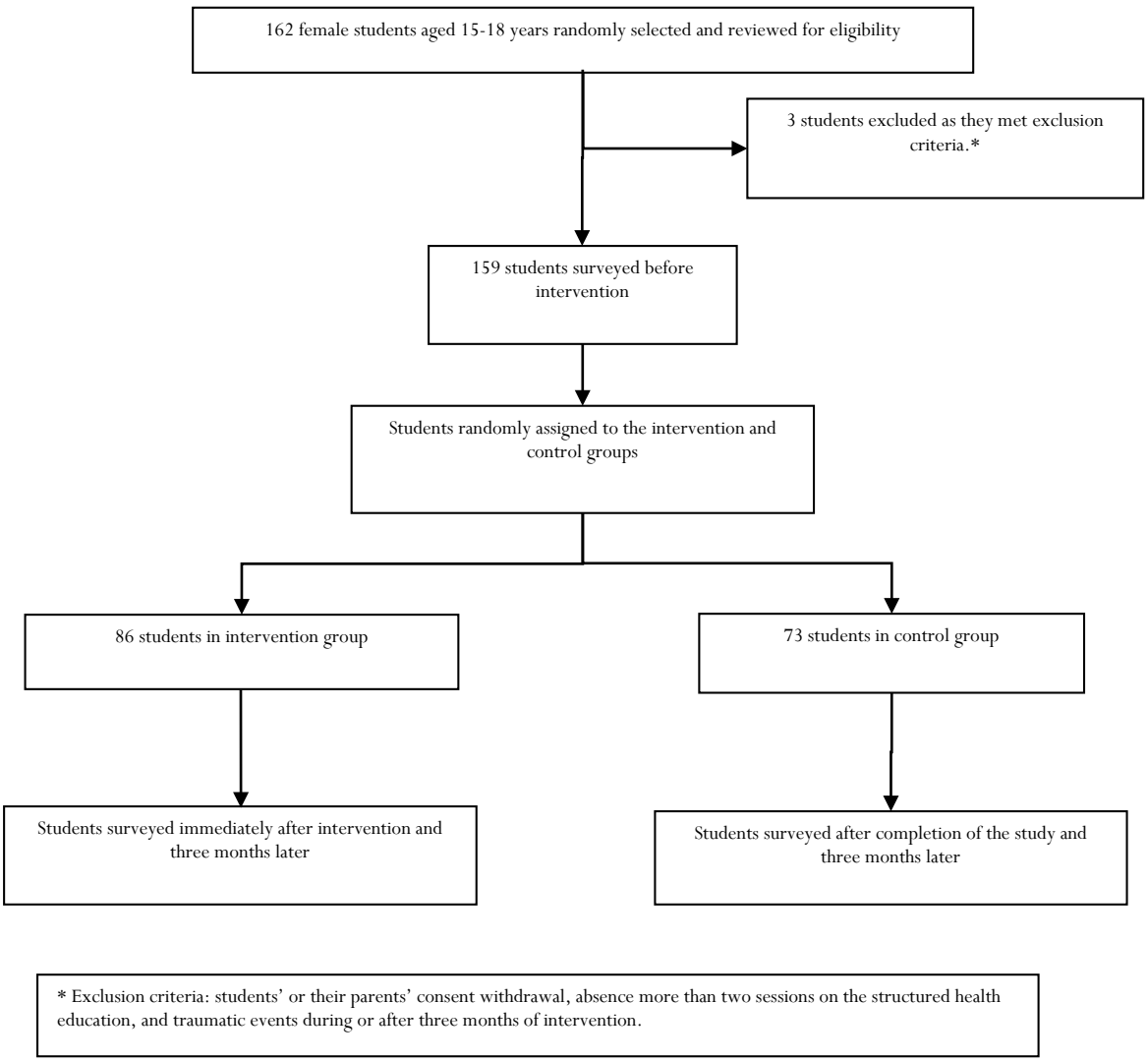

Figure 1. Study flow chart and recruitment of participants

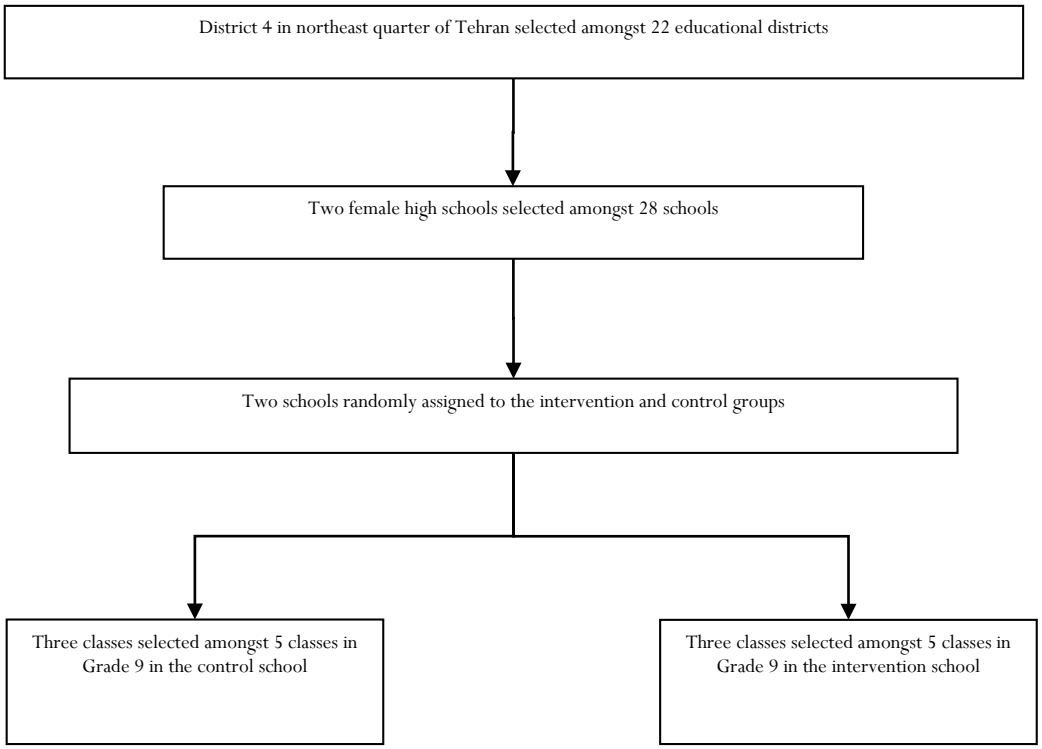

Figure 2. Cluster of selecting public female high schools in the city of Tehran for the study