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## Introduction

First aid refers to the immediate intervention provided to individuals encountering either minor or severe medical conditions or injuries. It encompasses a series of fundamental, occasionally life-preserving techniques administered prior to the arrival of professional medical personnel (Hosapatna et al., 2019; Hrušková et al., 2022).

# Impact of Training Program on Enhancing Primary School Teachers' Knowledge and Performance Skills about the First Aid

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## ABSTRACT

**Objective:** The study aims to assess the level of knowledge and performance of primary school teachers in first aid, design and implement a tailored educational program for them, and then measure the impact of this program on improving their knowledge and performance.

**Methods and Materials:** A quasi-experimental study design convenience sampling method selected (60) teachers was selected from schools. The study sample in this research was divided into two groups: (30) teachers for the study, which was exposed to the instruction program, and (30) teachers for the control group. Teachers' knowledge and performance Questionnaire were used to collect data. The work started with the implementation of the instruction program from the 16th of December to the 15th of January, including pre-tests and post-tests 1 and 2.

**Findings:** The results showed that the mean ages of participants in the study and control groups were ( $39 \pm 9$  and  $38 \pm 9$  years, respectively), with the largest percentage concentrated in the 40–49 age group in study group and 30-39 age group in control group. The gender distribution was equal in both groups. The results showed significant improvements in the knowledge and performance of the study group teachers regarding first aid after implementing the educational program, with knowledge scores rising from average to good, and performance from poor to good.

**Conclusion:** The results of the current investigation emphasize the urgent necessity for systematically designed educational initiatives aimed at enhancing primary school educators' comprehension and readiness in first aid practices.

**Keywords:** Teachers, First Aid, Knowledge, performance Skills

The primary objective of first aid is to sustain life, avert the deterioration of the medical condition, and promote recovery. The preliminary actions undertaken to manage prevalent ailments and injuries can profoundly affect the subsequent trajectory of the condition and the potential for complications (Alwadei et al., 2024).

Thus, first aid must be administered promptly and accurately utilizing the available facilities and resources at the scene. If executed proficiently, this will alleviate

the victim's suffering and impairment and may even prevent fatality; conversely, if conducted ineptly, it is likely to worsen the circumstances and could lead to disability or death (Ajani et al., 2022).

The World Health Organization approximates that between 10-25% of pediatric injuries occur during school hours and that children with special healthcare needs constitute roughly 25% of emergency department visits (Elsoud et al., 2018).

This underscores the need for primary and secondary accident prevention measures in educational institutions. The timely delivery of suitable first aid to pupils following an injury serves as a fundamental secondary preventive strategy and can save lives. For first aid to be effective, it must be administered by trained individuals present at or near the accident site (Al Gharsan & Alarfaj, 2019).

In the communal setting of schools in Iraq, numerous challenges may hinder the provision of adequate first aid services for students. There are no primary care physicians or nurses available at schools. Thus, teachers are likely to be the first responders during incidents. Also, the delay in ambulance arrival exacerbates the response time to emergencies, necessitating immediate intervention by teachers to preserve students' lives (Alsulami et al., 2022).

Preparing teachers to manage emergencies is critical, as basic first-aid measures can prevent serious outcomes resulting from inattention or improper actions. Teachers' experience and skills in first aid can greatly influence outcomes and determine life or death, temporary or permanent disability, and speed of recovery versus prolonged hospitalization for children (Endale et al., 2024; Hasan et al., 2016; Nazaralian, & Seyyed Aghaei, 2025).

During academic hours, educators assume the role of primary first responders to emergencies and injuries that transpire within the educational environment. As a result, it is imperative that they are adequately equipped to address health concerns affecting students, given that pupils allocate a significant portion of their time within the school setting. Consequently, teachers are more accessible to children than healthcare providers and can leverage this proximity to deliver suitable education and training to enable teachers to administer first aid (Ghyadh & Al-Jourani, 2021).

The training program provides educators with critical skills such as evaluating injury severity, managing hemorrhaging, and immobilizing fractures while also bolstering their confidence and resilience in emergencies. Assessing the effectiveness of first-aid Training programs is crucial to equip instructors with the requisite skills and confidence to address situations. First aid training guarantees that participants periodically upgrade their knowledge and abilities (Neyişci, 2024).

## Methods and Materials

### *Study Design and Participants*

A quasi-experimental study design. Has been applied with the use of pre-test and post-test 1& 2 approaches for two groups of samples (study and control).

It included Diwaniyah city in Iraq. The study was carried out at a governmental school. (15) primary schools from (335) total of governmental primary schools in Al Diwaniyah city.

A non-probability (convenience) sample comprising (60) educators was extracted from various educational institutions. For this research, the sample was organized into two separate factions: (30) educators who were active in the instructional program, and (30) educators who comprised the control group.

The program initiated the execution of the educational curriculum from December 16th to January 15th, covering pre-assessments along with post-assessments 1 and 2. The framework of the educational program was deliberated upon.

### *Instruments*

#### **Part I: Demographic data form:**

A socio-demographic data sheet consisting of (11) items, which included sex, age, marital status, academic achievement, years of experience, number of children, specialist, type of school, residual and received knowledge about first aid earlier and present of first aid kit.

#### **Part II: Teachers' knowledge Questionnaire**

The second part included a self-report questionnaire comprised of six sections consisting of (37) items. The first section is about general information about first aid consists of (5) question; the second is about the wound

and bleeding and consists of (7) questions; the third is about fractures, sprains, and articular dislocations comprised of (7) questions; the fourth is about the burn consist of (6) question; the fifth is about choking and cardiopulmonary resuscitation consist of (8) question; the sixth section is about the other medical conditions consist of (4) question.

The rating and scoring of items on the three-point Likert scale were applied to rating knowledge. The items are yes, uncertain, and no. The three-point Likert scales were scored as (2) for correct, (1) for uncertain, and (0) for incorrect answers. The total level of knowledge scores for teachers are categorized as follows: poor= 0-24.66, fair=24.67-49.32, good= 49.33-74.

### Part III: Teacher Performance Questionnaire

The third part of the questionnaire is comprised of a checklist consisting of six sections. The first section includes the first aid step for choking, which consists of 3 steps; the second section contains the first aid step for fracture, which consists of 5 steps; the third section includes the first aid step for the unconscious, which consists of 10 steps; the fourth section contains the first aid step for epistaxis, which consists of 3 steps; and the fifth section contains the first aid step for a major open wound, which consists of 4 steps.

The sex section includes the first aid step for burns, which consists of 3 steps. The rating and scoring of items on the three-point Likert scale were applied to rating performance. The items are does right, does wrong, and doesn't do. The teacher's performance data were scored as follows: 2 for does right, (1) for does wrong, (0) for doesn't do, and for three observations.

To assess the clarity, relevance, and sufficiency of the questionnaire in fulfilling the objectives of the present study, the face validity of the initially developed instrument is evaluated by a panel of experts.

A preliminary version of the questionnaire was meticulously crafted and subsequently presented to eleven experts in the field. The recommendations provided were duly taken into account, alongside the feedback received from the experts. Subsequently, modifications were implemented in the final version of the questionnaire following their suggestions and observations.

The analysis of Cronbach's Alpha reveals a commendable assessment for both the knowledge scale (0.752) and the performance scale (0.722), indicating that the questionnaires exhibited an appropriate degree of internal consistency and equivalence in their measurability.

### Data Analysis

Utilizing version 26 of the Statistical Package for the Social Sciences (IBM), the data was coded and analyzed.

### Findings and Results

The results showed that the mean ages of participants in the study and control groups were ( $39 \pm 9$  and  $38 \pm 9$  years, respectively), with the largest percentage 40% concentrated in the 40–49 age group in the study group and 36.7% concentrated in the 30-39 age group in the control group. The gender distribution was equal in both groups (50% males and 50% females). Regarding marital status, the highest percentage was married, reaching 83.3% in the study group and 66.7% in the control group, while divorce and widowhood were only found in the control group. Regarding the number of children, the largest percentage was in the category of those with one to three children, at 40% in the study group and 36.7% in the control group. The data also showed that all participants were urban residents (100% in both groups) (Table 1).

**Table 1**

*Distribution of Participants According to their Socio-demographic Characteristic*

| No. | Characteristics | Study group |        | Control group |       |      |
|-----|-----------------|-------------|--------|---------------|-------|------|
|     |                 | F           | %      | F             | %     |      |
| 1   | Age (year)      | 20 – 29     | 3      | 10            | 6     | 20   |
|     |                 | 30 – 39     | 11     | 36.7          | 11    | 36.7 |
|     |                 | 40 – 49     | 12     | 40            | 8     | 26.7 |
|     |                 | 50 – 59     | 4      | 13.3          | 5     | 16.7 |
|     |                 | Total       | 30     | 100           | 30    | 100  |
|     |                 | M±SD        | 39 ± 9 |               | 38± 9 |      |

|   |                    |            |    |      |    |      |
|---|--------------------|------------|----|------|----|------|
| 2 | Sex                | Male       | 15 | 50   | 15 | 50   |
|   |                    | Female     | 15 | 50   | 15 | 50   |
|   |                    | Total      | 30 | 100  | 30 | 100  |
| 3 | Marital status     | Unmarried  | 5  | 16.7 | 7  | 23.3 |
|   |                    | Married    | 25 | 83.3 | 20 | 66.7 |
|   |                    | Divorced   | 0  | 0    | 2  | 6.7  |
|   |                    | Widowed/er | 0  | 0    | 1  | 3.3  |
|   |                    | Total      | 30 | 100  | 30 | 100  |
| 4 | Number of children | None       | 7  | 23.3 | 10 | 33.3 |
|   |                    | 1 – 3      | 12 | 40   | 11 | 36.7 |
|   |                    | 4 – 6      | 12 | 33.3 | 8  | 26.7 |
|   |                    | 7+         | 1  | 3.3  | 1  | 3.3  |
|   |                    | Total      | 30 | 100  | 30 | 100  |
| 5 | Residency          | Rural      | 0  | 0    | 0  | 0    |
|   |                    | Urban      | 30 | 100  | 30 | 100  |
|   |                    | Total      | 30 | 100  | 30 | 100  |

f: Frequency, %: Percentage M: Mean, SD: Standard Deviation

The results of [Table 2](#) showed a clear difference in the level of teachers' knowledge of first aid between the study and control groups. In the pre-test, the level of knowledge was average in both groups, with an average score of 38.17 for the study group and 37.90 for the control group. After implementing the educational program, the study group achieved a significant improvement in the first post-test, with 96.7% of

teachers reaching a "good" level with an average score of 61.47, while the control group remained at an "average" level with an average score of 36.80. This improvement continued in the study group in the second post-test, with 93.3% of them maintaining a "good" level with an average score of 57.97, while the control group showed no significant improvement and remained at an "average" level with an average score of 37.80.

**Table 2**

*Overall Assessment of Teachers' Knowledge of First Aid in the Study and Control Groups*

| Overall, Knowledge | Study Group (N= 30) |      |       |       |             |      |       |       |              |      |       |       | Control Group (N=30) |     |       |       |             |      |       |       |              |      |       |       |
|--------------------|---------------------|------|-------|-------|-------------|------|-------|-------|--------------|------|-------|-------|----------------------|-----|-------|-------|-------------|------|-------|-------|--------------|------|-------|-------|
|                    | Pre-test            |      |       |       | Post-test I |      |       |       | Post-test II |      |       |       | Pre-test             |     |       |       | Post-test I |      |       |       | Post-test II |      |       |       |
|                    | f                   | %    | M     | S.D   | f           | %    | M     | S.D   | F            | %    | M     | S.D   | f                    | %   | M     | S.D   | F           | %    | M     | S.D   | F            | %    | M     | S.D   |
| Poor               | 5                   | 16.7 |       |       | 0           | 0    |       |       | 0            | 0    |       |       | 0                    | 0   |       |       | 0           |      |       |       | 0            | 0    |       |       |
| Fair               | 23                  | 76.6 |       |       | 1           | 3.3  |       |       | 2            | 6.7  |       |       | 3                    | 100 |       |       | 29          | 96.7 |       |       | 29           | 96.7 |       |       |
| Good               | 2                   | 6.7  | 38.17 | 5.896 | 29          | 96.7 | 61.47 | 6.453 | 28           | 93.3 | 57.97 | 6.316 | 0                    | 0   | 37.90 | 4.887 | 1           | 3.3  | 36.80 | 5.108 | 1            | 3.3  | 37.80 | 5.732 |
| Total              | 30                  | 100  |       |       | 30          | 100  |       |       | 30           | 100  |       |       | 3                    | 100 |       |       | 30          | 100  |       |       | 30           | 100  |       |       |

"Frequency, %: Percentage, Min.: Minimum; Max.: Maximum, M: Mean for total score, SD=Standard Deviation for total score"

("where, Poor= 0 – 24.66, Fair= 24.67 – 49.32, Good= 49.33 – 74")

[Table 3](#) shows an overall assessment of the teachers' first aid performance in both the study and control groups. Both showed poor performance in the pre-test, with 96.7% for the study group and 100% for the control group. Following the intervention, the study group experienced significant improvement, with 83.8% of teachers achieving a "good" level in the first post-test. This improvement continued in the second post-test,

with the mean score increasing from 26.80 in the pre-test to 130.17 in the first post-test. In contrast, the control group showed no improvement, with all teachers remaining in the poor performance category throughout the periods, with the mean scores remaining almost constant (31.10 pre-test, 30.33 post-test1, and 31.13 post-test 2).

**Table 3***Overall Assessment of Teachers' Performance about First Aid in the Study and Control groups*

| Overall Performance | Study Group (N= 30) |      |       |        |             |      |        |        |              |     |        |        | Control Group (N=30) |     |       |       |             |     |       |       |              |     |       |       |
|---------------------|---------------------|------|-------|--------|-------------|------|--------|--------|--------------|-----|--------|--------|----------------------|-----|-------|-------|-------------|-----|-------|-------|--------------|-----|-------|-------|
|                     | Pre-test            |      |       |        | Post-test I |      |        |        | Post-test II |     |        |        | Pre-test             |     |       |       | Post-test I |     |       |       | Post-test II |     |       |       |
|                     | f                   | %    | M     | SD     | F           | %    | M      | SD     | F            | %   | M      | SD     | f                    | %   | M     | SD    | F           | %   | M     | SD    | F            | %   | M     | SD    |
| Poor                | 29                  | 96.7 |       |        | 0           | 0    |        |        | 0            | 0   |        |        | 30                   | 100 |       |       | 30          | 100 |       |       | 30           | 100 |       |       |
| Fair                | 1                   | 3.3  | 26.80 | 13.221 | 5           | 16.7 | 130.17 | 19.321 | 12           | 40  | 119.57 | 18.803 | 0                    | 0   | 31.10 | 9.345 | 0           | 0   | 30.33 | 9.419 | 0            | 0   | 31.13 | 9.001 |
| Good                | 0                   | 0    |       |        | 25          | 83.8 |        |        | 18           | 60  |        |        | 0                    | 0   |       |       | 0           | 0   |       |       | 0            | 0   |       |       |
| Total               | 30                  | 100  |       |        | 30          | 100  |        |        | 30           | 100 |        |        | 30                   | 100 |       |       | 30          | 100 |       |       | 30           | 100 |       |       |

"Frequency, %: Percentage, Min.: Minimum; Max.: Maximum, M: Mean for total score, SD=Standard Deviation for total score"  
 ("where Poor= 0 – 56, Fair= 56.1 – 112, Good= 112.1 – 186")

Table 4 elucidates that the RM-ANOVA analysis demonstrates that the educational intervention concerning first aid within the educational institution significantly enhanced the instructional knowledge of the instructors in the experimental group, as evidenced by the substantial significance associated with the

"Greenhouse-Geisser" adjustment at a p-value of 0.000 and a considerable effect size indicated by a partial eta squared value of .873. The descriptive statistics indicate a marked variation in the mean scores, which exhibited an increase during post-test 1 followed by a modest decrease during post-test 2.

**Table 4***Significant Difference in Primary School Teachers' Knowledge about First Aid (Study Group, N=30).*

| Descriptive  |               |              | Within-Subjects Effect |                         |        |             |        |         |      |                     |
|--------------|---------------|--------------|------------------------|-------------------------|--------|-------------|--------|---------|------|---------------------|
| Knowledge    | Mean (S.D)    |              | Source                 | Type III Sum of Squares | Df     | Mean Square | F      | P-value | Sig. | Partial Eta Squared |
| Pre-test     | 38.17 (5.896) | Time         | Sphericity Assumed     | 9471.800                | 2      | 4735.900    | 199.78 | .000    | H.S  | .873                |
| Post-test I  | 61.47 (6.453) |              | Greenhouse-Geisser     | 9471.800                | 1.366  | 6931.923    | 199.78 | .000    | H.S  | .873                |
| Post-test II | 57.97 (6.316) |              | Huynh-Feldt            | 9471.800                | 1.411  | 6712.642    | 199.78 | .000    | H.S  | .873                |
|              |               |              | Lower-bound            | 9471.800                | 1.000  | 9471.800    | 199.78 | .000    | H.S  | .873                |
|              |               | Error (Time) | Sphericity Assumed     | 1374.867                | 58     | 23.705      |        |         |      |                     |
|              |               |              | Greenhouse-Geisser     | 1374.867                | 39.626 | 34.696      |        |         |      |                     |
|              |               |              | Huynh-Feldt            | 1374.867                | 40.920 | 33.599      |        |         |      |                     |
|              |               |              | Lower-bound            | 1374.867                | 29.000 | 47.409      |        |         |      |                     |

"S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant"

Table 5 reveals that there is no significant difference in teachers' knowledge in the control group; the "Greenhouse-Geisser" correction was not statistically

significant, and the size effect was very small with partial eta square. The descriptive analysis shows no clear variation in the mean score of teachers' knowledge.

**Table 5***Significant Difference in Primary School Teachers' Knowledge about First Aid (Control Group, N=30)*

| Descriptive  |               | Within-Subjects Effect |                    |                         |        |             |       |         |      |                     |
|--------------|---------------|------------------------|--------------------|-------------------------|--------|-------------|-------|---------|------|---------------------|
| Knowledge    | Mean (S.D)    |                        | Source             | Type III Sum of Squares | Df     | Mean Square | F     | P-value | Sig. | Partial Eta Squared |
| Pre-test     | 37.90 (4.887) | Time                   | Sphericity Assumed | 22.200                  | 2      | 11.100      | 1.837 | .168    | N.S  | .060                |
| Post-test I  | 36.80 (5.108) |                        | Greenhouse-Geisser | 22.200                  | 1.510  | 14.707      | 1.837 | .179    | N.S  | .060                |
| Post-test II | 37.80 (5.732) |                        | Huynh-Feldt        | 22.200                  | 1.575  | 14.099      | 1.837 | .177    | N.S  | .060                |
|              |               |                        | Lower-bound        | 22.200                  | 1.000  | 22.200      | 1.837 | .186    | N.S  | .060                |
|              |               | Error (Time)           | Sphericity Assumed | 350.467                 | 58     | 6.043       |       |         |      |                     |
|              |               |                        | Greenhouse-Geisser | 350.467                 | 43.776 | 8.006       |       |         |      |                     |
|              |               |                        | Huynh-Feldt        | 350.467                 | 45.662 | 7.675       |       |         |      |                     |
|              |               |                        | Lower-bound        | 350.467                 | 29.000 | 12.085      |       |         |      |                     |

"S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant"

Table 6 reveals that the RM-ANOVA test indicates that the instruction program about first aid in the school was highly effective on teachers' performance in the study group, evidenced by high significance associated with "Greenhouse-Geisser" correction at p-value=0.000 and

high size effect with partial eta square = .939. It is clear from the descriptive that there is a noticeable variation in the mean score, which increases during post-test 1 and a slight decline during post-test 2.

**Table 6**

*Significant Difference in Primary School Teachers' Performance about First Aid (Study Group, N=30)*

| Descriptive     |                    |                 | Within-Subjects Effect |                            |        |             |         |             |      |                        |
|-----------------|--------------------|-----------------|------------------------|----------------------------|--------|-------------|---------|-------------|------|------------------------|
| Performan<br>ce | Mean (S.D)         |                 | Source                 | Type III Sum<br>of Squares | Df     | Mean Square | F       | P-<br>value | Sig. | Partial Eta<br>Squared |
| Pre-test        | 26.80 (13.221)     | Time            | Sphericity Assumed     | 194026.822                 | 2      | 97013.411   | 445.397 | .000        | H.S  | .939                   |
| Post-test I     | 130.17             |                 | Greenhouse-Geisser     | 194026.822                 | 1.331  | 145769.475  | 445.397 | .000        | H.S  | .939                   |
| Post-test II    | (19.321)           |                 | Huynh-Feldt            | 194026.822                 | 1.371  | 141531.640  | 445.397 | .000        | H.S  | .939                   |
|                 | 119.57<br>(18.803) |                 | Lower-bound            | 194026.822                 | 1.000  | 194026.822  | 445.397 | .000        | H.S  | .939                   |
|                 |                    | Error<br>(Time) | Sphericity Assumed     | 12633.178                  | 58     | 217.813     |         |             |      |                        |
|                 |                    |                 | Greenhouse-Geisser     | 12633.178                  | 38.601 | 327.280     |         |             |      |                        |
|                 |                    |                 | Huynh-Feldt            | 12633.178                  | 39.756 | 317.765     |         |             |      |                        |
|                 |                    |                 | Lower-bound            | 12633.178                  | 29.000 | 435.627     |         |             |      |                        |

"S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant"

Table 7 reveals that there is no significant difference in teachers' performance in the control group; the "Greenhouse-Geisser" correction was not statistically

significant, and the size effect was very small with partial eta square. The descriptive analysis shows no clear variation in the mean score of teachers' performance.

**Table 7**

*Significant Difference in Primary School Teachers' Performance about First Aid (Control Group, N=30)*

| Descriptive  |            |                 | Within-Subjects Effect |                         |        |             |      |         |      |                     |
|--------------|------------|-----------------|------------------------|-------------------------|--------|-------------|------|---------|------|---------------------|
| Performance  | Mean (S.D) | Source          |                        | Type III Sum of Squares | Df     | Mean Square | F    | P-value | Sig. | Partial Eta Squared |
| Pre-test     | 31.10      | Time            | Sphericity Assumed     | 12.289                  | 2      | 6.144       | .777 | .464    | N.S  | .026                |
| Post-test I  | (9.345)    |                 | Greenhouse-Geisser     | 12.289                  | 1.374  | 8.942       | .777 | .422    | N.S  | .026                |
| Post-test II | 30.33      |                 | Huynh-Feldt            | 12.289                  | 1.420  | 8.655       | .777 | .426    | N.S  | .026                |
|              | (9.419)    |                 | Lower-bound            | 12.289                  | 1.000  | 12.289      | .777 | .385    | N.S  | .026                |
|              | 31.13      | Error<br>(Time) | Sphericity Assumed     | 458.378                 | 58     | 7.903       |      |         |      |                     |
|              | (9.001)    |                 | Greenhouse-Geisser     | 458.378                 | 39.852 | 11.502      |      |         |      |                     |
|              |            |                 | Huynh-Feldt            | 458.378                 | 41.178 | 11.132      |      |         |      |                     |
|              |            |                 | Lower-bound            | 458.378                 | 29.000 | 15.806      |      |         |      |                     |



“S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant”

## Discussion and Conclusion

The current study involved 60 primary school teachers who were equally divided into the study and control groups ( $n=30$  each), ensuring homogeneity in group size (Table 1). The analysis of demographic data revealed that the predominant age group among study participants was 40–49 years (40% in the study group), while the control group showed the highest frequency within the 30–39 years range (36.7%). These findings reflect the ageing nature of the teaching workforce in primary education, potentially due to the decline in recent recruitment and the relocation of new teachers to peripheral regions. This is consistent with the findings of Shatari et al. (2019), who reported a predominance (44.1%) of teachers aged 40–49 years in Baghdad. Similar age distribution trends were also noted in the work of Mersal and Aly (2016), who observed that 44.1% of teachers were aged 40 years or above in their study on disaster and first aid education in schools.

Gender distribution in both study and control groups was equal, with 50% males and 50% females, which likely resulted from random assignment. However, this finding contrasts with the study by (Al Gharsan & Alarfaj, 2019) in Saudi Arabia, where females constituted a higher percentage (56%) of participants, suggesting possible regional or institutional variations in teacher gender demographics.

Regarding marital status, a majority of participants in both groups were married, indicating a trend toward family stability among primary educators. This observation aligns with (Al-Aaragi et al., 2021), who found that 72.2% of teachers in Karbala, Iraq were married. As well as (Farhood & Hattab, 2024) whose study in Baghdad demonstrated even higher proportions of married participants (90% in the study group and 80% in the control group).

Regarding family structure, the majority of teachers in both groups reported having between one and three children. This conclusion is supported by the empirical study conducted by (Akhagbaker & Aziz, 2024) in Erbil, in which 65.1% of respondents reported having between one and three children, indicating a predominant family constellation among teachers in various regions of Iraq.

Moreover, it is of paramount importance that 100% of the participants resided in urban areas, which

accentuates the rigor of the selection criteria employed and delineates the geographical parameters of the inquiry, given that all the educational institutions included in the sample were situated within urban locales. The study's findings indicate that educators' preference for urban living aligns with the results reported by (Atshan et al., 2020) who observed that 55.6% of teachers reside in urban areas. This demographic trend underscores the influential role that urban educational environments play in fostering access to and active participation in scholarly research.

Regarding first aid knowledge, primary school teachers initially exhibited an average level of understanding in both the study and control groups. However, following the educational intervention, the study group demonstrated a marked improvement, with 96.7% attaining a level classified as “good” and a corresponding mean score of 61.47—a trend that persisted in the second post-test. In contrast, no significant change was noted within the control group. These findings corroborate those of (Subramanian, 2024), who reported a rise from 60% moderate knowledge pre-intervention to 96.67% post-training, thereby confirming the effectiveness of structured educational programs.

In addition, the educators' performance when delivering first aid to the experimental cohort showed a significant improvement following the implementation of the training program. The percentage of successful assessment outcomes dropped from 83.6% to 60% between the first post-assessment and the second post-assessment, respectively, during which time mean scores increased significantly (control group showed no changes). Similar findings were reported by (Qawala et al., 2021) resulting from improvements in first-aid configurations, after conducting similar training protocols.

Collectively, the data underscores the criticality of instituting targeted educational interventions to elevate the first aid knowledge and competencies of primary school educators. Demographic evaluations indicate that a predominant proportion of the educators are of middle age, reside in urban locales, and bear familial obligations, which aligns with overarching national patterns observed within the educational domain.

The results of this research highlight the urgent need of a systematic approach on the training of primary school teachers in terms of first aid. The participants that chose interventions yielded significant positive results (increased knowledge measurements and stable mean scores) only in the study group, thus confirming the use of specialized educational interventions specifically targeting study group were effective.

Conversely, the stagnation seen in the control group highlights the inadequacies of relying solely on informal domain knowledge or experiential learning. Demographic data also show that many teachers are middle-aged, come from an urban background, and have families of their own. This is a microcosm of broader national trends within education.

In light of these findings, integrating first aid training into teacher development curricula is strongly recommended, especially in regions where emergency preparedness is limited. Future research should expand on these insights by evaluating long-term knowledge retention and practical performance outcomes in real-life school settings.

#### **Recommendation:**

1. Through the promotion of first aid competency among educators as an integral aspect of their humanitarian obligations, we fortify the tenets of volunteerism and humanitarian assistance, enhance their readiness for crises, and consequently aid in safeguarding the welfare of students.
2. Recommendations to the Ministry of Health: The Department of School Health should implement continuous educational and training programs on first aid for educators to ensure the prompt management of injuries and emergent situations.
3. Focus on incorporating first aid education into the curricula of teacher training colleges and institutes.

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#### **Declaration of Interest**

The authors of this article declared no conflict of interest.

#### **Ethical Considerations**

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional. Necessary administrative approvals were obtained from the College of Health and Medical Technologies - Kufa, the Department of Community Health, and the Diwanayah Education Directorate prior to the study. Approval from the Ethics Committee was also obtained, and verbal consent was obtained from all participants after they were fully informed of their right to withdraw without any repercussions. Confidentiality was assured throughout the research.

#### **Transparency of Data**

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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#### **Authors' Contributions**

All authors equally contribute to this study.

#### **References**

- Ajani, A. T., Movitaria, M. A., Komelasari, Y., & Saputra, N. (2022). Simulation methods for emergency handling preparedness in junior high school children in the new normal era. 1st International Conference on Health Sciences and Biotechnology (ICHB 2021),
- Akhagbaker, J. M., & Aziz, K. F. (2024). Teacher's Practice Regarding Cardiopulmonary Resuscitation at Basic Schools in Erbil City. *Erbil Journal of Nursing and Midwifery*, 7(1), 31-45. <https://doi.org/10.15218/ejnm.2024.04>
- Al Gharsan, M., & Alarfaj, I. (2019). Knowledge and practice of secondary school teachers about first aid. *Journal of Family Medicine and Primary Care*, 8(5), 1587-1593. [https://doi.org/10.4103/jfmpc.jfmpc\\_76\\_19](https://doi.org/10.4103/jfmpc.jfmpc_76_19)
- Alsulami, M., Madkhali, A. A., Alharbi, M. T., Alzahrani, A. R., Aljohani, I. N., Al-Thaqafy, M. S., Alsulami, A. A., Eldigre, M., & Aloraibi, S. (2022). Knowledge and attitude of paediatric first aid among elementary schoolteachers in Jeddah, Saudi Arabia. *Journal of Family Medicine and Primary Care*, 11(11), 6795-6800. [https://doi.org/10.4103/jfmpc.jfmpc\\_369\\_22](https://doi.org/10.4103/jfmpc.jfmpc_369_22)



- Alwadei, M. S., Alnojeam, A. M., Alwadei, S. S., Alnujaim, M. S., Alwadei, M. S., Kofi, M., Alarfaj, G., & Albattal, S. M. (2024). Impact of Basic Life Support Training Program among Saudi Primary School Teachers in Riyadh. *European Journal of Medical and Health Research*, 2(2), 165-172. [https://doi.org/10.59324/ejmhr.2024.2\(2\).18](https://doi.org/10.59324/ejmhr.2024.2(2).18)
- Atshan, R. S., Mohammed, A. Q., & Abbas, A. H. (2020). Impact of an Educational program on Teachers' Knowledge Toward Chickenpox Prevention at Primary Schools in Al-Najaf Governorate. *Indian Journal of Forensic Medicine & Toxicology*, 14(3), 279. [https://www.researchgate.net/profile/Riyadh-Saad-Atshan/publication/348281053\\_Impact\\_of\\_an\\_Educational\\_program\\_on\\_Teachers'\\_Knowledge\\_Toward\\_Chickenpox\\_Prevention\\_at\\_Primary\\_Schools\\_in\\_Al-Najaf\\_Governorate/links/5ff63f6d45851553a0262ae1/Impact-of-an-Educational-program-on-Teachers-Knowledge-Toward-Chickenpox-Prevention-at-Primary-Schools-in-Al-Najaf-Governorate.pdf](https://www.researchgate.net/profile/Riyadh-Saad-Atshan/publication/348281053_Impact_of_an_Educational_program_on_Teachers'_Knowledge_Toward_Chickenpox_Prevention_at_Primary_Schools_in_Al-Najaf_Governorate/links/5ff63f6d45851553a0262ae1/Impact-of-an-Educational-program-on-Teachers-Knowledge-Toward-Chickenpox-Prevention-at-Primary-Schools-in-Al-Najaf-Governorate.pdf)
- Elsoud, M. S. A., Ahmed, H. A. H., Ahmed, A. M. A. W., & Farg, H. K. (2018). *Training on First Aid for Teachers of Primary Schools At Ismailia City*. <https://www.academia.edu/download/57384102/D0705012838.pdf>
- Endale, D., Hailu, D., & Bekelcho, T. (2024). *First aid knowledge, attitude, practice, and associated factors among primary school teachers in Jimma Town, South West Ethiopia, 2023*.
- Farhood, S. J., & Hattab, W. A. A. (2024). Effectiveness of Educational Program on Teachers' Knowledge about First Aid in Primary School. *Journal of Current Medical Research and Opinion*, 7(07), 3283-3293. <https://cmro.in/index.php/jcmro/article/download/902/952/2818>
- Ghyadh, A. A., & Al-Jourani, R. K. (2021). Study of relationship between Primary Schools Teachers' Knowledge and their socio demographic characteristics about First Aids in Al-Najaf City. *Kufa Journal for Nursing Sciences*, 11(2), 79-85. <https://doi.org/10.36321/kjns.vi20212.2033>
- Hasan, S. S., Saeed, A. A., & Mustafa, I. H. (2016). Knowledge and Attitude of Primary School Teachers Regarding Choking's First Aid In Erbil City-Kurdistan Region-Iraq. *The Malaysian Journal of Nursing (MJN)*, 8(2), 36-42. <https://ejournal.lucp.net/index.php/mjn/article/view/521>
- Hosapatna, M., Bhat, N., Belle, J., Priyadarshini, S., & Ankolekar, V. H. (2019). Knowledge and training of primary school teachers in first aid-a questionnaire based study. *The Kurume medical journal*, 66(2), 101-106. <https://doi.org/10.2739/kurumemedj.MS662001>
- Hrušková, M., Shonová, K., Ondřichová, L., & Čermáková, A. (2022). First Aid In Education. *AD ALTA: Journal of Interdisciplinary Research*, 12(2). <https://doi.org/10.33543/12026570>
- Nazaralian, Z., & Seyyed Aghaei, Z. S. P. (2025). Modeling Teacher-Student Relationships: The Role of Teacher Attachment and Self-Efficacy. *International Journal of Body, Mind & Culture*, 12(3), 174-189. <https://doi.org/10.61838/ijbmc.v12i3.878>
- Neyişci, N. (2024). Emergency Response Competencies Strengthened by Sustainable Education: First Aid Training Program for Teachers. *Sustainability*, 16(18), 8166. <https://doi.org/10.3390/su16188166>
- Qawala, S., Mousa, M., & Gida, N. I. M. (2021). Effectiveness of First Aid Training Program Package on Teacher Performance at Secondary Industrial Technical Schools. *International Journal of Innovation, Creativity and Change*, 15(4), 306-327. [https://www.ijicc.net/images/Vol\\_15/Iss\\_4/15419\\_Qalawa\\_2021\\_E1\\_R.pdf](https://www.ijicc.net/images/Vol_15/Iss_4/15419_Qalawa_2021_E1_R.pdf)
- Subramanian, G. (2024). Effect of Planned Teaching Programme on Knowledge of School Teachers regarding First Aid Management in Selected Schools of Kanniyakumari District. *Chinese Traditional Medicine Journal*, 7(6), 8-14. <https://traditionalmedicinejournals.net/index.php/ctmj/article/view/165>