

Implementation of the Health-promoting Schools Program in Primary and Middle Schools of Tabriz and the impact on Environmental Health Indicators

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ABSTRACT

Background: School is considered as a reliable place in educating and training people and plays a very constructive role in providing healthy and bracing life. Health-promoting school (HPS) program is one of the approved health programs to perform in schools and is important in terms of being effective on the health of students. Therefore, this study was carried out to determine the effects of health-promoting schools program on implamented and nonimplamented schools regarding environmental indicators. **Patients and Methods:** This case-control study conducted in 2013. Schools were divided into two groups, including health-promoting project schools (case group) and the schools which were non-promoter of health (control group). Data collection tool of this study was checklist that completed through visiting the schools by environmental health experts. **Results:** In this study, we investigated and compared the mean of the twelve environmental indicators and the findings show that 8 of 12 indicators, had higher average rengen than the control group. **Conclusions:** There was a significant relationship between the majority of environmental health indicators in the two groups of schools, and the status of the environmental health indicators in HPS program was more desirable than in control group. Thus, the HPS program can recommended as a new step in promoting environmental and health indicators in the schools across the country.

Keywords: Health-promoting schools (HPS), Environmental Health Indicators (EHI), Primary schools, Middle schools, Tabriz.

Introduction

Education and training centers are specific social place for education and personality development of today's children and adolescents should promote under its scientific procedures and

current health diciplins^[1]. School, After the family environment^[2] plays a very constructive role in providing healthy and bracing life and training of yung generation with healthy behaviors^[3], because of students are spending more time to growand develop skills in the school than anyother social spots^[4]. Health-promoting schools (HPS) program has been developed by World Health Organization (WHO) over the last decade and is being implemented globally^[5-7]. According to the WHO definition, School Health is a set of measures that implemented in order to identify, provide, and promote physical, mental, social and spiritual health of the students and the employees who are in connection with students in any way. The students are all the people who are studying in sections for different educational levels from preschool to pre-university in the country^[8].

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The school environment must be such that able to respond to physical, mental, and social needs of students in every respect; So we can say that school is a particular social space that education and personality development of today's children, founded and managed under its correct and appropriate educational methods, desirable physical space, and mental favorable environment [4].

In terms of health promotion that expanding from two decades ago, health programs and

Health-promoting Schools program works as a system for health promotion by active participation of parents, teachers and students with the approach of empowerment of students in the field of self-care, culture and peer education, which will lead to increased skills and permit people knowledge about healthy living, healthy working, and high quality education [9]. Health-promoting School (HPS) program is an approved health program in educational sector specially in schools and is important in terms of effectiveness on the health of students.

Objectives

The necessity for understanding and applying HPS program in schools, can provide well-being and healthy development of students up to the age of puberty. Given that the health-promoting schools program is a new program and has been implemented in all schools across the nation and in this respect, there is a little information available until now. This is the first study regarding HPS program in Tabriz and there is no evidence that reflect the impact of program's implementation outcome, the present research is necessary to carry out, and has been implemented to determine the effects of health-promoting schools in promoting environmental indices and comparison it with the schools that have not implemented the program.

Patients and Methods

This research is a quantitative-analytical study that conducted, as a case-control study, in Tabriz primary and middle schools. Therefore, schools were divided into two groups, including health-promoting project schools (case group) and the schools which were non-promoter of health (control group).

The statistical population in present study included 673 primary and middle schools (107 girls from middle schools, 103 boys from middle schools, 206 girls of primary schools, and 201 boys of primary schools) in Tabriz. 342 schools of these schools, as health-promoting schools were located in six educational districts of Tabriz.

The sample size was determined using Cochran and Morgan table methods and 37 percent of the population was estimated as the minimum required sample. In studies related to the effectiveness of the health-promoting schools program, centered on mental health and the health of students, nearly 12 percent of the population studied [10]; but, as mentioned, in present study 40 percent of population was selected as sample size, Of which 50 percent (127 schools) was selected of health-promoting schools (case group) and the other 50 percent of the

schools were non-promoting of health (control group). In other words, in this study, 40% of the population (254 schools) were selected as sample, among which 127 schools (63 boy's schools and 64 girls' schools) were selected from health-promoting schools as case group and the same number from schools of non-promoting of health as control group.

The data collection tools in present study included a questionnaire and a checklist that using both the environmental indicators assessed in primary and middle schools of Tabriz. Using questionnaire, demographic data and the information about the characteristics of schools was collected and by means of the checklist of questions related to 12 indicators of environmental health was covered. In order to performing the present study, a checklist including 63 questions (yes / no) based on 12 indicators of environmental health for children were set.

In health-promoting schools program, 64 studied indicators assessed in 8 topics, (including 1. Comprehensive program of health education in schools 2. Clinical services delivery in schools 3. Environmental health in schools 4. Nutrition improvement in schools 5. Physical activity in schools 6. Health promotion for school staff and active participation of parents and teachers in health promotion of students 7. Mental health and counseling services in schools and training and health promotion based on peer education model, and 8. Volunteers and community participation in health promotion programs in schools as well as creating a network of health volunteers among students to in order to their active participation). In the present study, only the indicators of the environmental health in schools (Environmental Health of the Schools) were used to assess the health of the schools. In this regard, 21 points of 100 points of the health-promoting schools checklists are related to environmental health of schools. Environmental health Indicators, the scores, along with number of questions and the score of each of them, as mentioned in table 1, was determined according to the operating procedure of health-promoting schools program [4, 9].

Table 1: Studied environmental health indicators and the number of questions and related scores

| Environmental health indicators in health promoting schools according to program guidelines | The number of questions in the researcher checklist | specified points for each indicator according to program guidelines | score of questions of checklist |
|---|---|---|---------------------------------|
| place and space of school | 6 | 2 | 0.3333 |
| green space of schools | 1 | 1 | 1 |
| Sewage disposal schools of | 2 | 0.75 | 0.375 |
| Classrooms and laboratory space | 8 | 2 | 0.25 |
| Access to drinking water | 7 | 3 | 0.428 |
| Toilets and washbasins | 9 | 1.75 | 0.1944 |
| safety and compliance of accident prevention | 5 | 3 | 0.6 |

| | | | |
|--|---|-----|-------|
| Trash disposal and the existence of trash | 4 | 0.5 | 0.125 |
| The cleanliness of the school environment | 4 | 2 | 0.5 |
| Safe School | 4 | 2 | 0.5 |
| Lighting, heating and ventilation of classrooms and laboratories | 8 | 2 | 0.25 |
| Environmental activities | 5 | 1 | 0.2 |

To determine the face and content validity of the questions of checklist, as a data collection tool, the following steps were over: (1) First all posed questions were adjusted with instructions of environmental health of schools and the national standard number 2086 (ISIRI¹). (2) By referring to the scientific resources and the sources related to the research objectives, the necessary corrections took to the questions (3) Finally, at the start of field work, during visiting schools and data entry, questions that were flawed in terms of face and content, were corrected. Since the data collection tool was checklist, stability is not necessary; but, the coefficient of agreement is calculated in scoring; so with calculating the coefficient of agreement in scoring the questions of the checklist, two interviewers at the same time evaluated the schools and the coefficient of agreement scoring was 95 percent. At the field stage, the questionnaire and checklist were completed by health experts, with presence in schools and observing objectively, asking from the students, questioning the school manager, and seeing the documents in schools.

The data in the field of indicators of location and space of schools, space of classrooms and laboratory, access to drinking water, toilets and washbasins, sewage disposal, light, heat, sound, humidity and ventilation of classrooms and laboratories, school safety, the quantity of trash and quality of waste disposal, preventive safety measures, the cleanliness of schools, green space, and environmental activities of health-promoting schools and schools of non-promoting of health entered in SPSS 18 software and then, compared and evaluated using descriptive statistics and inferential statistics, based on hypotheses and research objectives; so that the average index was used in descriptive statistics and in inferential statistics to determine the effect of health-promoting schools on health indicators, the data compared and the significance of mean of indicators was evaluated using paired t-test.

Results

In present study the mean of 12 indicators was evaluated and compared. The findings of this study showed that 8 indicators of the 12 indicators studied about the environmental health, in health-promoting schools had higher average than the control group (schools of non-promoting of health). As shown in Table

2 Health 4, the mean of 4 environmental indicators in health-promoting schools was higher than the control group (schools of non-promoting of health).

Table 2: Distribution of average and results of studied indicators

| Environmental Health Indicators | Mean of health-promoting schools indicator | Mean of non-promoting of health indicator | Maximum points | Paired t-test results |
|---|--|---|----------------|---|
| place and space of school | 1.4880 | 1.4041 | 2 | t=1.77 *df=252 *p value=0.078 |
| Classrooms and laboratory space | 1.7441 | 1.5472 | 2 | t=4.032 *df=252 *p value= 0 |
| Access to drinking water | 2.2403 | 1.8287 | 3 | t=4.146 *df=252 *p value=0 |
| Toilets and washbasins | 1.3975 | 1.2934 | 1.75 | t=2.807 *df=252 *p value=0.05 t= -0.639 * df=252 *p value=0.523 |
| green space of schools | 0.3780 | 0.4173 | 1 | t=2.373 *df=252 *p value=0.018 |
| Sewage disposal of schools | 0.7352 | 0.6909 | 0.75 | t=3.298 *df=252 *p value=0.001 |
| Lighting, heating, noise, humidity | 1.9331 | 1.8287 | 2 | t=2.929 *df=252 *p value=0.004 |
| School safety | 1.5906 | 1.4528 | 2 | t=2.373 *df=252 *p value=0.018 |
| Quantity of trash and quality of waste disposal | 0.4350 | 0.3809 | 0.5 | t=2.938 *df=252 *p value=0.004 |
| Preventive safety measures | 2.6693 | 2.4850 | 3 | t=0.220 *df=252 *p value=0.826 |
| The cleanliness of the school environment | 1.5157 | 1.5079 | 2 | t=1.350 *df=252 *p value=0.178 |
| Environmental activities | 0.8898 | 0.8614 | 1 | |

Discussion

The findings of the present study showed that, in terms of place and space indicators, there isn't a significant relationship between the health-promoting schools and the schools of non-promoting of health ($p = 0.078$). It seems that the standards of this indicator could be a matter of fundamental and structural items of schools and changing the location and structural reforms are costly and somewhat impossible. However, this study shows the status of location and space of Primary and Middle schools in health-promoting schools and control group in Tabriz are almost in the same status and relatively acceptable.

The results of present study (of place and space Index in the schools) didn't match to the findings of Malakoutian et al. ^[11], investigations of environmental health and safety schools in Kerman ^[12]. Also, results of this study were similar of the study of environmental health, safety and ergonomics in primary and middle schools of the Shahrud city ^[13], and, results study of environmental health status of schools in Birjand city.

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There were significant differences between classrooms and laboratory space indexes of health-promoting schools and the control group ($p = 0.00$). This indicates that the status of classrooms, laboratories, and hallways in health-promoting schools was better than control group and this program has been effective in raising the level of the index. The findings of this study matches the results of Shahriari et al. survey^[13]. Pirzada et al.^[14] concluded that 80.5% of classrooms of schools had favorable condition. The study of Shahriari et al.^[13], 8/88% of the schools had a good situation in terms of classroom and hallway. Malakoutian et al.^[11] found that in 86.8% of schools, the laboratory floor and desk surfaces were washable. Their findings corresponded with the findings of this research.

The studies in schools of Markazi province^[15] and in the cities of Qazvin^[16] and Birjand^[13]

demonstrated that the majority of schools in terms of location, per capita education space, classrooms wall and its color, classrooms ceiling and its paint, and covering of the school campuses correspond with environmental health regulations of the country. The results of Nazemi et al.^[12] research corresponded with the present research findings. Also in evaluating status of the environmental health, safety, and ergonomics of the middle schools, status by Nazemi et al^[12], they found that 85% of schools in terms of wall, floor and ceiling of classrooms corresponded with the health regulations of the schools.

Access to drinking water in health-promoting schools was better than control group and this program has been effective in raising the level of the index and based on paired t-test was conducted, it was observed that about access to drinking water, the difference between health-promoting schools and control group was significant ($p = 0.00$). The findings of this research in this regard corresponded with findings in Kerman^[11], Isfahan^[14] Mazandaran^[3] and Zabol^[17] This indicates that in Iran it is paid attention to these primary and important principles; while in Adegbenro^[18] study, only 50% of the schools in Nigeria had sources of drinking water.

Based on the paired t-test, there was significant correlation between the toilets and washbasins indicators of health-promoting schools and control group [$p = 0.005$] and toilets and washbasins status of health-promoting schools are better than control group.

the findings of the studies in Isfahan^[14], Raygan Shirazi et al.^[19] and Mirzae et al.^[20] in Ilam, demonstrated higher levels of desirability in these types of schools and corresponded with the findings of this research; however, the findings of the present study didn't match with Markazi province indicators^[15] in regarding toilets and washbasins.

There were no significant relationship between green space indicator of health-promoting schools and control group ($p = 0.523$). As seen, the mean of scores of green space indicator in control group is better than health-promoting schools; Thus, significant measures hasn't done in the field of green space index, in schools and the health-promoting schools program couldn't create enough sensitivity to improve green space status

in schools. The low level of location and space index and green space index in this study confirms the lack of physical space in schools in Tabriz. Studies of Zazuoli et al.^[21] and Malakoutian et al.^[11] in the field of lack of green space in schools corresponded with the findings of this study.

Between sewage disposal of health-promoting schools and control group, there was a significant relationship ($p = 0.018$); and this indicates that the sewage status in health-promoting schools was better than control group and the health-promoting schools program has been effective in raising the level of the index. Zazouli et al.^[21] studies and Malakoutian et al.^[11] research corresponded with the findings of this study.

Regarding the quantity of trash and the quality of waste disposal index, there was a significant correlation between health-promoting schools and control group [$p = 0.004$]; and according to the average of this index in health-promoting schools and control group, implementation of the health-promoting schools program could cause the system to improve the collection and disposal of waste in them. Results of studies in Arak^[22], Yazd^[23], and the study of Shahriari et al. corresponded with the findings of this research.

In environmental health regulations of schools, being away from the environmental pollutants, in order to select suitable locations for building of schools is expressed. Research has shown that noise can increase stress and reduce the accuracy and learning of students^[18]. The findings of this study show that health-promoting schools and control group in Tabriz, in terms of place for construction and being away from environmental pollutants (noise, air pollution, etc.) are relatively in good condition and almost 70% of studied schools, based on existing standards, are away from environmental pollutants; and the health-promoting schools program has been able to rise this index in Primary and Middle schools in Tabriz; as the average of this index in health-promoting schools is in a relatively better position than control group ($p = 0.001$); Also, there is not a significant relationship between environmental activities index in the health-promoting schools and control group ($p = 0.178$). Overall, It can be concluded that health-promoting schools program is a new step in raising the level of environmental and health indicators and standards in schools. School managers can pick up a major step forward to improve environmental standards by managing the program properly in schools. Based on the findings of this study, it seems regular monitoring and visits from schools by health experts have great impact in compliance of environmental standards by school managers and relevant authorities. It seems health-promoting schools program is effective in creating proper communication between health sector an education and training sector and this program by creating competition and motives has been able to sensitize managers and directors of education and training sector in dealing with environmental issues. It has created a condition in which the people involved in education and training pay particular attention to environmental and health issues and take appropriate measures to improve the situation.

Conclusion

As it was found in the findings of this study, Implementation of environmental standards in both groups of studied schools done Properly and this indicator does not differ significantly from each other in health-promoting schools and the schools of non-promoting of health. It seems the recent policies of the country to save resources, has affected the schools and has led to energy savings in schools.

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Footnote

Authors' Contribution: Study concept and design: mohsen nouri and Pouran Raeissi; analysis and interpretation of data: mohsen nouri, Mohammad Ghanbari-Ghozikali and Pouran Raeissi of the manuscript: Fathollah Pourali, Masoumeh Ansari, Manizheh Soleimani Khairuddin and Mohsen nouri; critical revision of the manuscript for important intellectual content: Fathollah Pourali, Masoumeh Ansari, Manizheh Soleimani Khairuddin and Pouran Raeissi.

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