Evaluation of Public School Health and Its Accordance with School Health National Regulations: A Case Study in Kermanshah, Iran

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Abstract

Background: Providing a favorable health status is of high importance for educational buildings and in particular schools. The aim of this study was to evaluate the school health and its accordance with national school health regulations in Kermanshah city, Iran.

Materials and Methods: This cross-sectional study, the researchers randomized 200 schools and gathered data using a checklist comprising 87 questions, 74 of them on environmental health status and 14 of them on safety status of schools. This checklist designed based on the school health guidelines (developed by the health and work environment center of the Ministry of health, treatment and medical education). In this study, the researchers used only the former and filled out the checklist through visiting schools and interviewing with their staff. The collected data were transferred to the statistics software SPSS version 16.0 and Excel version 2010 and the outputs were presented in tables.

Results: Out of the 200 schools surveyed, 66.5% were old (structural dating of more than 10 years), and only 33.5% (67 schools) were new (structural dating of less than 10 years). Among these schools, 99.5% (199 schools) provide healthy tap water places, 98.5% (197 schools) healthy hand washing facilities and 100% (200 schools) healthy toilets. The average level of school buffets health was observed 58.5%. The health and optimization status of the studied schools was 92-100% in accordance with article 13 of the regulation.

Conclusion: According to the results of this study, there were some problems that include the health status of school buffets, classrooms and toilets, as well as the safety status of the investigated schools, so that attention to the health of schools should be among the priorities of the government and the authorities.

Key Words: Environmental Health, Iran, Regulations of Article 13, School Health.

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1- INTRODUCTION

Home, school and society are the main milieus forming children's world and should be provided to meet their physical, psychological and social needs (1-3). Physical space is regarded as a dynamic factor in educating students in modern education (4, 5). Paying attention to physical, health and safety factors in learning environments has a great impact on learning process and mental development of students (6, 7). Thus, environmental health compliance plays a key role in school health. School environmental health encompasses the assessment and control of those environmental factors that may potentially affect students' physical, psychological and social health (8-10). It is targeted towards preventing diseases and creating health-supportive environments in schools (11).

The main threatening factors for environmental health, safety and ergonomics in schools including; inadequate learning space, being adjacent to unhealthy and unsafe locations, old buildings, unsanitary conditions of toilets, restrooms and water tap places, unhealthy and unsafe classrooms and school grounds, the risk of electric shock and fire, inadequate first aid supplies, inappropriate school furniture, loud noises, etc. (12-16).

Non-compliance with school health principles may cause a variety of parasitic and infectious diseases and diarrhea in students (17-20). Several studies on students have implied the existence of intestinal parasitic infection in 59 % and protozoan infection in 29.5% of them (21, 22). Determining the results of a school health situation in a region can identify school health weaknesses for relevant authorities, especially for the education organization. Thus, in the present study, the researchers studied the schools of Kermanshah, Iran, in terms of health and safety status to suggest proper recommendations, in case of unfavorable conditions, to the relevant organizations. Since the schools in Kermanshah have not been examined with regard to all educational stages and standard sample size determination so far, the researchers conducted this study to investigate the health status of these schools in the 2016 year.

2- MATERIALS AND METHODS

This cross-sectional study examines the health status of Kermanshah's schools, Iran. In this regard, the researchers visited the schools and completed a checklist comprising 88 questions, 74 of them on school environmental health (including drinking water, toilets, hand washing facilities, water tap places, buffet , classrooms, school grounds, sewage and garbage), and 14 questions is about on school safety status.

A researcher-made checklist has already been used in other studies. This checklist is designed based on the school health guidelines (developed by the health and work environment center of the Ministry of health, treatment and medical education). In this checklist, there are three options for answering each question, including "compliance with the rules", "non-compliance" and "there is not".

This regulation was approved by the Ministry of Education, Ministry of health, treatment and medical education and organization for Management and Planning in 1998. This checklist has 33 articles and 25 notes. The implementation of it by the relevant educational units of Ministry of education and the monitoring of its proper implementation is borne by Ministry of health, treatment and medical education (23). The validity of the checklist was confirmed by experts judgment and the reliability was estimated to be 82% using Cronbach's alpha test in a other study (24).

The target population included all 409 public schools of Kermanshah, Iran. Among them, 114 schools were covered by the health center "Samen-ol-Aeme" (district 1), 196 schools by the health center "Shahid Suri" (district 2), and 99 schools by the health center "Haj Ismail Sarabi" (district 3). The sample size (200 schools) was determined considering the earlier studies (25-27). The researchers used stratified random sampling to select the schools according to **Table.1**. The collected data were transferred to the SPSS-version 16.0 statistical software and the outputs were analyzed by using frequency, descriptive data and crosstabs instructions. It should be noted that the checklists were completed by the two researchers of this study with going to selected schools.

Table-1: The number of selected schools in different health centers, Kermanshah, Iran.

Health centers	"Samen-ol-Aeme" (District 1)			"Shahid Suri" (District 2)			"Haj Ismail Sarabi" (District 3).		
Schools	E.S*	S.S**	H.S***	E.S	S.S	H.S	E.S	S.S	H.S
Number	25	16	15	41	27	28	18	14	16
Total	56			96			48		

*Elementary school   **Secondary school   **High schools.

3- RESULTS

The aim of present study is evaluation of public school health of Kermanshah city and its accordance with school health national regulations. In total, the researchers surveyed 84 elementary, 53 secondary and 63 high schools in this research. According to results, 37 (66.1%), 62 (64.6%) and 34 (70.8%) schools had old buildings in district 1, 2 and 3, respectively. Overall, the results reported a very good health status of tap water places, hand washing facilities and toilets for 98.5% (197 schools), 99.5% (199 schools) and 100% of the studied schools, respectively. A poor health status was observed in relation to the toilets of the schools located in the district 2 and the tap water places of the schools located in the district 1. Based on the results of present study, 64.2% of tap water places, 78.6% of toilets and 65.5% of hand washing facilities in the primary schools of the city benefited from a very good health status. The health status of 32% of the studied school buffets was in accordance with the regulations of article 13 covering the requirements for receiving public health certificate. The standard distance from polluted and unsafe places was in accordance with the regulations of article 13 for all schools of the three districts. The health and optimization status of the surveyed classrooms was in 92-100% compliance with the regulations of article 13. The health and safety compliance of the schools with the regulations of article 13 in terms of air conditioning system, natural lighting, artificial lighting and corridor lighting was assessed 99.5%, 98.5%, 98% and 92%, respectively. Other results are presented in **Tables 2-9**.

Table-2: The frequency distribution for the sanitary services status of evaluated schools in Kermanshah based studied districts (2016)

Sanitary Level	District 1						District						District 3					
	D.W		T		HWF		D.W		T		HWF		D.W		T		HWF	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
C.US	1	1.8	0	0	2	3.6	0	0	0	0	0	0	0	0	0	0	1	2.1
50% S	2	3.6	1	1.8	1	1.8	0	0	0	0	0	0	0	0	0	0	0	0
50-100% S	16	28.6	10	17.8	17	30.3	31	32.3	18	18.7	34	35.4	15	31.3	10	20.8	17	35.4
C.S	37	66	45	80.4	36	64.3	65	67.7	78	71.3	62	64.6	33	68.7	38	79.2	30	62.5
Total	56	100	56	100	54	100	96	100	96	100	96	100	48	100	48	100	48	100

N: Number; C.US: Completely Unsanitary; 50% S: Up to 50% of Sanitary; 50-100% S: 50-100% of Sanitary; C.S: Completely Sanitary; D.W: Drinking Water; T: Toilets; HWF: Hand Washing Facilities.

Table-3: The frequency distribution for the sanitary service status of evaluated schools in Kermanshah based educational grades

Sanitary Level	Primary School						Junior School						High School					
	D.W		T		HWF		D.W		T		HWF		D.W		T		HWF	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
C.US	1	1.2	0	0	1	1.2	1	1.9	0	0	1	1.9	0	0	0	0	1	1.6
50% S	3	3.6	1	1.2	0	0	0	0	0	0	1	1.9	0	0	1	1.6	0	0
50-100% S	26	31	17	20.2	28	33.3	18	34	7	13.2	17	32.1	16	25.4	13	20.6	20	33.3
C.S	54	64.2	66	78.6	55	65.5	34	64.1	46	68.8	34	64.1	47	74.6	49	77.8	41	65.1
Total	84	100	84	100	84	100	53	100	53	100	53	100	63	100	63	100	63	100

N: Number; C.US: Completely Unsanitary; 50% S: Up to 50% of Sanitary; 50-100% S: 50-100% of Sanitary; C.S: Completely Sanitary; D.W: Drinking Water; T: Toilets; HWF: Hand Washing Facilities.

Table-4: The frequency distribution for the collection and disposal status of sewage and garbage of evaluated schools in Kermanshah based studied districts (2016)

Variable studied	District 1						District 2						District 3					
	Such cases do not apply		In the schools that this case have been applied?				Such cases do not apply		In the schools that this case have been applied?				Such cases do not apply		In the schools that this case have been applied?			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sanitary dustbins	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Garbage collection	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Sewage disposal and sanitary services	0	0	55	98.2	1	1.8	0	0	96	100	0	0	0	0	48	100	0	0

N: Number.

Table-5: The frequency distribution for the collection and disposal status of sewage and garbage of evaluated schools in Kermanshah based educational grades (2016)

Variable studied	Primary School						Junior School						High School					
	Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sanitary dustbins	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Garbage collection	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Sewage disposal and sanitary services	0	0	50	98.2	1	1.8	0	0	96	100	0	0	0	0	48	100	0	0

N: Number.

Table-6: The frequency distribution for the hygiene and sanitation of evaluated schools calss in Kermanshah based studied districts (2016)

Variable studied	Primary School						Junior School						High School					
	Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Class wall	0	0	54	96.4	2	3.6	0	0	94	97.9	2	2.1	0	0	47	97.9	1	2.1
Class floor	0	0	56	100	0	0	0	0	95	99	1	1	0	0	46	95.8	2	4.2
Ceiling			53	94.6	3	5.4	0	0	92	95.8	4	4.2	0	0	45	93.8	3	6.3
Panel class at the appropriate position	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Class space	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Class Dimensions	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Temperature	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Humidity	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Air conditioning system	0	0	56	100	0	0	0	0	96	100	0	0	0	0	47	97.9	1	2.1
Natural light	0	0	55	98.2	1	1.8	0	0	95	99	1	1	0	0	47	97.9	1	2.1
Artificial light	0	0	54	96.4	2	3.6	0	0	94	97.9	2	2.1	0	0	48	100	0	0
Corridor light	0	0	50	89.3	6	10.7	0	0	87	90.6	9	9.4	0	0	47	97.9	1	1

N: Number.

Table-7: The frequency distribution for the hygiene and sanitation of evaluated schools class in Kermanshah based educational grades (2016)

Variable studied	Primary School						Junior School						High School					
	Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Wall Class	0	0	79	96	5	6	0	0	53	100	0	0	0	0	63	100	0	0
Floor class	0	0	84	100	0	0	0	0	52	98.1	1	1.9	0	0	61	96.8	2	3.2

	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceiling	0	0	77	91.7	7	8.3	0	0	51	96.2	2	3.8	0	0	62	98.4	1	1.6
Panel class at the appropriate position	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Class space	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Class Dimensions	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Temperature	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Humidity	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
air conditioning system	0	0	84	100	0	0	0	0	53	100	0	0	0	0	62	98.4	1	1.6
Natural light	0	0	84	100	0	0	0	0	52	98.1	1	1.9	0	0	61	96.8	2	3.2
Artificial light	0	0	80	95.2	4	4.8	0	0	52	98.1	2	1.9	0	0	62	98.4	1	1.6
Corridor light	0	0	77	91.7	7	8.3	0	0	50	94.3	9	5.7	0	0	57	90.5	6	9.5

N: Number.

Table-8: The frequency distribution for the environmental health status of evaluated schools Buffet in Kermanshah based studied districts (2016)

Variable studied	Primary School						Junior School						High School					
	Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Certificates of Public Health	19	33.9	14	25	23	41.1	15	15.6	31	32.3	51	52.1	6	12.5	19	39.6	23	47.9
Health Card	19	33.9	24	42.9	13	23.2	16	16.7	57	59.4	23	24	6	12.5	28	58.3	14	29.6
Personal hygiene	19	33.9	29	51.8	8	14.3	16	16.7	55	57.3	25	26	6	12.5	29	60.4	13	27.1
Working clothes clean	19	33.9	24	42.9	13	23.2	16	16.7	52	54.2	27	29.2	6	12.5	28	58.3	14	29.6
Non-Smoking	0	0	56	100	0	0	0	0	96	100	0	0	0	0	0	0	48	100
Buffet building	19	33.9	26	46.4	11	19.6	16	16.7	54	56.3	26	27.1	6	12.5	30	62.5	12	25
Food storage in the right place	12	21.4	33	58.9	11	19.6	16	16.7	68	70.8	12	12.5	5	10.6	38	80.9	4	8.5
Suitable use of materials for packing	13	23.2	43	76.8	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Quality of food supplied	0	0	56	100	0	0	0	0	96	100	0	0	0	0	48	100	0	0
Maintenance location of school milk	0	0	51	91.1	5	8.9	0	0	95	99	1	1	0	0	44	95.7	2	4.3
Accordance with the regulations of matter 13	20	37.5	26	46.4	10	17.9	16	16.7	62	64.6	18	18.8	6	12.5	29	60.4	13	27.1

Table-9: The frequency distribution for the environmental health status of evaluated schools Buffet in Kermanshah based educational grades (2016)

Variable studied	Primary School						Junior School						High School					
	Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied				Such cases do not apply		In schools that this case have been applied			
			Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations				Compliance with Regulations		Failure to comply with regulations	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Certificates of Public Health	19	22.6	25	29.8	40	47.6	11	20.8	17	32.1	25	47.2	10	15.9	22	34.9	31	49.2
Health Card	19	22.6	42	50	23	27.4	11	20.8	31	58.5	11	20.8	11	17.5	36	57.1	16	25.4
Personal hygiene	19	22.6	45	53.6	20	23.8	11	20.8	31	58.5	11	20.8	11	17.5	37	58.4	15	24.8
Working clothes clean	19	22.6	45	53.6	20	23.8	11	20.8	30	56.6	12	22.6	11	17.5	29	46	23	36.5
Non-Smoking	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Building buffet	19	22.6	43	51.2	22	26.2	11	20.8	31	58.5	11	20.8	11	17.5	36	57.1	16	25.4
Food storage in the right place	14	16.7	57	67.9	13	15.5	19	15	39	73	5	9.4	10	16.1	43	69.4	9	14.5
Suitable use of materials for packing	-	-	9	10.7	75	89.3	0	-	4	7.5	49	92.5	0	0	63	100	0	0
Quality of food supplied	0	0	84	100	0	0	0	0	53	100	0	0	0	0	63	100	0	0
Maintenance location of school milk	0	0	79	94	5	6	0	0	52	98.1	1	1.9	-	-	59	96.7	2	3.3
Accordance with the regulations of matter 13	20	23.8	45	53.6	19	22.6	11	20.8	33	62.3	9	17	11	17.5	39	61.9	13	20.9

N: Number.

4- DISCUSSION

The results indicated that 66.1%, 64.56% and 70.8% of the schools in the three districts benefited from a standard health status. Out of the total number of schools in Kermanshah, 66.5% suffered from old buildings and 33.5% were provided with new buildings (67 out of 200). Therefore, as the researchers we may conclude that there should be developed a proper school renewal program in order to improve the environmental health status of the schools. The results of the present study are consistent with the earlier ones. Shirdarre et al. (2008) in their study on the health status of Jahrom secondary schools showed that 53.2% of schools had new and 46.8% of them old buildings (28).

Overall, the results reported a very good health status of tap water places, hand washing facilities and toilets for 98.5% (197 schools), 99.5% (199 schools) and 100% of the studied schools, respectively. A poor health status was observed in relation to the toilets of the schools located in the district 2 and the tap water places of the schools located in the district 1. The health status ranged from poor to very good for the studied parts of the schools. For instance, as it's shown in **Table.5**, only 66% of tap water places of the schools located in the district 1 benefited from a very good health status. An analog status was reported for 67.7% and 68.7% of the schools located in the districts two and three. School toilets with a very good health status in the three districts were reported 80.4%, 71.3% and 79.2%, while the number of school hand washing facilities with the same health status in the studied districts was 64.3%, 64.6% and 79.2%. Generally, the health status of tap water places in 135 (67.5%) schools, the health status of toilets in 161 (80.55%) schools and the health status of hand washing facilities in 128 (64%) schools were assessed as very good.

This result almost confirms the optimal healthy status of tap water places, washstand facilities and toilets in the schools of Kermanshah. Nevertheless, the current situation should be improved in order to prevent hygiene issues such as disease transmission. The results of the present study are consistent with the earlier researches. Pirzad et al. (2010) in their study on the health status of the governmental elementary schools located in the different districts of Isfahan showed that hand washing facilities, toilets and tap water places in the studied schools benefited from an optimal health status and no significant difference was found in this respect between the districts of the city (28). The study of Zazouli et al. (2010) indicated that 51.6% of the schools' Kalat-

Nader suffered from an improper health status for their hand washing facilities and toilets, 9.7% of them lacked healthy drinking water and in 29% of them the number of hand washing facilities and toilets was not commensurate with the number of students (29). Ganji et al. (2009) surveyed the health status of Arak schools and its compliance with national standards. The results revealed that the average compliance of the studied indices with national standards for school tap water places, hand washing facilities and toilets was 38.4% (30). Rahmaniyan et al. (2008) conducted a research on the health status of Jahrom secondary schools, which showed an optimal and standard health status for 69.4% of the tap water places, 82.2% of the toilets and 90.03% of the hand washing facilities (27).

Based on the results of present study, 64.2% of tap water places, 78.6% of toilets and 65.5% of hand washing facilities in the primary schools of the city benefited from a very good health status. These percentages for the secondary schools were 64.1%, 68.8% and 64.1% and for high schools 74.6%, 77.8% and 65.1%, respectively. Sohrabian et al. in their study aimed to compare the health status of Ilam schools found that 38% of the schools require healthy tap water places, 22% of them healthy hand washing facilities and 35% of them healthy toilets (31).

Naser Shadmanesh (1995) surveyed the school health and safety status and the factors influencing personal hygiene compliance in Sanandaj and reported an optimal health status for 70% of the tap water places and 48% of the hand washing facilities and toilets in the schools of the city (32). The health status of 32% of the studied school buffets was in accordance with the regulations of article 13 covering the requirements for receiving public health certificate. The health status was assessed for all components: having a health care card (54.4%), personal hygiene

compliance (56.5%), having clean clothes (52%), nonsmoking (76%), buffet buildings (55%), food storage in proper places (69.5%), using appropriate materials for packing (93.5%), convenient storage place for milk (100%). Overall, the average health status of the school buffets was 58.5%. This percentage may not be regarded as an ideal health status for Kermanshah's schools and should be taken more serious. The results of this study are consistent with other studies in this respect. In a study by Ganji and colleagues (2009) on the school health status of Arak and its accordance with national standards, results showed 34% of accordance for the buffets (30). Rahmaniyan et al. (2008) in their research on school health status of Jahrom reported an optimal and standard health status for 85.5% of the buffets (27). Sohrabian and colleagues in their survey found that 38% of Ilam schools require healthy tap water places, 22% healthy hand washing facilities and 35% of them healthy toilets (31). Moreover, they stated that 51% of the school buffets need healthy garbage disposal (31).

Based on the result of this study, the standard distance from polluted and unsafe places was in accordance with the regulations of article 13 for all schools of the three districts. It may be regarded as an advantage for school health and safety status. All studied schools except for one were in 100% compliance with the regulations of article 13 in terms of sewage and garbage disposal. This compliance in the studies conducted by Pirzad et al. (2010), Rahmanian et al. (2008) and Shadmanesh (1995) were reported 79% (34), 75.8% (31), and 42% (32) for the studied schools of Isfahan, Jahrom and Sanandaj, respectively. Sohrabian et al. in their survey revealed that 22% of Ilam schools require healthy sewage disposal and 15% of them need garbage collection and disposal (31). The health and optimization status of the surveyed

classrooms was in 92-100% compliance with the regulations of article 13. This compliance for classroom's walls, floor and ceiling was assessed 97.5%, 98.5% and 95%, respectively; while in terms of its space, size, humidity, temperature and whiteboard's place was observed 100%. Based on the result of present study, the health and safety compliance of the schools with the regulations of article 13 in terms of air conditioning system, natural lighting, artificial lighting and corridor lighting was assessed 99.5%, 98.5%, 98% and 92%, respectively. These conditions may be considered almost optimal, but due to the importance of the above-mentioned components in students' learning process and health, efforts should be made to improve their status. The results of this study are inconsistent with earlier ones. Ganji et al. (2009) in their survey on the school health status of Arak and its compliance with national standards revealed that the average compliance of the corresponding components was 37.13% (29).

Based on the above mentioned cases, in some cases, schools of Kermanshah city were better than schools of other cities and in some other cases were weaker. The factors that affect these differences include school management, school age, school attendance and regular training by health officials, budgeting status of schools, educational institutions, and so on.

5- CONCLUSION

According to the overall results of the study on the status of health and safety of schools in Kermanshah city, priority is given to improving the health status of school buffets in different aspects, the safety status of schools in terms of the existence of disaster emergency routes and the installation of grids Suitable health care and the improvement of classrooms and health facilities should be seriously addressed by the health authorities of the

province and the education organization. In order to solve the above problems in new schools, it is suggested that assistance be provided primarily from the funding of the education organization and, secondly, by collecting the required funding from the students. To solve the problems of old schools, modernization of schools is perhaps the best solution.

6- CONFLICT OF INTEREST: None.

7- ACKNOWLEDGMENTS

8- REFERENCES

1. Safari Y, Meskini H. The effect of metacognitive instruction on problem solving skills in iranian students of health sciences. Global journal of health science. 2016;8(1):150-56.

2. Mozafari M, Safari Y, Abasifard Z, Safari M, Sharafi K. Assessing dimension of metacognitive skills and its relationship with academic achievement in high school students. Acta Medica Mediterranea. 2016;32(Specia):899-903.

3. Safari Y, Alikhani A, Safari A. Comparison of blended and e-learning approaches in terms of acceptability in-service training health care workers of Kermanshah University of medical sciences. International Journal of Pharmacy and Technology. 2016;8(2):12893-902.

4. Sohrabian B, Shamsizade M, Samira y, Sadoughi Z. Compared to hygienic status of schools in Ilam province in 2007 and 2008. 12th national congress of Enviromental Health Shadid Beheshti University of Medical Sciences,Tehran, Iran. 2009:2536-47.

5. Cohen J, McCabe L, Michelli NM, Pickeral T. School climate: Research, policy, practice, and teacher education. Teachers college record. 2009;111(1):180-213.

6. Elias MJ. Promoting social and emotional learning: Guidelines for educators: Ascd; 1997.

7. Zare S, Hasheminezhad N, Dehesh T, Hasanvand D, Ahmadi S, Hemmatjo R. The Relationship between Mental Workload and Prevalence of Musculoskeletal Disorders among Welders of Tehran Heavy Metal Structures Company in 2016. Journal of Biology and Today's World. 2016;5(12):218-23.

8. Safari Y, Yoosefpour N. Evaluating the Relationship between Clinical Competence and Clinical Self-efficacy of Nursing Students in Kermanshah University of Medical Sciences. Indian Journal of Public Health Research & Development. 2017;8(2):380-85.

9. Montazeri N, Kianipour N, Nazari B, Ziapour A, Bakhshi S. Health Promoting Behaviors among University Students: A Case-Sectional Study of Kermanshah University of Medical Sciences. International Journal of Pediatrics. 2017;5(6):5091-99.

10. Kootesh B, Raisi M, Ziapour A. Investigation of relationship internet addict with mental health and quality sleep in students. Acta Medica Mediterranea. 2016;32(5):1921-25.

11. Mahmoudi S, Narimani M, Khatibi M, Mahmoudi B. Evaluating of elementary schools environmental hygiene in Tabriz Behsazan. Journal of Mazandaran University of Medical Sciences and Health Services. 2004:38-46.

12. Nassiri P, Zare S, Monazzam MR, Pourbakht A, Azam K, Golmohammadi T. Evaluation of the effects of various sound pressure levels on the level of serum aldosterone concentration in rats. Noise & health. 2017;19(89):200-6.

13. Zare S, Nassiri P, Monazzam MR, Pourbakht A, Azam K, Golmohammadi T. Evaluation of the effects of occupational noise exposure on serum aldosterone and potassium among industrial workers. Noise & health. 2016;18(80):1-6.

14. Malakootian M, Akbari H, Nekoei MM, Parizi A, Nekounam GA. Investigation of environmental health condition and safety

of schools in Kerman in 2007. Toloo-E-Behdasht. 2009;7(1):1-13.

15. Nassiri P, Zare S, Monazzam MR, Pourbakht A, Azam K, Golmohammadi T. Modeling signal-to-noise ratio of otoacoustic emissions in workers exposed to different industrial noise levels. Noise & health. 2016;18(85):391-8.

16. Nazari B, Bakhshi S, Kaboudi M, Dehghan F, Ziapour A, Montazeri N. A Comparison of Quality of Life, Anxiety and Depression in Children with Cancer and Healthy Children, Kermanshah-Iran. International Journal of Pediatrics. 2017;5(7):5305-14.

17. Sharafi K, Fazlzadehdavil M, Pirsaheb M, Derayat J, Hazrati S. The comparison of parasite eggs and protozoan cysts of urban raw wastewater and efficiency of various wastewater treatment systems to remove them. Ecological engineering. 2012;44:244-8.

18. Mirzaei N, Ghaffari H, Karimyan K, Moghadam F, Javid A, Sharafi K. Survey of effective parameters (water sources, seasonal variation and residual chlorine) on presence of thermotolerant coliforms bacteria in different drinking water resources. International Journal of Pharmacy and Technology. 2015;7(3):9680-89.

19. Pirsaheb M, Sharafi K, Ahmadi E, Moradi M. Prevalence of the waterborne diseases (diarrhea, dysentery, typhoid, and hepatitis A) in West of Iran during 5 years (2006–2010). Annals of Tropical Medicine and Public Health. 2017:In press.

20. Sharafia K, Pirsaheba M, Davoodib R, Ghaffaric HR, Fazlzadehd M, Karimaeib M, et al. Quantitative microbial risk assessment of Giardia cyst and Ascaris egg in effluent of wastewater treatment plants used for agriculture irrigation–a case study. Desalination and Water Treatment. 2017;80:142-8.

21. Hazraty T, Mohammad Zadeh H, Khashave S, Rezapour B. The survey of prevalence of intestinal parasitic infections in rural primary school students in Barandoezchay area, Urmia City. Urmia Medical Journal. 2010;7(2):242-37.

22. Rayegan A, Shahraki G, Fararoie M. Survey of Environmental Health of Primary school of yasuj city at 2000 years. Armaghane danesh Journal. 2001;4(1):55-61.

23. Health and Work Environment Center, Ministry of Health, Treatment and Medical Education, Iran. 1998.

24. Zare J, Kajbaf M, Mohiti A. The Accordance of Schools Health Status with the Regulations of School Health in Yazd. Journal of Community Health Research. 2014;3(3):177-84.

25. Shabankhani B, Âbdollahi F. Evaluation of hygienic environmental indexes (educational spaces) in village schools of mazandaran province in 2003. Journal of Mazandaran University of Medical Sciences. 2003;13(41):98-102.

26. Shahriari T, Moodi M, Hajiani M, Shahriari Z. Study of hygienic status of schools in Birjand during year 2007-2008. Journal of Birjand University of Medical Sciences. 2009;16(2):68-75.

27. Shirdarre M, Rahmanian R. Investigation of middle schools environmental health of Jahrom city in 1387. 12th National Conference on Environmental Health of Shahid Beheshti University of Medical Sciences. 2009;7(1):2556-57.

28. Pirzadeh A, Sharifirad G, Oruji M. Comparison of environmental health in public primary schools in different districts of isfahan. Health System Research. 2010;6(1):44-8.

29. Zazouli M, Najafzadeh M, Hamta A, Rostami F. The survey of schools environmental Health and Safety of Kalat Nader city, Khorasan Razavi. First National Student Conference Social Health Effects.2010, Iran University of medical sciences, Tehran, Iran. Available at:

https://www.civilica.com/Paper-SNCSDH01-SNCSDH01_312.html

30. Ganji M, Hashemian F. The survey of school environment hygiene condition of Isfahan city and amount its compliance with the national standards. Research Journal Isfahan University. 2009: 31(1):103-114.

31.   Sohrabian B, Shamsizade M, Samira y, Sadoughi Z. Compared to hygienic status of schools in Ilam province in 1386 and 1387. 12th national congress of Enviromental Health Shadid Beheshti University of Medical Sciences,Tehran, Iran. 2009: 2536-47.

32.   Shadmanesh N. Investigation of environmental health and safety of schools and effective factors on personal hygiene students in Sanandaj in 1374. Scientific Journal of Kurdistan University of Medical Sciences. 1996: 2(1): 20-24.

32.   Pirzadeh A, Sharifirad G, Oruji MA. Comparison of environmental health in public primary schools in different districts of isfahan. Health System Research. 2010:44-8.