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RESEARCH ARTICLE

Assessment of First Aid Knowledge among School Instructors in Al-Madinah Al-Munawarah City, Saudi Arabia 2014.

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Manuscript Info *Abstract*

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Background: With an increasing burden of accidents in young age group and particularly among school children, the need of introducing BLS and First response training to the school teachers have become essential. Evidence shows that spontaneous response of the teachers in emergencies is less than 30% and knowledge of basic principles of first Aid is deficient in more than 19% of them.

Objective: This study aims to assess existing knowledge, attitudes, and practices towards first aid among schoolteachers and members of school's management committee in Al-Madinah, Saudi Arabia in order to identify the gaps regarding this critical public health problem.

Methods: A cross sectional study has been conducted during October-December 2013, over a sample of 341 school instructors by using non probability quota sampling technique where one third were Saudi male & two third of the sample were female instructors in governmental schools in Al-Madinah .

Results: Out of the total responders, 67.3% were less than 40 years old, while 88 % were ever married and 85.7% were of high education. It was found that 93.3% had more than two years of service.It was shown that 30.18% of the participants had encountered with an emergency condition during their service and 29% of them applied the first aid themselves.Overall knowledge of participants was found to be maximal for managing bleeding wounds (76.3%).

While minimal knowledge was reported for CPR only by (7.4%) of participants. Regarding attitude of participants, a vast majority (92%) identified need of proper first aid training program in schools.

Conclusion: The study showed that our schoolteachers had low level of knowledge about first aid for the emergencies occurring in school. Most of them preferred to call others for help.

Introduction:-

According to World Health Organization, injury is the leading cause of death and disability among school-age youth [1]. Injuries at school are most commonly sustained by high school as 41%, while middle school students 31% and the elementary school students (28%). It was reported that school nurse was visited by 80% of elementary school children for an injury-related complaint [2]. Globally, about 2 million injuries are among high school athletes and more than 3.5 million kids under age 14 receive medical treatment for sports injuries each year [4]. The frequent causes of school injuries that result in hospitalization are falls (43%) and sports activities (34%) [3, 2]. The evidence shows that 66.3% of children under 12 years of age suffered head injury [5]. Overall, male students are reported to be injured 1.5 times more often than female students, and rate of hospitalization found to be 3 times more among injured males as compared to

females [6,2]. A study at Yeditepe University, Turkey 2012 shows that one in 10,000 childrenexperiences an anaphylactic attack every year. It has been demonstrated that 82% of these attacks occur in children of school.

Injuries can be prevented to a greater extent by increasing knowledge of first aid among general population to avoid complications or to reduce the delay in seeking proper care for injuries[6]. First Aid can be defined as the emergency treatment of illness or injury in order to maintain life, to ease pain and to prevent deterioration of the patient's condition until professional medical help can be obtained[8]. The basic goal of first aid delivery is to reduce morbidity and mortality due to emergency events [9]. It was noticed in a research that less than 30% of people tend to respond immediately in emergencies that requires First Aid. However, local evidence shows that more than 19% of people did not know basic First Aid principles [10]. Regrettably, it was found that 77% of people in the Middle East do not receive suitable practical First Aid training as compared to other countries, where First Aid training programs showed momentous improvement in teacher's ability to take care of their students in case of a medical emergency [13][14].This first aid training programs create awareness about the trauma and accidents' prevention make them aware about the importance of first aid , equip them with basic knowledge and skills of providing first aid and supply them necessary resources commonly required for first aid management

It is evident that health-promoting initiatives and first aid training in schools can improve the safety promotion and injury prevention for the purpose of creating a healthy school environment[7]. Local study showed that female primary school staff were found to have insufficient level of knowledge and practice of first aid and there were a high percentage of teachers who cannot do cardiopulmonary resuscitation (CPR) or know the first aid in case of seizure [11]. While the majority of the teachers lack the principles of managing a child who sustains dental injury [12].

The aim of this study was to assess the first aid knowledge among the school staff and to determine the prevalence of accidents and resultant injuries in schools. The study results would be useful to highlight the importance of first aid training program for the schoolteachers and probably indicative of the need of a nurse in all schools in order to deal with expected emergencies.

Methodology:-

A cross sectional study has been conducted over a sample of 341 Saudi males and females instructors in governmental schools in Al-Madinah Al-Munawarah city, Saudi Arabia during October until December 2013. A self-administered questionnaire distributed over all participants after taking their informed consent to assess their knowledge, attitudes and practices regarding the first aid for accident at the schools.

A pilot study had been done to check feasibility of study & improving the questionnaire before the start of actual data collection.

Four hundred questionnaires were disseminated to the schools, and we got back only
341 questionnaires. Data has been collected and entered to the computer using SPSS (Statistical Package for Social Science) program for statistical analysis (version IBM SPSS statistics 19).

Data from questionnaires was entered as numerical or categorical, as appropriate. Two types of statistics have been done:

1. Descriptive statistics: where quantitative data was shown as mean and SD, while qualitative data was expressed as frequency and percent.
2. Analytical statistics: where Chi- square test was used to measure association between qualitative variables, P-value wasconsidered statistically significant when it was less than 0.05.

Results:-

The response rate of this survey was 85% (n=290/341). The data was comprised of (36.4%) primary schools, (20.2%) intermediate and (41.1%) secondary schools. Majority of participants (81.2%) were teachers, (9.5%) were managers, administrative and the remaining 5.6% were lab technicians. Out of the total responders (n=237) for age, 67.3% were of age group less than 40 years old (see fig 1), 88 %(n=191) were ever married, 68% of the responders were females and 32% males. Most of them (85.7%) were of high education (see fig2). Fig3 shows that (93.3%) had experience of more than two years of service.

Out of the 20 participating schools, 12 were having at least one or more first aid kit, while 3 did not have it and 5 schools did not respond to the question (See fig 4). However, the accessibility of first aid kits was found to be limited (68.5%) for various reasons.

Table 1 shows that most commonly encountered emergency conditions in these schools were abdominal colic (51%), headache (45.2%), epistaxis (33.4%), asthma (31.1%) and fainting (26.7%).

Regarding knowledge of our participants towards helping students in different emergency states, it was found (see Table 2) that the overall knowledge of participants was maximal for managing bleeding wounds (76.3%), followed by managing choking (68.8%) and helping asthmatic attack in (60.5%). While minimal knowledge was reported for CPR only by (7.4%) of participants.

It was also found that the knowledge about dealing with shock (P<.007), burns (p<.002), epistaxis (<.001), CPR (p<.01) and asthma (p<.009) was significantly better among female participants as compared to their counterparts.

When the participants had been asked about their experience of dealing with cases and injuries among students in the school, their responses were as following: overall, (30.18%) had encountered with an emergency conditions, (29%) of them applied the first aid, (57.4%) asked for help and the rest did nothing. Among those who asked for help (32.36%) of them called the ambulance or informed the school nurse in contrast the others had informed the school administrator.

Regarding experience of dealing with emergencies in school, most of them (42.1%) had managed headaches, followed by (41.3%) for epistaxis and (38.4%) for burns. On comparing practices of first aid, it was found that there is no significant difference except only for managing fractures where male practices proved out to be better than those of females (p<.008) [see table 2].

Regarding attitude of participants, a vast majority (92%) identified the need of a proper first aid training program in schools. There was no significant difference among males and females participants towards inclination for future training or their past training [see table 2].

Discussion:-

Our study results showed that over all knowledge of schoolteachers and staff was significantly deficient (93%) for doing CPR, a lifesaving skill; despite of that 25.3% of them had received first aid training in the past. This finding necessitates a need of proper first aid training program for our teachers and students. In a study at Nepal a first aid training program for school teachers was evaluated, where they found that the first aid knowledge and skills of school teachers and school management committee members were increased in post-test from 13.9% to 70.3%, and the gain is 56.4%. The maximum increase in the management of epistaxis is 84.4% and minimal for managing shock in 55.2%.

Our study showed that 29% of participants applied the first aid, 57.4% asked for help and the rest did nothing. This high percentage of non-practicing may be due to lack of first aid knowledge or required skills. In our sample, 92% identified a need of proper first aid training program in schools that indicates there is increase awareness about the importance of first aid among schoolteachers. Regarding the experience of dealing with emergencies in school, 38% of them had managed burns as there is risk of burns 'cases in school due to some chemical substances in the laboratory or spilling of hot water on the skin or may be by smoking. Regarding knowledge of our participants, the minimal knowledge was reportedabout CPR only by 7% of participants. This finding maybe because of lack of health education or emergency preparedness efforts through training programs.

The above findings are in agreement to other studies in the Kingdom. According to a study about the importance of practical first aid training in Saudi Arabia 2012, less than 30% of people found to act immediately in case ofemergency and above 19% of people did not know basic first aid skills. Above 59% of people agreed that First Aid knowledge is not enough and practical training is required. About 32% of people do not know what should be done in case of burn.Above 34% of people do not know what CPR is [10].

Our study found that the knowledge and practice of first aid was significantly high among female participants as compared to male but as such not effected by marital status or educational level. Whereas the attitude for having first aid training program was equally high among both genders. This is partially confirmed by a study done in Assiut city,

Egypt 2010 among secondary school teachers. They reported that all teachers had heard about epilepsy, about one quarter (23.8%) of teachers accepted to give and 12.7% accepted to give first aid in the class. They reported that positive attitudes were common among females and single teachers. The study emphasized further that teachers need to be educated more about epilepsy and suggests that, a well-directed health educational program about causes and management of epileptic seizures may improve the perception of epilepsy by teachers in Egypt [15].

The practice of our schoolteachers and staff towards first aid management was reflected out as 30% had a chance to respond to emergency case but out of these only 29% confident in managing the situation while the rest called ambulance or others. This means that our teachers were motivated enough to help students in emergency but need to be provided with the required skills. Our findings were in agreement with a study in Yeditepe University, where in the event of an anaphylactic reaction 39.7% notify the school nurse and 19.8% call the emergency services.

Our study results shows that 44% of participants encountered with a case of asthma and 17.6% with that of fracture. While a study done in Jeddah city, Saudi Arabia 2014 to evaluate the preparedness of primary school staff for health related emergency reported practices as 73.7% and 46.6% for initial management of asthma attack and musculoskeletal injury respectively. This discrepancy of management of children with asthma or musculoskeletal injury reflects that teachers in Jeddah have more practice. Never the less the prevalence of Saudi asthmatic children has been reported range from 8% to 25% based on studies over the past three decades, so they need more attention and a good initial management [11].

Also in a study , they found that those aged 19 years and under had lower levels of willingness and condense than people in older age groups that match our sample which was comprised of 67 % less than 40 , 30 % were willing to help in emergency situation and only 29% confident in managing the situation. But in the study of the British Red Cross, the samples were between 20 – 39 years old, 93 % of them were willing to help in emergency situations and 78% of them were confident in managing the situations. The difference in the results is due to the united kingdom consider as developed country with highly educated community and advanced health services[16].

The above finding also confirmed by a study in Turkey that only 29% of teachers were confident which considered low regarding the importance of their job to deal with the emergencies in the school.

In that study, in general majority of the teachers reported that they should be given training on the subject, and there should be a re-evaluation of school and health policies with a wider global perspective. There is an urgent need to inquire into the allergy management plans and policies in schools and to develop teacher education organizations on the subject [17].

Appendices:-

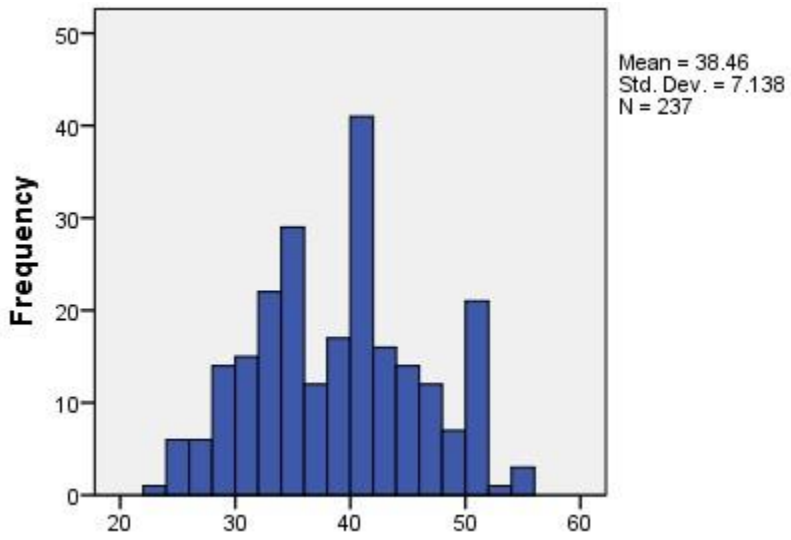

Figure 1: Age distribution of the respondents

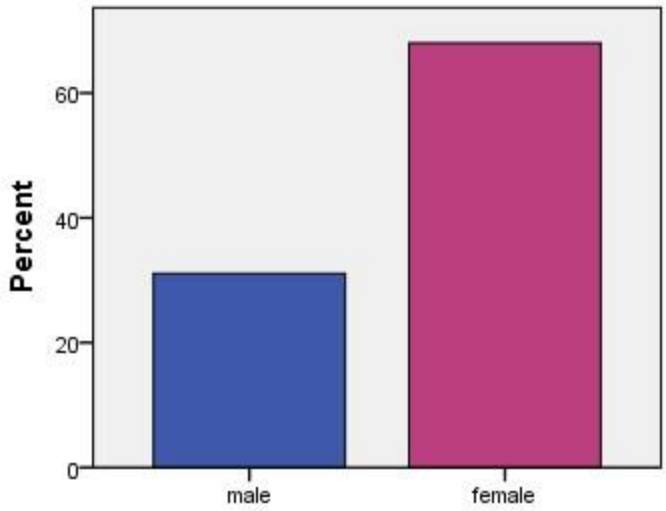

Figure 2: Gender distributionof respondents

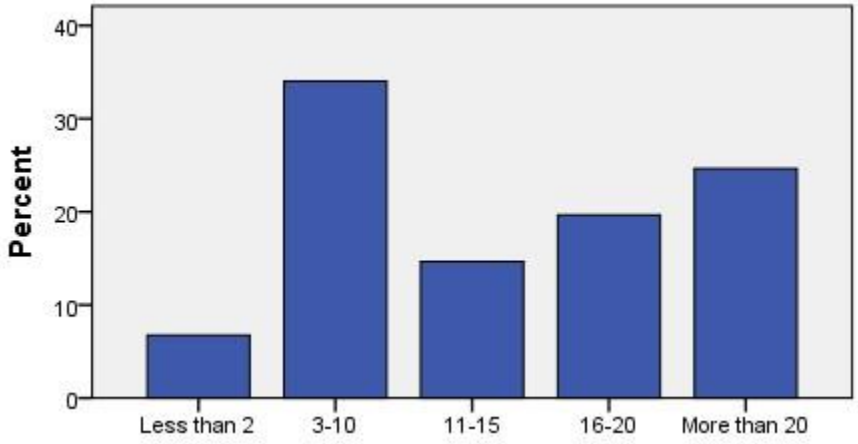

Figure 3: Yearsof service

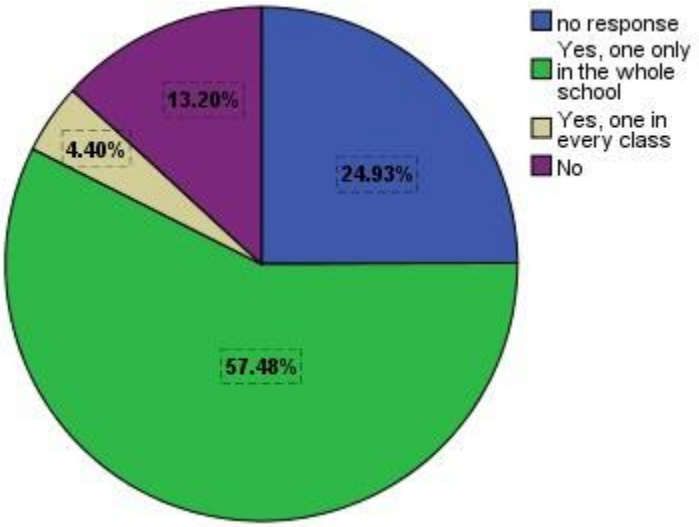

Figure 4: First aidkit availability

Table 1: Frequencyof emergencyconditionsencounteredin schools:

Emergency conditions	Frequency of participant encountered with this case	%
Asthma (n=241)	106	31.1%
Abdominalpain(n=247)	174	51.0%
Epilepsy(n=226)	59	17.3%
Fainting(n=226)	91	26.7%
Epistaxis(n=234)	114	33.4%
Fractures(n=216)	38	11.1%
Stabbing(n=208)	10	2.9%
Burns(n=211)	22	6.5%
Tongue Swallowing(n=207)	10	2.9%
Foodpoisoning (n=207)	29	8.5%
Bloodpressure disorders(n=208)	26	7.6%
Hypoorhyperglycemic shock(n=215)	69	20.2%
Headache (n=231)	154	45.2%

Table 2: Associationof genderwith knowledge,attitudeandpractice:

Variables	Male	Female	%	X2 (df=3)	P.Value
Knowledge					
Dealingwith unconscious student (n=237)	16	54	29.54	14.1	0.007*
Dealingwith choked student (n=241)	46	120	68.88	4.04	NS
Recognizinghyperglycemia symptoms (n=241)	37	96	55.19	4.7	NS
Dealingwith seizingstudent (n=241)	25	74	41.18	7.6	NS
Aidingstudents with bleeding wounds (n=241)	51	133	76.35	7.1	NS
Aidingstudent injured with sharp tool (n=241)	44	114	65.56	5.4	NS
Aidingbleedingstudentdueto amputated finger(n=241)	36	100	56.43	4.6	0.506
Aidingstudent havingasthmatic attack (n=241)	48	98	60.58	15.3	0.009*
Dealingwith unrecognizable diabetic attack (n=241)	13	25	16.67	20.2	0.000*
Aidingstudent with broken limb (n=241)	39	78	48.55	19.3	0.001*
Managingepistaxis (n=241)	17	69	35.68	29.658	0.001*
Knowledgeof how CPR is done (n=241)	7	11	7.47	21.608	0.017*
Aidingstudent with burns (n=241)	15	33	19.92	24.680	0.002*
Practice					
Asthma (n=110)	13	19	29.1	2.614	NS
Abdominal pain (n=176)	14	35	27.84	1.379	
Epilepsy(n=68)	3	9	17.65	3.220	
Fainting (n=94)	5	13	19.15	3.725	
Epistaxis (n=116)	17	31	41.38	6.532	
Fractures (n=46)	5	6	23.9	17.535	0.008*
Stabbing(n=23)	2	5	30.43	3.805	NS
Burns (n=26)	3	7	38.46	0.894	
Tongue Swallowing (n=20)	0	2	10	1.737	
Food poisoning(n=33)	1	9	30.3	6.015	
blood pressure disorders(n=33)	2	7	27.27	3.784	
hypo or hyperglycemic attack (n=74)	7	13	27.03	3.387	
Headache(n=152)	18	46	42.11	6.261	
Attitude					
Previously trained (n=240)	17	45	25.83	4.385	NS
Needs training (n=240)	65	158	92.92	4.549	
Nurse demand (n=240)	65	153	10.83	5.900	
Staff training obviate nurse demand (n=240)	21	49	29.27	4.020	

*= significantPvalue

Conclusion:

The study showed that our schoolteachers had low level of knowledge about using first aidfor the emergencies occurring in school. Most of them preferred to call others for help.

Recommendations:

1- The Ministry of Education should establish students' protection program by giving workshops and first aid programs to school staff.
2- Every school should have a certified nurse to provide a primary care in addition to an equipped room to be used for applying first aid (e.g. IV fluid, insulin injection etc.).
3- Each class should have complete, renewing and accessible first aid kit.
4- The Ministry of Education should employ a health care inspector to do periodic rotation to ensure compliance.

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