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# First aid knowledge among high school students and teachers in Baghdad

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**Abstract**
**Background:** First aid knowledge is crucial to saving lives, students are vulnerable to emergencies and accidents thus it is mandatory for teachers to be aware of how to deal with such events, knowledge of students of First aid may have a role in minimizing poor outcomes.
**Aims of study:** To assess first aid knowledge among secondary school students and their teachers.
**Methods:** A cross-sectional study was carried out among 15 secondary schools selected randomly from Baghdad, participating students and teachers were directly interviewed using a structured questionnaire composed of questions regarding emergency conditions and their management, to assess the level of knowledge and then accordingly were classified into good, fair and poor knowledge, and then the association with teachers' age was also assessed.
**Results:** The study involved 623 students mean age of 17±3, (324, 52%) were females and (436, 70%) of them had poor knowledge while 119 teachers with a mean age was 40±15 years 74,62% were females, (107,90%) had poor knowledge and was not significantly associated with age.
**Conclusion:** Most teachers had poor First aid knowledge, and students' knowledge was relatively better though two-thirds had poor knowledge.

**Keywords:** First aid, knowledge, secondary schools, students, teachers

## Introduction

Adolescence involves complex psychological, cognitive, and physical interactions that may infer a risky behavior in such an era that may increase injury incidence [1].
Thus, minimizing the sequelae of such accidents is crucial, this raises the importance of First aid to save lives and minimize morbidity.
According to the American Heart Association, first aid is defined as the assessment and intervention that can be performed by a bystander or by a victim with minimal or no medical equipment [2].
Since students are prone to injuries, as adolescents, thus First aid is crucial, students are teachers are in the vicinity so their knowledge must be ascertained so that performance is effective [3].
Wide-range emergencies demand First aid, such as fractures, asphyxia, cardiac arrest, foreign body choking, etc. so early simple and even more complicated actions like bandaging wounds, cardiopulmonary resuscitation, and stabilizing fractures can minimize or even prevent damage or mortality [4, 5].
Schools play a crucial role in the health promotion of students and accident prevention and 1st management [6].
Knowledge and practice of First aid is of importance not only for schoolteachers but even for secondary school students, so empowering them with efficient knowledge and appropriate practice can lessen poor emergency outcomes [7].
Previous extensive studies had thoroughly investigated First aid knowledge and practice, but mainly among schoolteachers, not students, [8-10].
School students spend at least one-third of their time in schools, so they may face numerous kinds of injuries in the school which impact their current and upcoming condition of health. Generally, nurses and physicians are not typically part of the regular school staff in Iraq. Awareness and knowledge regarding first aid play a critical role for both students &

teachers, so each of them can be a lifesaver inside & outside the school. Rapid administration of first aid may reduce morbidity and mortality from injuries; therefore, it is important for teachers & students to be trained in first aid procedures and to be updated in their knowledge and skills regarding first aid guidelines [11].
So, we aimed to assess the First aid knowledge among both teachers and students of secondary schools and to assess their association with students' and teacher's ages.

**Subjects and Methods**
A cross-section study was conducted among secondary school students and their teachers, Using a random sampling technique from a list of (15) secondary schools in Baghdad.
Data collection started from the 3rd of November 2022 till the 3rd of January 2023
Students were selected from each school by stratified sampling technique, while teachers included all who were willing to participate.
The tool of data collection was a self-administered questionnaire composed of three domains: demographic data, First aid knowledge assessment questions in in management of emergency situations: wounds, bleeding, fractures, epistaxis, fits, asthmatic attacks, loss of consciousness, burn and choking and the 3rd domain included questions regarding previous training and the importance of First aid training.
After obtaining consent from the school director and participants, the research team distributed the questionnaire in classrooms. The procedure for completing the questionnaire was explained to students before they began. Participants were allotted sufficient time to complete the questionnaire, with the research team available to address any questions or concerns. On average, it took participants approximately 10-12 minutes from beginning to end to complete the questionnaire.
The questionnaire was piloted with a small sample of teachers (n=10) to assess its clarity and relevance, which were not included in the study.

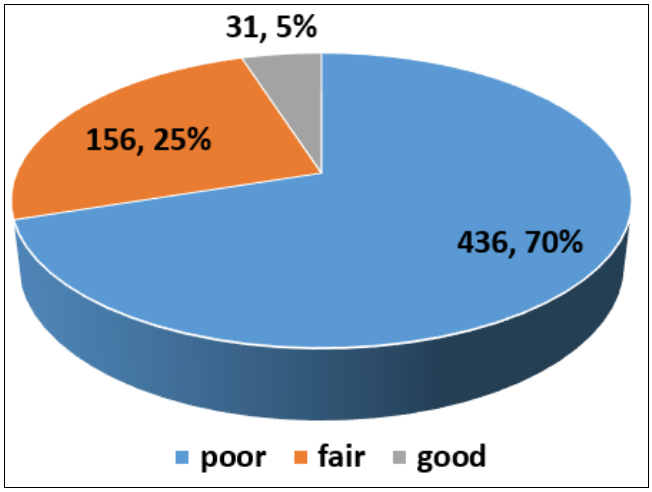
**Ethics considerations:**
Approval of the Ministry of Education to carry out the study was obtained, then approval of the principal of included schools was obtained then verbal consent of both teachers and students was obtained before data collection.

**Data Analysis**
Data entered into Excel sheets. Frequencies of each correct and incorrect answer were calculated for every question in the questionnaire to analyze the distribution of responses among participants. The respondents were classified into three categories of knowledge level, based on scores:

- **Good knowledge:** Participants scoring 70% or higher.
- **Fair knowledge:** Participants scored between 50% and 69%.
- **Poor knowledge:** Participants scoring less than 50%.

This classification method was utilized to assess participants' knowledge levels regarding first aid practices. Subsequently, appropriate statistical tests including chi-square were conducted to identify associations between knowledge scores and teachers' age.
Limitations: The study had several limitations, including the potential for selection bias due to the absenteeism of some of the teachers from Baghdad at the time of the study. Additionally, the study relied on self-reported data, which may have been subject to social desirability bias.

**Results**



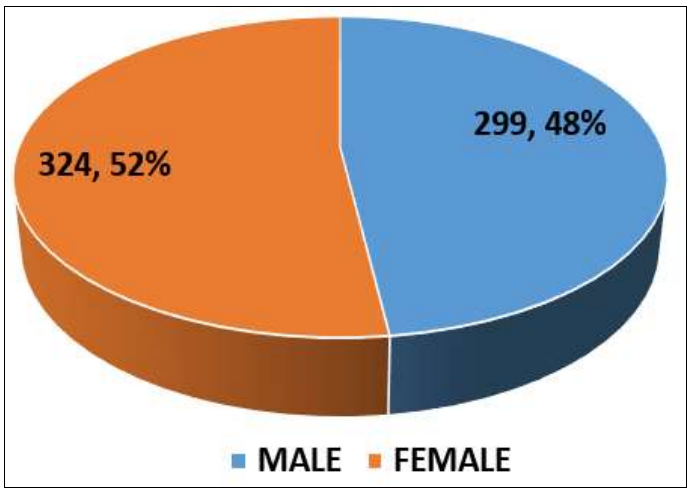




**Fig 1:** First aid knowledge level of students **Fig 2:** Gender of students

**Table 1:** The association between students knowledgde about first aid and other factor, n=623

| Variable | | | | | P-value | Total out of 623 |
|---|---|---|---|---|---|---|
| Gender | Male | | Female | | 0.0982 | 621 |
| | 296 (48%) | | 325 (52%) | | | |
| Father's education | primary | secondary | Undergraduate | Postgraduate | 0.00482 | 600 |
| | 76 (12.7%) | 180 (30%) | 244 (40.7%) | 100 (16.7%) | | |
| Mother's education | primary | secondary | Undergraduate | Postgraduate | 0.0543 | 596 |
| | 90 (15.1%) | 165 (27.7%) | 264 (44.2%) | 77 (12.9%) | | |

**Table 2:** First aid survey results: Students perspectives and experiences, n=623

| | Yes | No | Total out of 623 |
|---|---|---|---|
| Is it important to learn ? | 572 (94%) | 38 (6%) | 610 |
| Past First aid training | 91 (15%) | 527 (85%) | 618 |
| Previous experience giving F.A | 177 (29%) | 440 (71%) | 617 |

**Table 3:** First aid survey results: students reactions to common unjuries/ incidents, n=623

| N. | Accidents | True % | True answer | False % | Common misconception | Total out of 623 |
|---|---|---|---|---|---|---|
| 1 | Bruises | 414 (69.1%) | Apply ice to injury area | 185 (30.9%) | Massage the bruised leg to improve circulation. | 599 |
| 2 | Cut & bleeding | 266 (42.8%) | Apply pressure to the wound to stop bleeding | 355 (57.2%) | Wash the cut with warm water | 621 |
| 3 | Leg fracture | 291 (46.9%) | Immobilize the leg by splinting it in the position you found | 329 (53.1%) | Encourage the person to walk to test the extent of the injury | 620 |
| 4 | Epistaxis | 224 (36.1%) | Pinch the soft part of the nose and ask the student to lean forward | 396 (63.9%) | Tilt the student's head back to stop the bleeding | 620 |
| 5 | Loss of consciousness | 342 (55.2%) | Lay the student on their back and elevate their legs | 277 (44.8%) | Perform chest compressions immediately | 619 |
| 6 | Epileptic attack | 105 (17%) | Clear away any potentially dangerous objects and put him to one side | 512 (83%) | Place an object in the student's mouth to prevent biting of the tongue | 617 |
| 7 | Burn | 312 (50.4%) | Rinse the burned hand with cold water for at least 10 minutes | 306 (49.6%) | Wrap the burned hand tightly with a bandage | 618 |
| 8 | Asthmatic attack | 471 (76.5%) | Administer the child's prescribed inhaler | 144 (23.5%) | Open window for fresh air | 615 |
| 9 | Chocking | 199 | Perform abdominal thrusts | 418 | Encourage the child to | 617 |

**Table 4:** First aid survey: students knowledge regarding cardiopulomary resuscitation, n=623

| N. | CPR Qs | True % | True answer | False % | Most false | Total out of 623 |
|---|---|---|---|---|---|---|
| 1 | check responsiveness | 94 (15.4%) | Patting the shoulder and shouting | 515 (84.6%) | I don't know | 599 |
| 2 | Check breathing | 449 (71.8%) | -Look for his chest to rise and fall.<br>-Listen for exhaled air.<br>-Feel for exhaled air. | 176 (28.2%) | Feel for exhaled air | 621 |
| 3 | Check circulation | 285 (46.6%) | Feel carotid pulse | 327 (53.4%) | Feel pulse in arms | 620 |
| 4 | compressions / ventilations ratio | 66 (10.6%) | 30 to 2 | 557 (89.4%) | I don't know | 620 |
| 5 | Chest compression site | 100 (16.3%) | Lower half of the sternum | 518 (83.8%) | I don't know | 619 |

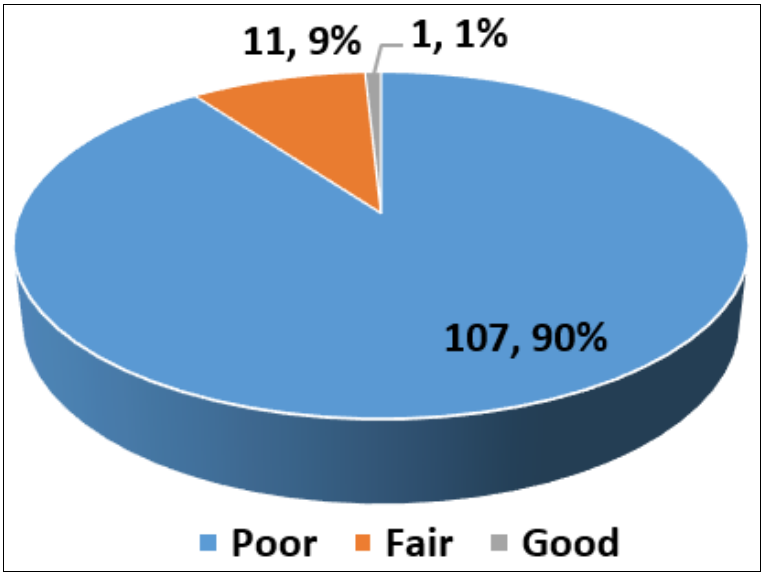
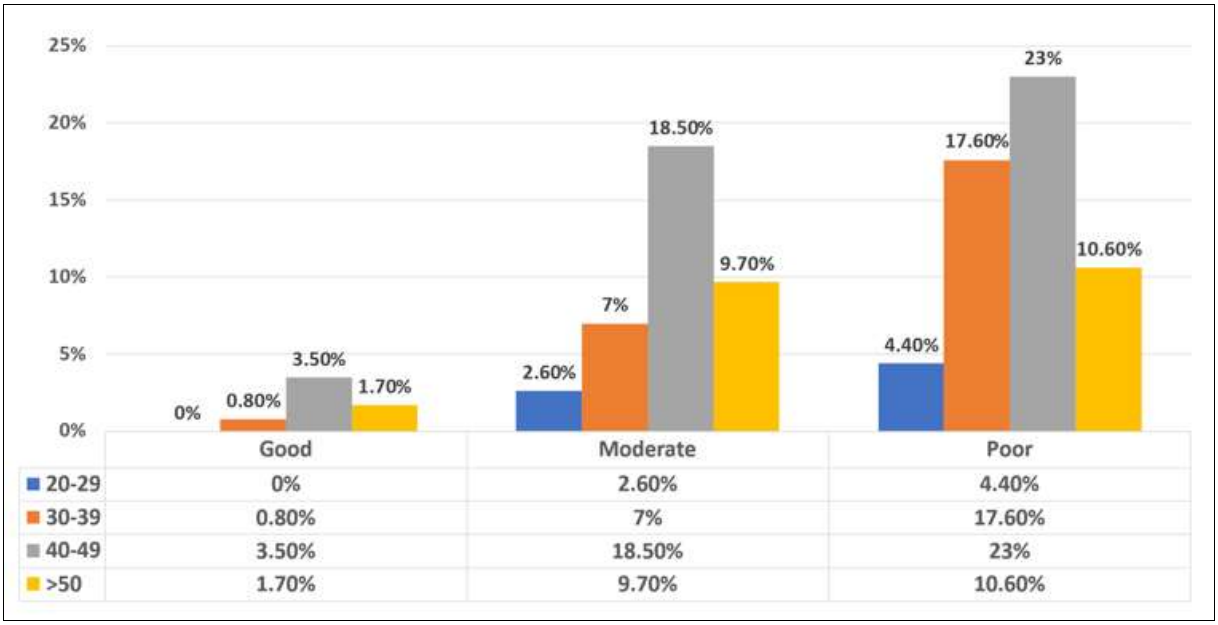



**Fig 3:** Teachers level of knowldge




Chi sqaure test is not significant

**Table 6:** First aid survey results: teachers perspectives and experiences n=119

| | Yes | No |
|---|---|---|
| Is it important to learn ? | 119 (100%) | 0 (0%) |
| Past First aid training | 34 (28.6%) | 85 (71.4%) |
| Previous experience giving F.A | 52 (43.7%) | 67 (56.3%) |

**Table 7:** First aid survey results: teachers reaction to common injuries/incidents n=119

| N. | Accidents | True % | True answer | False % | Common misconception |
|---|---|---|---|---|---|
| 1 | Bruises | 95 (79.8%) | Apply ice to injury area | 24 (20.2%) | Wrap the leg tightly with a bandage |
| 2 | Cut & bleeding | 73 (61.3%) | Apply pressure to the wound to stop bleeding | 46 (38.7%) | Wash the cut with warm water |
| 3 | Leg fracture | 78 (65.5%) | Immobilize the leg by splinting it in the position you found. | 41 (34.5%) | I don't know |
| 4 | Epistaxis | 51 (42.9%) | Pinch the soft part of the nose and ask the student to lean forward | 68 (57.1%) | Tilt the student's head back to stop the bleeding |
| 5 | Loss of consciousness | 94 (79%) | Lay the student on their back and elevate their legs | 25 (21%) | Shake the student vigorously to wake them up |
| 6 | Epileptic attack | 13 (10.9%) | Clear away any potentially dangerous objects and put him to one side | 106 (89.1%) | Place an object in the student's mouth to prevent biting of the tongue |
| 7 | Burn | 59 (49.6%) | Rinse the burned hand with cold water for at least 10 minutes | 60 (50.4%) | Wrap the burned hand tightly with a bandage |
| 8 | Asthmatic attack | 76 (63.9%) | Administer the child's prescribed inhaler | 43 (36.1%) | Open window for fresh air |
| 9 | Chocking | 34 (28.6%) | Perform abdominal thrusts | 85 (71.4%) | Give the child a glass of water to drink quickly |

**Table 8:** First aid survey results: Teachers knowledge regarding cardiopulmonary resuscitation n=119

| N. | CPR Qs | True % | True answer | False % | Most false |
|---|---|---|---|---|---|
| 1 | check responsiveness | 4 ( 3.7%) | Patting the shoulder and shouting | 115 (96.6%) | Patting the feet and chest |
| 2 | Check breathing | 56 (47.1%) | -Look for his chest to rise and fall.<br>-Listen for exhaled air.<br>-Feel for exhaled air. | 63 (52.9%) | Look for his chest to rise and fall |
| 3 | Check circulation | 35 (29.4%) | Feel carotid pulse | 84 (70.6%) | Feel pulse in arms |
| 4 | compressions / ventilations ratio | 12 (10.1%) | 30 to 2 | 107 (89.9%) | I don't know |
| 5 | Chest compression site | 15 (12.6%) | Lower half of the sternum | 104 (78.4%) | Middle of the sternum |

## Discussion

First aid knowledge is crucial for emergency management and can save individual lives or minimize morbidity, it is not exclusive for adults to perform but even teenagers can help, among the 623 with mean age 17±2 years students who were of comparative gender ratios, almost all believed that First aid is important to learn (94%) still three-quarters had poor level of knowledge.

Good knowledge was noted among 5% of the students, although triple that percentage (15%) had past training in First aid and six times that number (29%) had given First aid to victims [12].

in India, first aid is a subject that is covered in their curriculum, so upon researching this fact, good knowledge was registered among nearly 17% of their students, a number that is much higher than our students of which such subject is not included in their curriculum [13].

Most of the students were not merely lacking correct knowledge, but they were having misconceptions that may worsen the situation, among those more than one-third of the students would massage a bruise because they believed that they were actually improving the blood circulation so that the bruise would disappear faster, and more than half of them would wash a cut with warm water to disinfect and an approximate number would force a victim with a fracture to walk so that they can test the extent of injury and also would wrap a burn two thirds of them would tilt the head of victim with epistaxis back word to stop bleeding, nearly two thirds of them would thrust something in the victim's mouth during fit to protect a tongue from biting. Some of the misconceptions would even actually jeopardize the victim's life as nearly half of the students will not raise the legs of the fainting patient but would do a chest compression and two-thirds will try to make a choking child vomit a foreign body, a comparative results have been shown in studies done in Syria and Saudia Arabia in which misconception of First aid prevalence was also of high percentages (60 and 70% respectively) [14, 15].

The asthmatic was sparingly managed well among nearly three-quarters of the students, this could be explained by the familiarity of Iraqi people with asthma and thus its management [16].

Cardiovascular mortality is still increasing worldwide in nearly 32% of the population according to the WHO, thus public training in CPR performance can reduce the mortality of cardiac arrest, this fact has been highlighted in the Middle

East population mandating the health authorities to carry out such training courses, this is strengthened by the fact that knowledge also was lacking even among medical students, exhibiting only a limited knowledge according to the Syrian study [17-19]. This agreed with the student's knowledge regarding CPR performance which was lacking in almost all of them apart from breathing checking which was well-known among nearly three-quarters of them.

Educating teachers in first aid increases the safety of every student they encounter, as the school environment presents potential injury risks, providing teachers with a significant opportunity to act. Additionally, a teacher trained in first aid is more motivated to avoid personal injury due to their enhanced appreciation of the potentially serious consequences [10].

Students were more knowledgeable in comparison to their teachers, the majority of them(90%) registered poor knowledge, only 1% have good knowledge, and still all of them believe that it is important to learn how to perform First aid. despite that nearly one-third of them had First aid training.

This contrasts with the findings for teachers who had received previous training improved the achievement scores of the trained teachers, reflecting the importance of providing first aid education for teachers this can be explained by the reassessment of knowledge post-training which was prompt unlike the present study, in which the teachers had past training with time gap [20, 21].

and nearly half of them had previous experience, This also highlights the fact that being involved in a first aid case does not necessarily fill the gap of information, nor does it necessarily clear any misconceptions that may be present, although a significant association of the mother's First aid knowledge and being involved with the previous need of First aid call for their child was registered in the previous study [15].

The main defect in teachers' knowledge was managing emergencies as epileptic attacks and a chocking person, while the performance of CPR was defective, this can be justified that the information collected regarding CPR performance was sophisticated and definitely requires prior training to be performed effectively, thus saving lives, still, there is a necessity to be learned especially by teachers who will themselves educate their students to further escalate CPR givers number [22].

the age of teachers was 20- >50 years with a mean age was 40±15 years, since age is the most important epidemiological factor and has been frequently associated with many conditions, so was assessed on in our study, despite this fact it was found to be not significantly associated with their level of knowledge, this agrees with the study done in KSA [23].

The previous Iraqi study in 2010-2011, registered no significant association between knowledge level and years of teaching which reflects also the age of teachers, since in governmental schools, the teachers have been hired starting from age 20 and above, in contrast to the recent study in Ethiopia among secondary school teachers which showed both good knowledge and positive attitude towards First aid performance with age and years of service [8, 24].

## Conclusion

The study revealed that the majority of teachers and students had poor knowledge of first aid. Students' knowledge was found to be relatively better than their teachers'. The main defect was in managing epilepsy and coking, mainly due to popular misconception, and also in CPR performance, which must be precise to be effective.

Both previous training and emergency exposure did not increase the percentage of knowledge level.Despite the importance of the age of teachers to elevate the level of knowledge, It could not be proven significant.

## References


1. Johnson SB, Jones VC. Adolescent development and risk of injury: using developmental science to improve interventions. Injury Prevention. 2011 Feb;17(1):50-54. DOI: 10.1136/ip.2010.028126. Epub 2010 Sep 28. PMID: 20876765; PMCID: PMC4405033.
2. Nur Amirah Mohd Sharif, Muhammad Kamil Che Hasan, Farrah Ilyani Che Jamaludin, Mohd Khairul Zul Hasymi Firdaus. The need for first aid education for adolescents. Enfermería Clínica. 2018;28(Suppl 1):13-8. DOI: 10.1016/S1130-8621(18)30028-7.
3. Abu Ali I, Kadamani I. Effects of integrating first aid into health education program on students-teachers' knowledge and attitudes at the Lebanese University Faculty of Education. Al Jinan. 2019;11:Article 22. Available from: https://digitalcommons.aaru.edu.jo/aljinan/vol11/iss1/22
4. Altamimi A. Knowledge and practices of primary school teachers about first aid management of minor injuries among children in the Qassim region, Saudi Arabia. International Journal of Medicine in Developing Countries. 2019, 1. DOI: 10.24911/IJMDC.51-1567545145.
5. Jing L, Kaiqiao Z, Wudi H. Public first aid education model design study based on user experience. Frontiers in Public Health. 2023, 11. DOI: 10.3389/fpubh.2023.1286250.
6. Abo Elsoud MS, Ahmed HA, Abdel-Wahab AM, Farg HK. Training on first aid for teachers of primary schools at Ismailia City. IOSR Journal of Nursing and Health Science. 2018;7(5):28-38. DOI: 10.9790/1959-0705012838.
7. Mobarak A, Afifi R, Qulali A. First aid knowledge and attitude of secondary school students in Saudi Arabia. Health. 2015;7:1366-1378. DOI: 10.4236/health.2015.710151.
8. Al-Robaiaay YKH. Knowledge of primary school teachers regarding first aid in Baghdad Al-Rusafa. Al Kindy College Medical Journal. 2013;9(1):56.
9. Al-Shatari SAE, Sebri M, Sadiq MQ. First aid knowledge and practice: sample from primary school teachers in Baghdad. Iraqi Journal of Community Medicine. 2021;34(1):11-17. DOI: 10.4103/IRJCM.IRJCM_3_23.
10. Alsaedi MM, Jawad AK, Khaleefah JA. Empowering teachers as first responders: a survey of first aid knowledge and practice in secondary schools. Al-Nisour Journal of Medical Sciences. 2024;6(1):37-50.
11. Al Gharsan M, Alarfaj I. Knowledge and practice of secondary school teachers about first aid. Journal of Family Medicine and Primary Care. 2019;8:1587-1593.
12. Huy LD, Tung PT, Nhu LNQ, Linh NT, Tra DT, Thao NVP, *et al*. The willingness to perform first aid among high school students and associated factors in Hue, Vietnam. PLoS One. 2022 Jul 27;17(7):e0271567. DOI:

10.1371/journal.pone.0271567. PMID: 35895665; PMCID: PMC9328566.
13. Semwal J, Bakshi RK, Juyal R, Deepshikha, Vyas S, Kandpal SD. Study of knowledge and attitudes to first aid among school children of DOIwala block, Dehradun. International Journal of Community Medicine and Public Health. 2017;4:2934-2938. DOI: 10.18203/2394-6040.ijcmph20173348.
14. Ranjous Y, Al Balkhi A, Alnader I, Rkab M, Ataya J, Abouharb R. Knowledge and misconceptions of choking and first-aid procedures among Syrian adults: A cross-sectional study. SAGE Open Medicine. 2024 May 8;12:20503121241249399. DOI: 10.1177/20503121241249399. PMID: 38725922; PMCID: PMC11080803.
15. Alhajjaj F, *et al*. Knowledge, misconceptions, and practice about first aid measures among mothers in Al Qassim. International Journal of Medicine in Developing Countries. 2021;5(1):309-317. DOI: 10.24911/IJMDC.51-1607865492.
16. Salih MR, Abd YA, Fawzi HA. Awareness of asthma and its management in primary school teachers in Baghdad, Iraq. F1000Research. 2022 Mar 30;11:367. DOI: 10.12688/f1000research.73495.2. PMID: 35811798; PMCID: PMC9218586.
17. World Health Organization. Cardiovascular disease [Internet]. Available from: https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds). Accessed 2024 Dec 4.
18. Alsabri MAH, Alqeeq BF, Elshanbary AA, *et al*. Knowledge and skill level among non-healthcare providers regarding cardiopulmonary resuscitation (CPR) training in the Middle East (Arab countries): a systematic review and meta-analysis. BMC Public Health. 2024;24:2081. DOI: 10.1186/s12889-024-19575-7.
19. Aljarad Z, Ataya J. Assessment of first-aid knowledge among medical students in Syria: a cross-sectional study. Research Square. DOI: 10.21203/rs.3.rs-144145/v1.
20. Calandrim L, Santos A, Oliveira L, Massaro L, Vedovato C, Boaventura A. First aid at school: teacher and staff training. Revista Rede de Enfermagem do Nordeste. 2017;18:292-299. DOI: 10.15253/2175-6783.2017000300002.
21. Fan M, Leung LP, Leung R, Hon S, Fan K. Readiness of Hong Kong secondary school teachers for teaching cardiopulmonary resuscitation in schools: a questionnaire survey. Hong Kong Journal of Emergency Medicine. 2018;26:102490791879753. DOI: 10.1177/1024907918797532.
22. Alanazy S, Alqunibut I, Albahli R, Adawi L, Aldehami M, Alharbi G, *et al*. The level of school teachers' knowledge about first-aid management and control of epistaxis in Qassim region, Saudi Arabia. Cureus. 2023 Jan 15;15(1):e33784. DOI: 10.7759/cureus.33784. PMID: 36798625; PMCID: PMC9926137.
23. Fenta W, Fentahun M, Ayichew A. Knowledge, attitudes, and associated factors towards first aid among secondary school teachers working in governmental schools of Harari regional state, Eastern Ethiopia. Medtigo Journal. 2024, 2(4). DOI: 10.5281/zenodo.13943398.

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