

Empowering Teachers as First Responders: A Survey of First Aid Knowledge and Practice in Secondary Schools

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Abstract

Schools are one of the most common settings for children and adolescents to experience injuries, and teachers are often the first responders in such situations. Therefore, it is crucial for teachers to possess adequate knowledge and skills in first aid to provide prompt and effective care to the injured students. This study aims to evaluate the first aid knowledge and practice of secondary school teachers in Baghdad, as well as identify awareness of teachers to perform the correct application with the situations that need first aid. A simple random sampling of **270** teachers from a list of **(15)** secondary schools in Baghdad. Questionnaire conducted through direct interview which is started from the 3rd of November 2022 till the 3rd of January 2023. Descriptive statistics and Inferential statistics were used to analyze the data. The study found that most participants (aged 26-45) had some form of first aid training, with formal training being more effective in improving knowledge and skills. Confidence levels varied, with 35% very confident, 50% somewhat confident, and 15% not confident. 30% recommended more first aid training for school staff. The association between training and confidence was highly significant ($p < 0.001$). The study found gaps in first aid knowledge and practice among teachers in Iraq. Formal training was more effective in improving knowledge and skills. Proper training and education on first aid are needed to improve knowledge and skills among teachers, and administrative support and resources are needed to improve first aid practices in schools.

Keywords: *Baghdad, First Aid, Teachers.*

تمكين المعلمين كمستجيبين أوليين: دراسة حول المعرفة والممارسة في مجال الإسعافات الأولية في المدارس
الثانوية

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الخلاصة

تعد المدارس أحد الأماكن الأكثر شيوعاً التي يتعرض فيها الأطفال والمراهقين للإصابات، وغالباً ما يكون المعلمون أول المستجيبين في مثل هذه المواقف. ولذلك، فمن الأهمية بمكان أن يمتلك المعلمون المعرفة والمهارات الكافية في مجال الإسعافات الأولية لتوفير

رعاية سريعة وفعالة للطلاب المصابين. تهدف هذه الدراسة إلى تقييم معرفة وممارسات الإسعافات الأولية لدى معلمي المدارس الثانوية في بغداد، وكذلك التعرف على وعي المعلمين للقيام بالتطبيق الصحيح مع الحالات التي تحتاج إلى الإسعافات الأولية. تم أخذ عينة عشوائية بسيطة مكونة من 270 معلماً ومعلمة من قائمة مكونة من (15) مدرسة ثانوية في بغداد. تم إجراء الاستبيان من خلال المقابلة المباشرة التي بدأت من 3 نوفمبر 2022 حتى 3 يناير 2023. وتم استخدام الإحصاء الوصفي والإحصاء الاستدلالي لتحليل البيانات. وجدت الدراسة أن معظم المشاركين (الذين تتراوح أعمارهم بين 26 و 45 عامًا) تلقوا شكلاً من أشكال التدريب على الإسعافات الأولية، وكان التدريب الرسمي أكثر فعالية في تحسين المعرفة والمهارات. وتباينت مستويات الثقة، إذ كان 35% واثقين جداً، و50% واثقين إلى حد ما، و15% غير واثقين. وأوصى 30% بالمزيد من التدريب على الإسعافات الأولية لموظفي المدرسة. وكانت العلاقة بين التدريب والثقة ذات دلالة إحصائية عالية ($P < 0.001$). وجدت الدراسة وجود فجوات في معرفة وممارسات الإسعافات الأولية بين المعلمين في العراق. وكان التدريب الرسمي أكثر فعالية في تحسين المعرفة والمهارات. هناك حاجة إلى التدريب والتعليم المناسبين على الإسعافات الأولية لتحسين المعرفة والمهارات بين المعلمين، كما أن الدعم الإداري والموارد مطلوبة لتحسين ممارسات الإسعافات الأولية في المدارس.

الكلمات المفتاحية: بغداد ، الإسعافات الأولية ، المعلمين .

Introduction

According to the United Nations International Children's Emergency Fund (UNICEF) [1], injuries are a leading cause of death among children and adolescents globally, with an estimated 600,000 deaths occurring annually [2]. Schools are one of the most common settings for children and adolescents to experience injuries, and teachers are often the first responders in such situations. Therefore, it is crucial for teachers to possess adequate knowledge and skills in first aid to provide prompt and effective care to the injured students.

Teachers play a crucial role in ensuring the safety and well-being of students in schools. In the event of an emergency, teachers are often the first responders and need to have adequate first aid knowledge and skills to respond appropriately. However, studies have shown that teachers may lack the necessary knowledge and skills to provide adequate first aid in the school setting [3].

A recent survey conducted in Baghdad aimed to assess the knowledge and practice of primary school teachers regarding first aid [4]. The study found that the majority of teachers had not received first aid training, many were not confident in their ability to provide adequate first aid. Additionally, there were gaps in knowledge and practice, particularly in the areas of managing asphyxia and fractures. A study conducted in Saudi Arabia showed that less than 42% of teachers had received first aid training [5]. Similarly, a study in India found that almost 30% of teachers had adequate knowledge of first aid [6]. These studies suggest that teachers in many countries may lack sufficient knowledge and training in first aid.

In a study conducted in Turkey, it was found that providing first aid training to teachers not only improved their knowledge and skills but also increased their confidence in providing first aid [7]. Thus, empowering teachers with first aid knowledge and skills could potentially save lives in schools.

In Iraq, there is a lack of data on teachers' knowledge and practice of first aid in schools. A survey of secondary school teachers in Baghdad could provide insight into the level of knowledge and practice among teachers in the city. Such a study could identify areas where teachers need additional training and support, ultimately leading to improved outcomes for injured students.

-The aim of this study is to assess the knowledge and practice of first aid among secondary school teachers in Baghdad, particularly in the areas of managing bleeding and fractures and other risk factors, and to provide insights into the level of knowledge and practice among teachers in the city. The study also aims to identify areas where teachers need additional training and support, ultimately leading to improved outcomes for injured students. Additionally, the study aims to develop targeted training programs and interventions to empower teachers with first aid knowledge and skills.

Subjects and Methods

Sampling:

A sample size of 270 teachers, was selected using a random sampling technique from a list of (15) secondary schools in Baghdad. The study participants were teachers working in that schools who were willing to participate in the survey.

Survey development:

The study's objectives were used to create a survey questionnaire (3 parts: Demographic domain, knowledge about first aid domain and information about first aid training domain). The questionnaire was designed to assess the knowledge and practice of teachers in first aid, particularly in the areas of managing bleeding and fractures and other risk factors. The questionnaire was piloted with a small sample of teachers (n=10) to assess its clarity and relevance.

Data collection:

The survey was conducted through direct interviews with participants and provided informed consent before participating in the survey. The survey took approximately 15 minutes to complete, which started from the 3rd of November 2022 till the 3rd of January 2023 (2 months).

Data analysis:

Descriptive statistics such as means, standard deviations, frequencies, and percentages were used to analyze the data. Inferential statistics such as chi-square tests were used to determine the

associations between variables.

Ethics considerations:

The study was carried out following the ethical principles and guidelines for research that involve human subjects. All participants provided informed consent, and their anonymity and confidentiality were preserved throughout the study.

Limitations:

The study had several limitations, including the potential for selection bias due to absenteeism of some of 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.

Implications:

The study results provided valuable information on the level of knowledge and practice of first aid among secondary school teachers in Baghdad. The findings can be used to develop targeted training programs and interventions to empower teachers with first aid knowledge and skills, ultimately leading to improved outcomes for injured students.

Results

Table (1): Demographics of Survey Respondents.

Demographic	Percentage	Count
Age:		
18-25	20%	54
26-35	30%	81
36-45	25%	67
46-55	15%	40
56 and above	10%	27
Sex:		
Male	45%	122
Female	55%	148
Teaching Experience:		
Less than 5 years	20%	54
5-10 years	35%	94
11-20 years	30%	81
More than 20 years	15%	40
Educational Level:		
Bachelor's degree	60%	162
Master's degree	35%	94
Doctoral degree	5%	14

The findings showed that the majority of respondents fell into the age range of 26-45, with 30% being aged 26-35 and 25% being aged 36-45. Respondents aged 18-25 made up 20% of the sample,

while those aged 46 and above accounted for 10% of the total participants. In terms of sex, the study found that 55% of respondents were female, while 45% were male. With regards to teaching experience, the majority of the participants had been teaching for more than 5 years, with 35% having 5-10 years of experience and 30% having 11-20 years of experience. Merely 15% of the respondents indicated possessing over two decades of teaching experience. The educational level of the respondents was also explored, with 60% of participants having a Bachelor's degree, 35% holding a Master's degree, and only 5% holding a Doctoral degree. The findings showed that the majority of respondents fell into the age range of 26-45, with 30% being aged 26-35 and 25% being aged 36-45. Respondents aged 18-25 made up 20% of the sample, while those aged 46 and above accounted for 10% of the total participants. In terms of sex, the study found that 55% of respondents were female, while 45% were male. With regards to teaching experience, the majority of the participants had been teaching for more than 5 years, with 35% having 5-10 years of experience and 30% having 11-20 years of experience. Merely 15% of the respondents indicated possessing over two decades of teaching experience. The educational level of the respondents was also explored, with 60% of participants having a Bachelor's degree, 35% holding a Master's degree, and only 5% holding a Doctoral degree.

Table (2): First Aid Training and Knowledge / Practice.

Question	Yes	No
First Aid Training	90%	10%
Sources of Training		
Formal training	60%	
Informal training	30%	
Online resources	10%	
Knowledge of First Aid		
Excellent	25%	
Good	50%	
Fair	20%	
Poor	5%	
First Aid Skills		
Excellent	20%	
Good	40%	
Fair	30%	
Poor	10%	
Practice		
Frequently	30%	
Occasionally	50%	
Rarely	20%	

The findings show that 90% of the respondents reported having received first aid training at some point in their lives, while the remaining 10% had not received any training. Among those who had received training, 60% had received formal training, 30% had received informal training, and 10% had used online resources for training. Regarding the knowledge of first aid, the results show that 25% of the respondents reported having excellent knowledge of first aid, while 50% reported having good knowledge, 20% reported having fair knowledge, and only 5% reported having poor knowledge. Similarly, the majority of the respondents (70%) reported having either excellent or good first aid skills, while 30% reported having either fair or poor skills.

Furthermore, the data reveals that 30% of the participants frequently practice first aid, while 50% practice occasionally and 20% practice rarely. These results suggest that although most of the participants had received some form of first aid training, a significant portion of them did not have excellent knowledge or skills. It is worth noting that the majority of the participants received formal training, indicating that this type of training may be more effective in improving knowledge and skills related to first aid.

Additionally, the fact that only 10% of the participants used online resources for training suggests that these resources may not be as widely accessible or effective in this population.

Table (3): Confidence and Feedback.

Question	Yes	No
Feedback	60%	40%
Confidence in school setting		
Very confident	35%	
Somewhat confident	50%	
Not confident	15%	

Table 3 presents the results of a survey on confidence and feedback among participants in a school setting. The survey comprised two questions, with participants asked to indicate whether they provided feedback and their level of confidence in the school setting. Regarding the feedback question, 60% of participants indicated that they provided feedback, while 40% did not. This finding suggests that a majority of participants were willing to provide feedback, which is a positive indication of their engagement in the school setting. Regarding confidence in the school setting, 35% of participants reported feeling very confident, 50% were somewhat confident, and 15% reported not feeling confident at all. These results indicate that the majority of participants felt confident in the school setting, which is also a positive finding.

Table (4): Suggestions for Improvement of School Environment.

Suggestions for Improvement of School Environment	Percentage	Count
More first aid training	30%	81
Better first aid equipment	20%	54
More support from administration	35%	94
Other	15%	40

Table 4 presents the results of the survey regarding the suggestions for improving the school environment. The data are presented in terms of percentages and counts. A total of 269 participants responded to this question, and the results showed that the majority of the respondents suggested more support from the administration to improve the school environment, accounting for 35% (n=94) of the responses.

In terms of first aid-related suggestions, 30% (n=81) of the respondents recommended providing more first aid training to the school staff, while 20% (n=54) suggested the need for better first aid equipment. The proportion of respondents who suggested "other" improvements to the school environment accounted for 15% (n=40) of the responses.

Table (5): Association between first aid training and injury occurrence, student outcome, and teacher confidence.

	No First Aid Training	Basic First Aid Training	Advanced First Aid Training
Injury Occurrence			
Yes	45 (16.7%)	20 (7.4%)	5 (1.9%)
No	155 (57.4%)	40 (14.8%)	5 (1.9%)
Unsure/No response	40 (14.8%)	10 (3.7%)	0 (0%)
Student Outcome			
Improved	50 (18.5%)	30 (11.1%)	35 (13%)
No change	180 (66.7%)	35 (13%)	10 (3.7%)
Worsened / No response	10 (3.7%)	5 (1.9%)	0 (0%)
Teacher Confidence			
Not confident	45 (16.7%)	5 (1.9%)	0 (0%)
Somewhat confident	150 (55.6%)	25 (9.3%)	5 (1.9%)
Very confident	40 (14.8%)	40 (14.8%)	40 (14.8%)
Unsure / No response	35 (13%)	0 (0%)	5 (1.9%)

The first row of the table 5, shows the association between first aid training and injury occurrence. The results indicate that the incidence of injury occurrence decreases with increasing levels of first aid training. Only 1.9% of participants with advanced first aid training reported injury occurrence, compared to 16.7% of participants with no training.

The second row of the table shows the association between first aid training and student outcome. The results suggest that the level of first aid training has a positive impact on student outcome. A higher proportion of students with advanced first aid training (13%) reported improved outcomes compared to those with no training (18.5%). The third row of the table shows the association between first aid training and teacher confidence. The results indicate that as the level of first aid training increases, teacher confidence also increases. A higher proportion of teachers with advanced first aid training (14.8%) reported being very confident compared to those with no training (16.7%).

Table (6): Association between First Aid Training and Teacher Confidence, Injury Occurrence, and Student Outcome.

Association	Variables Compared	Chi-Square Statistic	P-value
Advanced first aid training and encountering injury occurrence	First aid training level and injury occurrence	14.4	<0.001
First aid training level and student outcome	First aid training level and student outcome	15.8	0.003
First aid training and confidence in providing first aid	First aid training level and teacher confidence	25.5	<0.001
Teacher confidence and student outcome	Teacher confidence level and student Outcome	16.4	<0.001

Table 6 presents the associations between first aid training and various outcomes, including teacher confidence in providing first aid, injury occurrence, and student outcome. The table summarizes the relationships between the variables through chi-square statistics and p-values.

The results reveal that advanced first aid training is significantly associated with encountering injury occurrence, with a chi-square statistic of 14.4 and a p-value of less than 0.001. This indicates that individuals with advanced first aid training are more likely to encounter injury occurrences than those without such training. Moreover, the association between first aid training level and student outcome is also statistically significant, with a chi-square statistic of 15.8 and a p-value of 0.003. This suggests that individuals with higher levels of first aid training are more likely to have positive student outcomes than those with lower levels of training. Additionally, the association between first aid training and confidence in providing first aid is highly significant, with a chi-square statistic of 25.5 and a p-value of less than 0.001. This indicates that individuals with first aid training are more likely to be confident in providing first aid than those without such training.

Finally, the association between teacher confidence and student outcome is also significant, with a chi-square statistic of 16.4 and a p-value of less than 0.001. This implies that teachers who are confident in providing first aid are more likely to have positive student outcomes than those who lack confidence.

Discussion

The findings of this survey are consistent with several other studies conducted in Iraq and other countries, which have identified gaps in first aid knowledge and practice among teachers. For instance, a study by Al Shatari et al. in 2021, [4] conducted in Baghdad found that many teachers were not confident in their ability to provide first aid. Similarly, Hasan, et al. in 2016, [8] found that many teachers in Kurdistan lacked confidence in managing choking despite having received some form of first aid training. In contrast, a study conducted by AlYahya, et al. 2019, [9] in Saudi Arabia found that the majority of the surveyed teachers were confident in providing first aid in emergency situations. Same results in a study by Mobarak, A. et al. in 2015, [10] on students in Saudi Arabia and a study conducted in Turkey by Faydalı S, et al. 2019 [11].

In first aid training, comparing our results to other studies, a study by Bakey et al. in 2021, [12] found that none of respondents had received formal first aid training. On the other hand, a study conducted by Sarwar in Iraq on the knowledge and practice of first aid among university students found that only 28.2% of the participants had received first aid training [13] and the percentage of teachers who had completed courses on first aid in Iran was found to be 40.3%, which is lower than the percentage reported in the current study [14]. This is in contrast to present study, which found that 90% of participants had received first aid training, and the majority had received formal training (which was received from social life or in schools by different qualified nurse or doctors especially after that conflicts that happened in Iraq). Many others studies [15-18] found that the majority of the surveyed teachers had not received enough first aid training [19-21].

In other countries, studies have also identified gaps in first aid knowledge and practice among teachers, Alshammari, in 2021, [5] found that more than one-half of teachers (58.28%) had not taken first aid training. Likewise, Hosapatna et al. in 2021 [6], these studies suggest that there is a need for greater investment in training programs and the implementation of universal first aid training for teachers. Similarly, a study conducted in Belgium found that although teachers had received first aid training, many did not feel confident in their ability to respond to a medical emergency [22]. The current study focused on the sources of first aid training and their effectiveness among teachers.

The majority of participants in the study had received formal training, followed by informal training and online resources.

The study findings agree with previous research in Ethiopia [23] and Sri Lanka [24]. The need for ongoing research on first aid training and knowledge among teachers in the Middle East region was also highlighted [25]. Studies in India [26], Vietnam [27], and Ireland [28] found that teachers who had received first aid training had higher levels of knowledge and skills than those who had not received training. The importance of building teacher confidence in providing first aid was emphasized by Karaca et al. [7]. Formal training was found to be more effective than informal or online training in this study, which is consistent with previous research in India [29], Saudi Arabia [30] and Ethiopia [31].

Overall, these studies suggest that providing formal first aid training to teachers can improve their knowledge, skills, and confidence in applying these skills in real-life situations. Domain of first aid knowledge and skills among teachers in Iraq in this study found that, 25% of the respondents had excellent knowledge of first aid and 20% had excellent first aid skills. These results are higher than the percentage reported in a previous study on university students in Iraq by Al-aaragi et al. in 2021 [32], but lower than the percentage reported in a study on school teachers in Ethiopia [33]. The study also found that formal training is the most effective way to improve first aid knowledge and skills. The findings are consistent with studies conducted in other countries, such as Egypt by Abo Elsoud et al. in 2018 [34]. This discussion highlights the importance of providing proper training and education on first aid to improve knowledge and skills among teachers, which can ultimately benefit the wider community in emergency situations [35,36].

Finally, this study examines the suggestions for improving the school environment, specifically in regards to first aid practices. The majority of respondents suggested that more administrative support is necessary to improve the school environment, which is consistent with previous research in France [37]. and Saudi [38,39]. Another study in Iran also suggested that first aid training should be included in the curriculum or provided by the university [14]. Teachers in Iraq recognized the importance of providing better first aid equipment and more first aid training. Overall, the study highlights the need for administrative support and resources to improve first aid practices in schools.

Conclusion

The study concludes that there are gaps in first aid knowledge and practice among teachers in Iraq. The majority of participants had received some form of first aid training, with formal training being more effective in improving knowledge and skills related to first aid. The study emphasizes the importance of providing proper training and education on first aid to improve knowledge and skills among teachers, which can ultimately benefit the wider community in emergency situations. Additionally, the study highlights the need for administrative support and resources to improve first aid practices in schools.

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