

## The Effect of Health Promoting Schools Programs in Improving the Health Status of Schools in Urmia, North West of Iran

Moradali Zareipour<sup>1</sup>, Ali Sadaghianifar<sup>2</sup>, Rohollah Valizadeh<sup>3</sup>, Mahin Alinejad<sup>4</sup>, Simin Noorani<sup>5</sup>, \*Mousa Ghelichi Ghojogh<sup>6</sup>

<sup>1</sup>PhD Student of Health Education and Health Promotion, Health Center of Urmia, Urmia University of Medical Sciences, Urmia, Iran. <sup>2</sup>Doctor of Medicine, MPH, and Responsible of Health Center of Urmia, Urmia University of Medical Sciences, Urmia, Iran. <sup>3</sup>MSc Student of Epidemiology, Student Research Committee, Urmia University of Medical Sciences, Urmia, Iran. <sup>4</sup>Master of Health Education, Health Center of Urmia, Urmia University of Medical sciences, Urmia, Iran. <sup>5</sup>Bachelor of Public Health, Health Center of Urmia, Urmia University of Medical Sciences, Urmia, Iran. <sup>6</sup>Graduate of Epidemiology, Health center of Urmia, Urmia University of Medical Sciences, Urmia, Iran.

### Abstract

**Background:** Investing in the health of children in learning situation is one of the most important health interventions. The aim of this study was to determine the effect of health promoting schools in improving the health status of schools in Urmia, North West of Iran.

**Methods and materials:** This interventional study was conducted on 155 schools executing the health promoting schools program that were included by census. Data collection instrument was standard checklist of health promoting schools approved by Ministry of health and Ministry of education. Data were collected in two-stage before and after intervention during 12 months. Data were analyzed using the software SPSS 16.0 and descriptive statistics and Paired t- test were used.

**Results:** There were 217 schools in Urmia in primary, Middle and High school. A total of 155 schools surveyed in the study, 77 schools (49.7%) were primary school, 68 schools (43.9%) junior schools, and 10 schools (6.5%) were high school. Mean score of rates was  $59.35 \pm 13.22$  before the intervention and  $63.94 \pm 12.1$  after intervention and this difference was statistically significant ( $P < 0.05$ ). Also, the rates of nine dimensions before and after the intervention increased excluding the two dimensions of clinical services and mental health services and counseling and these findings were statistically significant ( $P < 0.05$ ).

**Conclusion:** The results showed that health promoting schools program was effective in improving schools in terms of health promotion. It is recommended that families, organizations, and policy makers to be involved in the implementation of this program.

**Keywords:** Health promotion, Iran, Schools, Students.

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### \*Corresponding Author:

Mousa Ghelichi Ghojogh, Graduate of Epidemiology, Health Center of Urmia, Urmia University of Medical Sciences, Urmia, Iran.

Email: [mghelichi2000@yahoo.com](mailto:mghelichi2000@yahoo.com)

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## 1-INTRODUCTION

School is second home for children and a location for their social training. A large part of a children's time is increasingly in school. With increasing problems such as poverty, promiscuity, single-parent families and violence, the role of schools become more important (1). Schools are as one of the most important centers of human societies in terms of the age structure and the process of puberty and the evolution of the main target groups in health systems (2). Physical exercise of students, nutrition and threats of foods contamination, water health and status of school's toilets, chronic disease and spiritual, mental and emotional crisis, and addiction to opium are some of important subjects for investigating and promotion in schools (3, 4).

Schools as a large place includes a crowd of children and plays an important role in the transmission of health information to individuals, families and the community (5). The development of students' health behaviors is possible through education (6), in such situations, school beside of the family can prevent the behavioral problems of children and adolescents and promote the social abilities (7). Therefore, the purpose of health promoting school program (HPS) is designed to promote a healthy lifestyle in schools that be able to prevent chronic diseases in the community (8). The health of people located in the school age can play the main role in the success and development of a country, because the person in the school because of the interaction with other students and the teacher will teach the health behaviors and their form of life style (9)

On this basis, the entire school space and all aspects of it that includes the three areas of learning in the classroom, in the school environment and relationship between home and school strengthen health and wellbeing (10). In the study of Inchley et al. entitled evaluation of HPS in

Scotland showed that implementation of HPS leads to the immediate changes in services (11). Toolabifard and colleagues declared that study on the effect of the establishment of the health promoting school program on the health indicators, had no effect and should change and revise the content of HPS in order to get the best effectiveness (12). Mukoma and coleague in the study of the evaluation of the health promoting school program, emphasized that HPS should be consolidated in the form of a consolidated program. In this program interventions may fail, not because of its weakness, but for the reason of poor implementation (13).

The basis of behaviors that affect health and lifestyle will be built in schools. Today's students are tomorrow's parents. Successes in health awareness and health-oriented behaviors and attitudes ensure the health of present and future generations of the country. At current, students can have a big impact on family and community hygiene. They are often able to convey health habits and messages to home from school. Awareness and attitudes improvement of them, can lead to positive changes in their environments. So, students should be considered as health messagers that can play an active role in health promoting of community. According to the mentioned importance of health promotion, this study was done in the schools of Urmia city and aimed to determine the effect of health promoting schools in improving the health status of schools in Urmia, North West of Iran.

## 2- MATERIALS AND METHODS

### 2-1. Study Design and Population

This study was an interventional study. Sample size of this study were 155 schools of total 217 schools in Urmia city, North West of Iran; executing the health promoting schools program and were included by census. There were 77 governmental primary schools, 68 Middle-

schools and 72 High schools. Due to the formation of students' behaviors at early age, 14% of High schools (10 schools) randomly were selected.

## 2-2. Methods

Data collection instrument was standard checklist of health promoting schools, a standard checklist of schools with 100 scores approved by the Ministry of Health and the Ministry of Education that is designed in 2010-2011 (14). The mentioned checklist was used in the study of Kochaki et al. in Golestan (5), and Ramazani et al. in Babol (10). In details, for rating and collecting the data initially health experienced experts including midwifery, family health and public health experts were identified in Urmia health centers and the detail of this study and how to interview described them in one day course. Interviewers fulfilled checklists before intervention from each school in one day. After the analysis of the results of the completed checklists in the first stage, the lack of compliance with the standards announced to the principals of the school and some required training according to the instructions of the health promoting school program presented. As well as the summary of education and recommended items registered in order to follow up in future. Health experts visited the relevant schools once every 3 months during the academic year for training and reminding to schools. After one year, health experts went to the same schools and fulfilled checklist in the second stage.

After the analysis of the results of completed checklists in the first stage, some cases reported to the principal of the school and health observer of school that were inconsistent with standards as well as purposive trainings presented according to the instructions in terms of need to improve and how to intervene. As well as a summary of the presented trainings and advices were recorded in order to follow-up.

## 2-3. Measuring tests

Data collection instrument was standard checklist of health promoting schools approved by Ministry of health and Ministry of education (14). This check list consisted of two parts: demographic variables and main indicators variables divided to 9 independent dimension including:

1. Management with five questions and five scores.
2. Comprehensive health education program with eight questions and 12 scores.
3. Clinical services with eleven questions and 16 scores.
4. Health of environment with 12 questions and 21 scores.
5. Improving nutrition in schools with 6 questions and 12 scores.
6. Physical activity with five questions and 5 scores.
7. Health promotion of staff with six questions and 8 scores.
8. Mental health services and counseling with eight questions and 11 scores and
9. Parents and community participation in health promotion programs in schools and health volunteer network of students with eight questions and 10 scores (**Table.1**).

## 2-4. Inclusion Criteria

Inclusion criteria included schools of Urmia city executing the health promoting schools program.

Based on the division of schools' region, Urmia is divided into two regions, given that the governmental schools were enrolled in this study including primary, Middle and High schools that in each region were almost equally and finally 10 schools were selected.

## 2-5. Exclusion Criteria

Exclusion criteria included schools of Urmia city who was not executing the health promoting schools program. All governmental Elementary and Middle schools participated in this study, but due to the formation of behavior of students at early age, 14 percent of high schools (10 schools), were selected. Also, 77 schools (49.7%) were Elementary, 68 schools (43.9%) Junior schools, and 10 schools (6.5%) were High school (**Table.2**).

**2-6. Ethical Considerations**

This study was approved by the Ethics Committee of Urmia University of Medical

Science, with ID code No. 1393-04-58 and actually this study was a summary of national comprehensive program called HPS.

**2-7. Data Analyses**

Statistical analysis was carried out using SPSS version 16.0, Chi square, descriptive statistics and independent t-tests. P-value less than 0.05 were considered. Dependent variables (nine dimensions of HPS) were described as mean ± standard deviation (SD) and independent variables were expressed as number of individuals and percentages.

**Table-1:** The Standard checklist of health promoting schools (14)

Targeted group	The principal and health observer of school
Educational content based on 9 dimensions of checklist	<ol style="list-style-type: none"> <li>1. Management: training about health committee, planning the operational programs to solve the health problems, report of health problems at school to higher levels.</li> <li>2. Health education: determining the responsible person of health programs, training sessions for teachers and students, distribution of educational content of health promoting schools among teachers, students and parents, holding ceremonies about health.</li> <li>3. Clinical services: providing health room, providing health certification for students, providing first aid boxes, medical examinations for students and on time referral.</li> <li>4. Healthy Environments: presence of sanitary toilets, safety environment of school, enough bin at schools, sanitary disposal of sewage, class environment (light, heat, air condition etc.).</li> <li>5. Nutrition: A healthy and authorized food at the buffet of School, providing health cards and health routine tests of seller, production and distribution of nutrient food.</li> <li>6. Physical activity: specified time for at least physical activity, educational programs for students, teachers and parents about the benefits of physical activity, social and cultural programs related to physical activity.</li> <li>7. Employee health promotion: providing health certification for teachers, routine medical examinations for teachers and on time referral, cultural and social programs related to health for teachers.</li> <li>8. Mental health services and counseling: training of social skills to students, presence of -consultation, identify people at risk of social damages, identify students with mental disorders and on time referral and follow-up.</li> <li>9. Parents and community participation in health promotion: making up a team of trained health observers, announcing the issues of students' health in parent community at schools, education of peers about health at school.</li> </ol>
Educational and follow-up sessions	<p>In the first session, checklists were completed for each school.</p> <p>Two training sessions of 45 minutes were held for principal and health observer. All problems based on health promoting schools program were held in accordance with educational content.</p> <p>Experts were referred to the schools in order to follow the trained cases every three and all were recorded and reminded in follow-up book.</p> <p>After one year, checklists were completed again.</p>

**Table-2:** Characteristics of schools participating in this study

Variables	Sub-group	Number	Percent
Schools	Elementary	49.7	77
	Junior	43.9	68
	High School	6.5	10
Regions	Region 1	48.4	75
	Region 2	51.6	80
Type of School (boys school or girls)	Feminine	48.4	75
	Masculine	51.6	80

### 3-RESULTS

There were 217 schools in Urmia in primary, Middle and High school. A total of 155 schools surveyed in the study. 80 schools (51.6%), were masculine and 75 schools (48.4%) were feminine.

Mean score of total rates before intervention was  $59.35 \pm 0.386$  and after intervention was  $63.94 \pm 0.417$  that was statistically significant ( $P < 0.05$ ). Apart from the two dimensions (providing clinical services and mental health services and counseling), mean score after

intervention in other dimensions increased and were statistically significant (**Table.3**).

According to the results, mean score of total checklist increased after intervention excluding in High school and was statistically significant ( $P < 0.05$ ). The mean score of total checklist varies before and after intervention based on type of school (boys school or girls), and school region, were different in boys and girls school (**Table.4**).

**Table-3:** Mean score of nine dimensions before and after intervention in health promoting schools

Nine Dimensions of Check List	Score	Before Intervention		After Intervention		P-value
		Mean	SD	Mean	SD	
Management	0-5	3	1.66	3.42	1.55	0.001
Health Education	0-12	7.61	3.45	8.25	2.84	0.015
Clinical Services	0-16	12.6	2.9	12.9	2.22	0.13
Environment's Health	0-21	14.22	3.05	15.15	3.1	0.00
Nutrition Improvement	0-12	2.44	2.33	3.67	2.48	0.00
Physical Activities and Exercises	0-5	4.19	1.02	4.38	0.86	0.02
Promotion of Staff's Health	0-8	2.58	0.25	2.97	0.9	0.00
Mental Health Services and Counseling	0-11	7.25	3.21	7.12	2.44	0.52
Participation of Parent and Community in Health Promotion	0-10	5.02	2.66	6.46	2.59	0.00
Total	0-100	59.35	15.76	63.94	13.02	0.00

SD: Standard deviation.

**Table- 4:** Mean score of total before and after intervention in health promoting schools

Variables	Sub-group	Before Intervention		After Intervention		P-value
		Mean	SD	Mean	SD	
School	Elementary School	59.37	15.09	65.14	11.66	0.00
	Junior School	59.31	15.65	63.52	12.32	0.006
	High School	65.37	9.9	64.11	13.1	0.65
Region	Region.1	61.19	15.40	63.99	12.01	0.03
	Region.2	57.62	16	63.9	13.98	0.00
Type of School (boys school or girls)	Feminine	65.4	13.05	68.74	11.11	0.004
	Masculine	56.27	15.17	60.78	11.83	0.003

SD: Standard deviation.

#### 4-DISCUSSION

Health promoting schools are places that promote the health of students. Therefore, discussing about this issue is one of the basic and major issues among students in the health system. The comparison of the results before and after intervention indicates that the mean score of total had increased and was statistically significant. Also, apart from the two dimensions, providing clinical services and mental health services and counseling, other dimensions increased after intervention. The results of this study were consistent with the study of Ramezani et al. (10) and Inchley et al. (11) in terms of total score as well as an increase in scores after intervention in most indicators of health promoting school excluding two dimensions, clinical services and mental health services and counseling, which was also statistically significant.

The results of our study was not consistent with the study of Toolabifard et al. (12), that declared the establishment of health promoting school program in health indicators are not effective. The study of Ahmadian et al. with a comparison of the first and second checklist scores in the two-month interval showed that despite the short time for intervention, all health promoting school experienced the higher score of checklists (15). According to the results of the present study and similar studies, supporting in two areas of health and education by managers can provide

suitable area for the growth of youth and their education. It is recommended to use this program in order to expand this program and participate the other sections for promotion in healthy indices. In the present study, the average physical activity in the intervention group had significantly increased after intervention that was consistent with the study of Mohtasham et al. (16). Also Verstraete et al. declared same results that physical activity after doing a physical activity in the intervention group compared to the control group increased so that moderate activities 38-50% and severe activities 10-11% increased, respectively (17).

Hannon et al. (18) on their study also pointed out that after interventions in both the girl and boys group, significant reduction was seen in immobilizing behaviors and there was an increasing in the light, medium, and severe activities. This increasing in physical activity after intervention, can be related to accessibility of sports equipment, holding educational classes, pamphlet and CD presentation, play the song for childish during on tracts in schools, the fitted school yard for the games, the presence of other officers and managers in the school yard and encourage students to participate in the games. Implementation of the health promoting schools program were effective on the indicators of parental and community participation in health promotion, promotion of health staff in

schools and according to the results obtained, the mean score after intervention increased considerably and showed a significant relationships between them. There were many reasons can be raised for successful implementation of health promoting schools program that the most important of them was the participation of staff, students and their parents and targeting them in the correct implementation of the health promoting schools of Urmia city in region 1 and 2.

The management component was one of the important components of this program. In our study, the management dimension increased in intervention group and there was a significant relationship between them. O'Hara, in his study emphasizes that although the budget for the implementation of this program is important, but will not be enough and more important things are management, leadership, cooperation and integration in the HPS indices (19).

In the present study the index of health education schools increased after the intervention. It is seemed that the cause of this issue was somethings including: installation of control panel notification regarding educational activities of schools, specify a person as a monitor of educational programs. The results of this study showed that health promoting schools program had no significant effect of mental health on students after intervention. In the study of Kochaki et al. entitled the effect of health promoting schools program on students' mental health features of Golestan province, demonstrated that the implementation of this program was not successful in creating and mobilizing the mental health symptoms (20).

The results of the study of Durlak et al. indicated that the student-based training and problem solving strategies as well as changing the school environment had the

highest effect on students ' mental health promotion (21).

The results of the mentioned study showed that clinical services after intervention was dropped and this suggests the presence of clinical service providers in the health promoting schools. Hygiene of environment is one of the most important and effective issue in the health promoting schools. In this study, hygiene of environment increased after intervention. This result was consistent with the study of Zare et al. (22). This finding showed the importance of paying more attention to school safety and necessary facilities and conditions to prevent probable risks.

Nutritional assessment was another indicator of this program and the results of our study showed that feeding status of students was increased after intervention, these results were consistent with the study of Dehdari et al. (23). Therefore, the necessity of nutrition education in schools should be emphasized more than before in order to enforce healthy nutritional habits of childhood and adolescence and health promotion in the next generation.

According to the principle of mutual support, which is an important principle for health promotion, interventions that involve all levels of society, such as families, schools, local community members, policy makers and health care providers, the media etc., are more successful. Minnesota healthy heart program and the use of safety belt in the Midfield schools are examples that indicate the considerable levels of organizations and communities supporting the program (24-26). It seems that involving of mentioned cases can be effective in the success of health promoting schools.

#### **4-1. Limitations of the study**

The limitations of this study were the far distance during first stage and two stage in terms of reviewing and visiting the status

of health changing in schools. Due to lack of enough human forces and trained people for reviewing we encountered with this limitation.

## 5-CONCLUSION

The results of this study showed that the intervention program can be effective in improving the health of students by emphasizing the following points: holding group discussions with parents and staff for their participation in the health promotion of students, holding classes for staff about health promotion in schools, recruiting school health teachers to provide clinical services in school, having regular psychology counseling in school for mental health and counseling services and finally improving physical conditions of school. All these interventions are recommended as a low-cost method in the form of a comprehensive program to promote health in schools to improve students' health.

**6- CONFLICT OF INTEREST:** None.

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## 8-AUTHORS CONTRIBUTIONS

- Study design: MA, AS, RV.
- Data Collection and Analysis: MZ, AS, RV, MA.
- Manuscript Writing: SN, MGG, SN.
- Critical Revision: MGG, MA.

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