



Original Research Article

Improving Health School Environment

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The purpose of this research was to assess advisor's knowledge and to improve the level of school health services. This was to allow all students to achieve and maintain an ideal state of health and well-being. A survey covered female and male schools, private and governmental schools, and primary, intermediate, and high\secondary schools. This study was applied on 950 school advisors, and includes a total of 615 responses (65% response rate). Almost 91% (555 responses) have faced medical emergency cases in their schools. In all nations, ability and knowledge were the cornerstones of civilization and evolution; one healthy and educated person could contribute to the human revolution.

Key words: School health advisor, student services, health promotion.

INTRODUCTION

Saudi Arabia had the intention towards fulfillment of 2030 vision to improve public health in the whole country (Saudi Vision 2030, 2018). A comprehensive school health program is to initiate one clinic in each school with more than 300 students (MOE, 2016). This type of service will promote and improve education for students within a healthy environment based on community needs resources under specific standards. This program based on health education models, which will integrate the education and whole school environment (Lewallen et al., 2015). The world health organization (WHO) was supporting such programs in all educational setting since this was the largest population in each country (Jones and Furner, 1988). School nurses or school health services was a specialized practice to provide and facilitate care for illness or injury while at school, to ensure that all students were in healthy environments and getting an appropriate referral to healthcare providers (Magalnick and Mazyck, 2008).

School health services (SHS) in Saudi Arabia facing public health issues that affect students. It plays a major role in helping to reduce or prevent the incidence of the student's illness and assist schools with disease prevention and control guidance (Michigan dept., 2014) Establishing SHS under the responsibility and guidance of the Ministry of

Education gave the opportunities to reinforce a consistent message to all school staff and their student forward application of standard policy and procedure. Expected illnesses in schools are asthma, diabetes, seizures, infection disease, anemia, obesity and others.

Currently, the schools at Riyadh region had shown in Table 1. This large number of students needed a program for SHS where a system must be placed to deal with first aid, medical emergencies, infectious diseases and some chronic illnesses (Education Development Center, Inc., 2000) The illness needed appropriate school health advisor program, which should be implemented to improve the health status of the whole school.

School health advisor got training in first aid, and how to deal with emergency and infectious diseases. These school health advisors used to be selected due to their ability to positively influence students, familiar with the health and environmental problems of the school community and the desire to volunteer work in addition to the love of knowledge and knowledge in the field of health (MOH-KSA, 2014). The main job descriptions of the school health advisors are:

1. Achieving effective collaboration between school health and educational staff.

Table 1. Census of Schools and Students in Riyadh Region -2018

Government Schools-Boys			
	primary school	intermediate school	secondary school
Number of school	613	356	163
Number of student	195647	93147	1461
Number of class	7572	3349	46021
Government Schools-Girls			
	primary school	intermediate school	secondary school
Number of school	558	357	188
Number of student	216607	102818	64650
Number of class	7337	3267	1800
Private Schools-Boys			
	primary school	intermediate school	secondary school
Number of school	285	172	109
Number of student	50111	16870	17656
Number of class	2950	902	892
Private Schools-Girls			
	primary school	intermediate school	secondary school
Number of school	206	181	123
Number of student	64285	1380	36516
Number of class	3367	27333	1585

2. Qualifying educators to assist the school health advisor in carrying out school health tasks.

3. Achieving modern approach to school health by launching school health services and programs from school.

4. Providing trainees with the skill of dealing with emergency cases until the arrival of the specialized medical team.

5. Promoting the health of students and improving the educational process through their association with health (MOH-KSA, 2014).

The traditional model of school health program was originated in early 1980. This model had three aspects, comprehensive health education, prevention and identification of the health problem, and physical and psychosis settings (Allensworth et al., 1997).

The American Academy of pediatrics recommended identifying the needs and resources of education, healthcare and social services or integrated school health services. Integrated school health services were implemented according to assessment of community needs and with adequate attention to quality assurance (Society of Health and Physical Educators). The experience of Western Australia in School Health Services (SHS) was to facilitate early detection of health concerns and enhancement. It had been assumed that schools were ideal places to support and promote the health and well-being of children and adolescents (Cross and Morrissey, 2016). On the other side, health-risk behavior identified as violent behaviors are linked to poor grades and lower educational attainment (CDC, 2018).

This research was to provide guidance for school health advisor, principles, school staff and community members.

This project was also to enhance communication

between school health advisor and community.

Objectives and Aim

The objective for this study was to improve quality of life to all the students with chronic diseases; focus in students' health needs (preventive, emergency, acute, and chronic) to permit students to reach the greatest possible level of educational accomplishment and personal health. Actual attention would be given to the students with special health care needs who command special education and related services.

The aim of this study was to assess health advisor's knowledge and to improve the level of school health services. This was to allow all students to achieve and maintain an ideal state of health and well-being for their own health.

Research Question

What is the level of school health services in Riyadh and what are the recommendations to improve it?

METHODS

This is a cross-sectional survey represented the knowledge of school health advisors in schools in Riyadh area and assessed school health services that was provided to students. The survey covered female and male schools, private and governmental schools and represent also kindergarten, primary, intermediate and high\secondary schools.

Instrumentation

Questionnaire formation was made in-house to form an appropriate picture about the current status of school health advisor and their health knowledge. The questionnaire was filled by one of the investigators during their visits the school and performed a personal interview between school health advisor, electronic survey, phone calls and personal communication. Most of the questionnaires were closed-ended and open-ended question where the advisor can express detailed information; a copy of the questionnaire is attached within this study appendix (1).

The questionnaire took over several questions related to type of school, area (in Riyadh), the experience of school advisor and what was their reaction in case of emergency events occur in their school. Also, the questionnaire took several questions related to emergency cases, regarding the number of occurrences, type of emergencies cases, if the school advisor had attended workshop or lectures related to health. More questions related to medications, medical instruments, how do the communication with parents and emergency services, reaction in case of infectious diseases and if they have ideas or recommendation.

Procedure

The sample size had been calculated using a survey system creative research center tools with a confidence level of 95%, the confidence interval of 5 %, tracking more than 3000 schools' services and a population about one million students in Riyadh region. Data were obtained and collected in excel sheet.

Data Analysis

Data had been transferred from excel sheet to be analyzed using a SPSS 22.0 software package to have descriptive analysis, frequency, and percentage of the variables. A demographic analysis of the current situation was presented as a Table, graph and chart. Ethical certificate was obtained from Prince Norah Bin Abdulrahman University (PNU) health science research center.

RESULTS

This study was applied on 950 school advisors, while the respondents were 615 responses (about 65%) from different schools through E-surveys and by personal interviews among Riyadh Schools. Most of the respondents were female's schools 524 responses (more than 85%) compared to male's schools 91 response; more than 90% of the respondents (557 responses) were governmental school and only 58 schools were private. The best reaction for the respondents were came from male high school with a respondent rate almost 65%. Table 2 showed a demographic data for the type of schools, governmental or

private, male or female, and if the school was elementary, intermediate or high school, it was also represented some data for the kindergarten schools.

Almost 91% of the respondents (555 responses) had faced medical emergency cases per year in their schools and only 60 schools did not record a medical emergency during the last year. Some schools (n=26) recorded more than 50 medical cases a year, others were vary as shown in Table 3 for the number and percentage of cases had been recorded annually, 46.2% (284 responses) had faced almost (1-3 cases/year), 25% (154 responses) were faced (4-10 cases/year), 14.8% (91 responses) were faced (11-49 cases/year) and only 4.2% (26 cases/year) were faced almost more than 50 cases.

Medical cases were varied among 8 common cases such as diabetes, asthma, seizures, fever, fainting, gastrointestinal infection, physical injuries and cardiovascular diseases (CVD) like uncontrolled blood pressure, anemia and heart problem. Some respondents had gone to the combination of (diabetes + seizures + asthma+ fainting) by 34.3% (211 cases), compared to asthma 14.6% (90 cases), diabetes 11.9% (73 cases), seizures 7.5% (46 Cases), physical Injures 6% (37 cases), CVD 5.7% (35 cases) and others by 5.5% (34 cases).

Attending a medical course or workshop for school advisors is one of the essential practices to improve school health environment. The respondent's showed 68.5% (421 responses) were attended a medical course or a workshop, while 31.5% (194) responses were haven't. Different medical (courses, programs and workshop) used to be offered for the school advisor, however, 42.9% (264 responses) attended first aid only, 9.9% (61 responses) attended workshop about the chronic diseases, 5.9% (36 responses) attended infectious diseases workshop, and only 1.1% (7 responses) attended a workshop to prepare the school health advisories for the job, where almost 4.3% has attended multi workshops from all of the above, despite to know that some school advisors had attended only awareness campaigns.

For better school health care, the investigators assumed that the school advisors should had presented educational session(s) for the students, where it was found that 71.2% respondents (438 responses) had presented only one health educational session. These sessions gave the opportunity to the school advisors to have knowledge about the student medical status. It was found that school advisors usually collected medical history of the students during beginning of the first semester by 64.9% (399 responses) while the respondents 16.3% (100 responses) collected medical history of the students from their parents and only 9.8% (60 responses) from student him/her-selves.

It is also found that the most common medications available in schools were analgesics with 34.6% (213 responses). Also found, 8.3% (51 responses) have analgesic + muscle cream + burns cream + asthma inhalers, 8.1% (51 responses) have analgesic + first aid, 6.7% (41 responses) have Analgesic +Asthma, and 1.6% (10 responses) claimed they have a full clinic. These

Table 2. Cross Table of the Gender, Type and the Grade of the School

Genders				Type of school		Total	
				Governmental	Private		
Female	Grade	Elementary	Count	186	11	197	
			% of Total	35.5%	2.1%	37.6%	
	Intermediate	Count	123	5	128		
		% of Total	23.5%	1.0%	24.4%		
	High	Count	161	24	185		
		% of Total	30.7%	4.6%	35.3%		
	Kindergarten	Count	14	0	14		
		% of Total	2.7%	0.0%	2.7%		
	Total			Count	484	40	524
				% of Total	92.4%	7.6%	100.0%
Male	Grade	Elementary	Count	18	3	21	
			% of Total	19.8%	3.3%	23.1%	
	Intermediate	Count	9	1	10		
		% of Total	9.9%	1.1%	11.0%		
	High	Count	45	14	59		
		% of Total	49.5%	15.4%	64.8%		
	Kindergarten	Count	1	0	1		
		% of Total	1.1%	0.0%	1.1%		
	Total			Count	73	18	91
				% of Total	80.2%	19.8%	100.0%
Total	Grade	Elementary	Count	204	14	218	
			% of Total	33.2%	2.3%	35.4%	
	Intermediate	Count	132	6	138		
		% of Total	21.5%	1.0%	22.4%		
	High	Count	206	38	244		
		% of Total	33.5%	6.2%	39.7%		
	Kindergarten	Count	15	0	15		
		% of Total	2.4%	0.0%	2.4%		
	Total			Count	557	58	615
				% of Total	90.6%	9.4%	100.0%

Table 3. Frequency of the amount of cases happened per year

	Frequency	Percent
0	60	9.8
(1-3)	284	46.2
(4-10)	154	25.0
(11-49)	91	14.8
More than 50	26	4.2
Total	615	100.0

medications were usually provided from the district health unit 33.9% (208 responses) by personal communication, 32.6% (200 responses) bring the medications by themselves, 22% (135 responses) from the school budget and 1% (6 responses) have them from Community partnership. Almost 57.6% (354 responses) have medical instruments like thermometer while the rest has nothing. The most surprising founding was 30.1% (185 responses) have no medication at all. Figure 1 shows the availability of common medication in Riyadh schools.

The most difficult part of the questionnaire was the reaction of the school advisors in case of medical

emergencies events in their school. Whether if they would take permission from their parents to transport the student to the most appropriate health care unit. It was amazing to find that only 18% (111 school advisories) had contacted the Ministry of health counseling number 937. Parents were insisted to transfer their kids in case of emergency, it was found that 48.1% (296 responses) would take the full responsibility to transfer the student to a medical care unit, 68.3% (420 responses) that they needed to take a permission first in order to transport the emergency case to the most appropriate care unit, and only 20.8% (128 responses) would let the school take the student to a

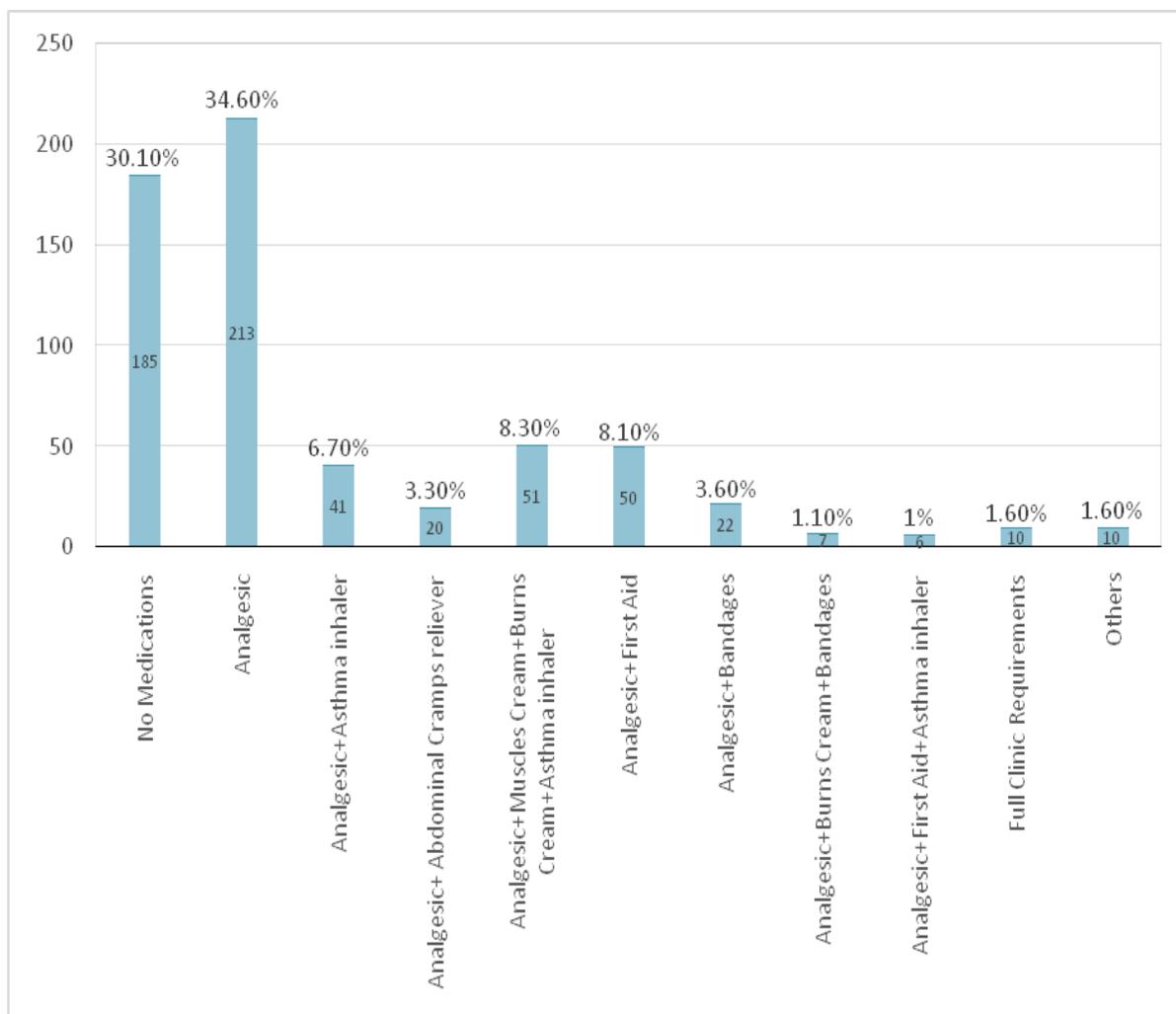


Figure 1: The Availability of Medications in Riyadh Schools

Table 4. Frequency of the question “Is there a relation between the geographic place of the school and the health outcomes of the students?”

	Frequency	Percent
No	295	48.0
Yes	320	52.0
Total	615	100.0

medical care while the action mostly they contacted a medical ambulance 28.9% (178 responses) to come and help the situation. Regarding the medical emergencies responses, it was found that about 42% (258 responses) had immediate response and 41.5% (255 responses) didn't answer that question and only 16.3% of the respondents (100 responses) had a low rate response from the ambulance in case of medical emergencies.

It was found that 52% (320 Responses) thought that there was strong relation between the low health outcomes

in link with school location where 48% (295 Responses) thinks there was no relation Table 4.

DISCUSSION

A survey has been issued and distributed over all Riyadh educational offices to study the health environment and how school advisors handled it. Investigators used all communication pathways to distribute their survey

through Internet by specific emails, twitters, WhatsApp, messages, and personal phone interviews. The rates of respondent about 65% with a total of 615 schools' advisors have been filled and completed the survey out of 950 schools. Most of respondents were female schools with respondents of 85.2% in comparison with male, this was due to females school advisors are more efficient with the follow up than males. All types of schools including elementary, intermediate, high, kindergarten had been subjected to fill the survey. It had been noted that the responses for male high schools were distinguished with almost 65% compared to the others. It was found that governmental schools' respondents were almost 91% compared with the private schools.

It was quite common that schools might experience medical emergency events such as injuries, complications of chronic health conditions, or an expected major illness (such as infection) that may occur in schools. It is very shocking results that 91% of the schools have experienced medical emergency cases per year in their schools and only 60 schools did not record a medical emergency during the last year. Some school (n=26) had recorded more than 50 medical cases per year, others were vary as shown in Table 3 for number and percentage of cases had been recorded annually, 46.2% (284 responses) had faced almost (1-3 cases/year), 25% (154 responses) were faced (4-10 cases/year), 14.8% (91 responses) were faced (11-49 cases/year). Schools across Saudi Arabia are varying tremendously in their degree of preparedness to deal with emergency cases. Most schools were not prepared well on how to deal with emergency cases in student or staff.

It was expected that school health advisors should play a role in controlling needs of students with chronic health conditions. Chronic health conditions (CHCs) is defined as a health condition lasting for more than three months and dependent on medication, assistive devices, or routine medical care (Leory et al., 2017). In this study, it was found that most students with chronic health conditions confronted by respondents such as diabetes, seizures, and asthma and fainting by 34.3% (211 cases) as CHCs. These cases increased the needs for school nurses or a designated emergency medical technician such as health provider who will be responsible for coordinating and conducting health assessments, as well as planning and implementing individualized health-care plans for safe and effective management of CHCs.

More children with chronic illnesses (CHCs) were attending school, and some of them struggle academically because of issues related to their health. Students with chronic health conditions may face lower academic achievement, increased disability, less job opportunities and limited community interactions as they enter adulthood, students spend a significant amount of their time in schools, it is important to understand the relationship between chronic health conditions and academic achievement. Previous reports showed that students who were able to manage their chronic health conditions tended to have better academic outcomes (Leory

et al., 2017; Taras and Potts-Datema, 2005)

Ministry of health is used to provide health education activities in terms of courses or workshops such as first aid, cardiopulmonary resuscitation (CPR), primary management of chronic condition, etc.

- First aid

Emergency care that to be given to an injured person before regular medical aid can be obtained in the conditions such as bone fracture burns, wounds and bleeding (American Red Cross).

- Cardiopulmonary resuscitation (CPR)

Cardiopulmonary resuscitation is a procedure performed in emergency cases when the heart stops with the goal of prolonging circulation and breathing, CPR is a life-saving technique useful in cases of heart attack or near drowning, it is recommended that all teachers to have a CPR courses to do something better than to do nothing (American Red Cross).

- Primary management of chronic Health condition

Health defined condition lasting for more than three months and dependent on medications assistive device or routine medical care. It is imperative if a teacher becomes patients' caregivers that would be highly appreciated through having courses and training on how to assist a chronic health condition and deal with it by communicates with a Red Crescent (Better Health Channel).

In order to detect the quantity and quality of the available medications in school, it was found that 30.1% of schools with no medication at all, 34.6% of the schools have analgesic only, and the rest are varied between full clinic requirements, analgesics, first aid, asthma inhaler, burns cream, bandages and muscles cramps cream etc. After deep investigation, it was discovered that the ministry of education prohibited having any type of medication in school other than paracetamol. These variations in quantity and quality of medications available in schools came from different medical source supplies like district health unit, school budgets, and personal communication. About 32.6% claimed that the school health advisors brought them by their own budgets or the community partnership. Despite the unavailability of medications in the western schools, but they provide a storage to keep the students' medication when they bring it by themselves, and the school will be responsible to keep medications appropriately during school hours (Medicines in School Policy – Kelsey Primary School).

The survey showed that school advisors have very week communication processes specifically with the Ministry of health counseling number "937", that only 18% (111 school advisories) had contacted this hot line. This is because of the untrusted relation with the medical team or they should have experience with health care emergency, yet it was very low. It was found that 48.1% of the respondents (296 responses) would take full responsibility to transfer their kids' (while they were in school as students in case of emergency) to a medical care unit. It was disappointing to know that 68.3% (420 responses) of the respondents needed to take a permission first in order to transport

the emergency case to the most appropriate care unit.

Investigators of this study suggested to create a team of at least six teachers "health supporting team" to support effective and safe learning environment; though they have well training to achieve a student health needs. Health support team could be created with minimum achievement of the above-mentioned course and workshops. This health supporting team should be established in each school within school-teacher; and should play as a caregiver, performing CPR, have a hotline to communicate with Red Crescent. Spreading of health concepts among school-teachers and getting courses annually is one the most essential technique to improve school health environment and for better outcomes.

It was suggested also to provide a mechanism where it facilitates the communication between school health team and Red Crescent. Establishment of health team in each school should be mandatory. A six-member team includes (school academic advisor, sport advisor and four teachers within the same school) to ensure fast response, reduce complication(s) that might occur and increase the level and concept of health care in school. These health-supporting teams also, have to monitor the school environment for safety and evaluate injury, ensure adequate health service facilities, and handling accidents, sudden illness, or crisis. Furthermore, this team may go further by training the others such as school bus drivers and cafeteria workers, to give immediate and temporary first aid care for acute illness or injury.

This study is really far from those who recommended students participation in teaching aspect of student health (Hammerin et al., 2018), which was really great idea and so beneficial that helps and save lives of many students in the future.

It is so important to continue the stream flow of the school by improve the association between academic environment, school climate school safety, mental health (Aldridge and McChesney, 2018).

Recommendations to improve school health environment

Undoubtedly, some of the respondents tried to express their efforts and share their experiences toward emergency cases. They helped in inspiring with some recommendations that will be useful to enhance and improve the health environment and outcome:

1. Provide medical supplies and medications.
2. Provide annual budget for school health services.
3. Provide physicians, nurses, emergency medical technicians or healthcare providers as a school health advisor.
4. Establish job description for school health advisors.
5. Provide courses and workshops to improve school health environment.
6. Improve communication between school and emergency medical institution(s) such as red Crescent in case of medical emergency cases.

7. Improve communication between schools and medical care unit(s)

8. Cooperate with public health at Ministry of Health to share medical campaigns

9. Establish electronic medical history for students linked to medical care units specifically for students with chronic health conditions (CHC).

10. How to deal with chronic health conditions.

11. Provide routine follow-up in case of CHC.

12. Provide offices or rooms in each school as a small clinic for school health advisors

13. Agreements between the schools and the parents so that the schools will be able to transfer students in emergency cases.

14. Protect students' privacy and confidentiality specifically in case of CHC.

15. School health services should have an access to promote healthy environments though linking school health team, students, their families and health care units.

16. Create a school health supporting team with at least 6 teachers to provide health services.

Conclusion

In all nation, it is found the ability and knowledge are the cornerstone of civilization and evolution, one healthy educated can contribute in human revolution. That is why the developed countries give the full attention and care to both health and education to make their community and environment the best. It is a dual function of ministry of health and ministry of education to increase awareness of school on how to deal and play role in responding to emergency and to improve school health environment.

Human Subjects Approval Statement

Ethical certificate was obtained from PNU health sciences research center with IRB log number: 18-0144 as exempted approval.

Limitations:

Due that our Survey collection needed permission from both the Ministry of health and the Ministry of education that interrupted the speed of the process and thankfully this limitation had been overcome.

The environment and behavior of the Saudi population are totally different compared with other countries. In addition there are very limited studies concerning the issue of the health environment in schools are very limited, and even if there is any in the Arabic world, it can't be published since there is no Arabic-medical journal available in Arabic.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this manuscript.

REFERENCES.

- Aldridge JM, McChesney K (2018). The relationships between school climate and adolescent mental health and wellbeing: A systematic literature review. *Int. J. Educ. Res.* 88:121-145.
- Allensworth D, Lawson E, Nicholson L, and Wyche J (1997). *Schools & Health: Our Nation's Investment*. Washington (DC): National Academies Press (US).
- American Red Cross first aid training services, First Aid course. redcross.org
- CDC. (2018). Center of disease control Health and Academics, Adolescent and School Health | [Cdc.gov](https://www.cdc.gov/healthyyouth/health_and_academics/). https://www.cdc.gov/healthyyouth/health_and_academics/
- Cross K, Morrissey M (2016). School Health Services in Western Australia. *Health School Health Services in Western Australia*. <http://www.health.wa.gov.au/circularsnew/attachments/979.pdf>
- Department of Health and Human Services. Better Health Channel. Managing long-term illness and chronic conditions. betterhealth.vic.gov.au
- Education Development Center, Inc. 2000. Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia, USA. Local Action Creating Health Promoting Schools. World health organization's information series on school health. http://www.who.int/school_youth_health/media/en/sch_local_action_en.pdf.
- Guidance document by Society of Health and Physical Educators. Appropriate Practices in School-Based Health Education. [Shapeamerica.org](https://www.shapeamerica.org/publications/products/appropriatepractice_schoolhealth.aspx). https://www.shapeamerica.org/publications/products/appropriatepractice_schoolhealth.aspx
- Hammerin Z, Anderson E, Maivorsdotter N (2018). Exploring student participation in teaching: An aspect of student health in school. *Int. J. Educ. Res.* 92:63-74.
- Jones JK, Furner M (1998) WHO's Global School Health Initiative. *Health Promoting School*. World Health Organization, Education and Communication, Health Education and Health Promotion Unit, Geneva, Switzerland.
- Kelsey Primary Responsibility Determination Respect. Management of Drugs Related Incident Policy. <http://www.kelsey.lincs.sch.uk/>.
- Leroy Z, Wallin R, Lee S (2017). The Role of School Health Services in Addressing the Needs of Students with Chronic Health Conditions: A Systematic Review. *J. School Nursing.* 33 (1): 64 – 72.
- Lewallen TC, Hunt H, Potts-Datema W, Zaza S, Giles W (2015). The Whole School, Whole Community, Whole Child model: a new approach for improving educational attainment and healthy development for students. *J. School Health.* 85(11): 729-739.
- Magalnick H, Mazyck D (2008). Role of the School Nurse in Providing School Health Services. *Pediatrics.* 121(5):1052 -1056.
- Michigan department of education schools and Michigan Department of Community Health, Divisions of Communicable Disease & Immunization (2014). *Managing Communicable Diseases in Schools*. Version 1.
- Ministry of Education, Riyadh Education Department (2016). 180 clinics allocated for Riyadh schools. *ARAB NEWS.* 10 February.
- Ministry of Health, Health in Saudi Arabia (2014). *School Health Guides*. [Moh.gov.sa](https://www.moh.gov.sa/endepts/School-Health/Pages/School-Health-Guidelines.aspx). <https://www.moh.gov.sa/endepts/School-Health/Pages/School-Health-Guidelines.aspx>.
- Saudi Vision 2030. (2018). [Vision2030.gov.sa](http://vision2030.gov.sa/en). <http://vision2030.gov.sa/en>
- Taras H, Potts-Datema W (2005). Chronic health conditions and student performance at school. *The J. school health.* 75 (7): 255- 266.

Appendix.1

Survey to Improve School Health services in Riyadh

Q1: In Which School, do you Work?

- Elementary
- Middle
- High
- Kindergartens

Q2: What is the type of School do work at?

- Governmental
- Private

Q3: For which supervision office, do you belong?

- East
- South
- Center
- Nahdah
- Albadeaa
- Almozahamia
- West
- North
- Rawabi
- Alharas
- Druema
- Remah

Q4: What Students' gender, do you work for?

- Girls
- Boys

Q5: How ever experience any emergency case at the school?

- Yes
- No

Q6: If yes, How many in each year?

.....

Q7: What type of cases?

.....

Q8: Have attended to any medical workshop?

- Yes
- No

Q9: If yes what was the workshop's subject?

- First Aid
- Chronic disease
- Infectious disease
- Others.....

Q10: Have you ever present a health workshops or lectures to the students?

- No
- Yes

Q11: Do the teaching staff know the sick students and their medical conditions and how to deal with it?

- No
- Yes

Q12: How do you get the students medical history?

- Form the student
- Form the parents
- Collecting the data in the first of each year
- By coincidence

Q13: Mention the medication you have?

.....

Q14: How is in charge to offer the medications?

- School
- The health unit
- The school health advisor
- Others

Q15: Do you have a medical instrument like the thermometer?

- No
- Yes

Q16: When there is a medical case that needs to be moved to the hospital?

- Family come to take her
- School take the responsibility of referral
- A special medical team come to do the job
- Others

Q17: Do you need the parents' permission to take her to the hospital

- Yes
- No

Q18: Do you apply the infection control system at the School you work

- Yes
- No

Q19: Do you think that there is a relation between the level of health and the school location

- Yes
- No

Q20: Do you know the 937 belongs to whom

.....

Q21: Please set your ideas that will enhance the School health outcome?

.....