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## Effectiveness of a Training Program on Kindergarten Teachers' Knowledge, Attitude, and Practice Regarding First Aid in Sulaimani City

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#### Abstract

**Background:** First aid is crucial in providing immediate care to ill or injured individuals. Kindergarten teachers are often the first responders in schools and thus need adequate knowledge, attitude, and practice in first aid.

**Objective:** This study aimed to evaluate the effectiveness of a training program on the knowledge, attitude, and practice of kindergarten teachers regarding first aid in Sulaimani City, Iraq.

**Methods:** A quasi-experimental design with a pre-posttest approach was used. A sample of 102 kindergarten teachers from 51 kindergartens participated in the study. Data were collected using a self-administered questionnaire and an observational checklist.

**Results:** The training program has demonstrated a significant and positive impact on the teachers' knowledge and practice regarding first aid ( $p < 0.001$ ), providing reassurance of its effectiveness.

**Conclusion:** The training program effectively enhanced the first aid capabilities of kindergarten teachers. However, ongoing training and refreshment courses are urgent and crucial to maintaining and further improving first aid skills among kindergarten teachers.

**What is already known about the topic?** Kindergarten teachers often lack adequate first aid knowledge, but training programs have been shown to improve their skills and response to emergencies, making schools safer for children.

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## **Introduction**

First aid is essential to emergency care, offering immediate assistance to individuals suffering from a sudden illness or injury until complete medical treatment is available. The primary goals of first aid are to preserve life, prevent further harm, and promote recovery (American et al., 2022). In school settings, where young children are prone to accidents and injuries, the role of kindergarten teachers in administering first aid is critical. Kindergarten teachers are often the first responders in such emergencies, and their ability to provide appropriate care can significantly impact the outcome of an injury or illness (Olympia et al., 2010).

In many developing countries, including Iraq, there is a lack of formal first aid training among school staff, particularly in kindergartens, where children are more vulnerable due to their age and developmental stage (Ganfure et al., 2018). Children are prone to accidents such as falls, cuts, and burns, which require immediate and appropriate intervention to prevent complications (Kumar et al., 2013). Unfortunately, studies have shown that many teachers lack the necessary knowledge and skills to provide effective first aid, leading to increased risks for the children under their care (Hırça, 2012; Ali et al., 2010).

In Sulaimani City, Iraq, the need for improving first aid knowledge and practice among kindergarten teachers is exceptionally pressing. Previous studies have highlighted gaps in first aid knowledge among schoolteachers in the region, with many teachers unaware of basic first aid procedures such as cardiopulmonary resuscitation (CPR), management of bleeding, and treatment of burns (Hussein, 2023). These gaps can lead to delays in providing necessary

care, potentially worsening the outcomes for injured children.

This study aims to evaluate the effectiveness of a structured training program designed to improve the knowledge, attitude, and practice of kindergarten teachers in Sulaimani City regarding first aid. By assessing the impact of this training program, the study seeks to contribute to developing more effective first-aid education programs in schools, ultimately improving the safety and well-being of children in kindergarten settings.

## **Methodology**

### **Research Design**

A quasi-experimental research design with a pre-posttest approach was employed to evaluate the effectiveness of the first aid training program. This design was chosen to allow for the measurement of changes in knowledge, attitude, and practice among kindergarten teachers before and after the intervention.

### **Setting and Participants**

The study was conducted in Sulaimani City, in Iraq's Kurdistan region. The participants included 102 kindergarten teachers from 51 governmental kindergartens across the city. The kindergartens were selected based on geographical distribution to ensure a representative sample. Participants were chosen using a non-probability convenient sampling technique. Inclusion criteria for the study were: teachers who had direct contact with children, were available during the study period, and were willing to participate. Teachers on annual leave or unable to participate during the data collection period were excluded.

### **Data Collection Tools**

Two primary tools were used for data collection: a self-administered

questionnaire and an observational checklist.

1. **Self-Administered Questionnaire:** This tool assessed the teachers' knowledge and attitudes regarding first aid. The questionnaire consisted of three parts:
  - **Part 1:** Personal and demographic information, including age, gender, educational qualifications, years of experience, and previous first aid training.
  - **Part 2:** A knowledge assessment covering topics such as CPR, management of bleeding, burns, fractures, choking, and epistaxis.
  - **Part 3:** An attitude assessment, using a Likert scale, measuring the teachers' perspectives on the importance of first aid and their confidence in administering it.
2. **Observational Checklist:** This checklist was used to assess the practical skills of the teachers in administering first aid. It included 37 items covering various first aid procedures such as CPR, recovery position, bleeding management, and burns treatment.

### **Training Program**

The training program was developed based on a review of existing literature and best practices in first aid training. The program was conducted over nine sessions, each lasting for three hours. The sessions were held at the Sulaimani Health Development and Training Center.

1. **Session 1:** Introduction to first aid, first aid principles (Danger, Response, Send for help, Airway, Breathing, CPR), and CPR demonstration.
2. **Session 2:** Practical training on CPR, choking management, bleeding control, and epistaxis management.

3. **Session 3:** Training on managing burns, fractures, and scorpion stings, followed by a post-test evaluation.

The training was delivered using a combination of lectures, practical demonstrations, role-playing, and multimedia presentations to ensure comprehensive understanding and engagement.

### **Data Analysis**

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize the data, including frequencies, percentages, means, and standard deviations. Inferential statistics, such as the paired t-test, were employed to assess the effectiveness of the training program by comparing pre- and post-test scores. A chi-square test was also used to explore the association between demographic variables and post-test scores. A p-value of  $<0.001$  was considered statistically significant.

### **Results**

The study's results demonstrated a significant improvement in kindergarten teachers' knowledge, attitude, and practice following the training program.

### **Demographic Characteristics**

The participants were predominantly female (85%), with an average age of 32 years. Most teachers had a bachelor's degree (60%) and worked in kindergartens for an average of 8 years. Only 30% of the participants had received first-aid training before the study.

### **Knowledge Improvement**

The mean knowledge score increased significantly from 7.2 pre-test to 11.3 post-test ( $p < 0.001$ ), indicating a substantial improvement in the participants' understanding of first aid concepts.

### **Practice Enhancement**

Similarly, the mean practice score dramatically increased from 7.99 to 64.11

post-training ( $p < 0.001$ ). This improvement was observed across all areas of first aid practice, including CPR, bleeding control, and burn management.

#### **Attitude Shift**

The attitude scores also improved, with the mean score rising from 5.3 pre-test to 8.9 post-test ( $p < 0.001$ ). This shift indicates a more positive attitude towards the importance of first aid and the teachers' confidence in their ability to provide it.

**Table 1: Pre and Post-Training Knowledge Scores**

| Measure         | Pre-test Mean | Post-test Mean | p-value |
|-----------------|---------------|----------------|---------|
| Knowledge Score | 7.2           | 11.3           | <0.001  |

**Table 2: Pre- and Post-Training Practice Scores**

| Measure        | Pre-test Mean | Post-test Mean | p-value |
|----------------|---------------|----------------|---------|
| Practice Score | 7.99          | 64.11          | <0.001  |

**Table 3: Attitude Changes Pre- and Post-Training**

| Measure        | Pre-test Mean | Post-test Mean | p-value |
|----------------|---------------|----------------|---------|
| Attitude Score | 5.3           | 8.9            | <0.001  |

#### **Discussion**

The findings of this study highlight the effectiveness of a structured first-aid training program in improving the knowledge, attitude, and practice of kindergarten teachers in Sulaimani City. The significant improvements observed in both knowledge and practical skills underscore the importance of such training programs in enhancing the safety and well-being of children in school settings.

The increase in knowledge scores from 7.2 to 11.3 suggests that the training program successfully filled gaps in the teachers' understanding of first-aid

procedures, consistent with findings from similar studies in other regions (Hırça, 2012; Ali et al., 2010). The dramatic improvement in practice scores further indicates that the hands-on, practical approach of the training was effective in equipping teachers with the necessary skills to respond to emergencies.

The positive shift in attitude scores reflects a greater confidence among teachers in their ability to administer first aid, which is crucial for ensuring timely and effective responses to emergencies. This finding aligns with previous research that emphasizes the role of confidence in improving first-aid delivery (American et al., 2022; Olympia et al., 2010).

Moreover, the results suggest that first aid training should be a mandatory component of teacher education programs, particularly for those working in kindergartens. Regular refresher courses and ongoing professional development are also recommended to ensure that teachers' skills remain up-to-date and are prepared to handle emergencies effectively (Wyckoff et al., 2022; Singh et al., 2015).

#### **Conclusion**

This study concludes that a structured first-aid training program significantly improves kindergarten teachers' knowledge, attitude, and practice in Sulaimani City. These findings highlight the critical need for such training programs to enhance the safety and well-being of children in school settings.

#### **Recommendations**

1. **Regular Training:** Continuous professional development programs should be established to keep the teachers' first aid skills current.
2. **Incorporation into Curriculum:** First aid training should be integrated into the teacher education curriculum.

3. **Periodic Assessments:** Regular assessments and refresher courses should be conducted to reinforce the knowledge and skills acquired.

#### **Ethical considerations**

Ethical approval for this study was obtained from the Ethical Committee of the College of Nursing at the University of Sulaimani, with additional permissions secured from the General Directorate of Education in Sulaimani City. Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose, voluntary nature, and their right to withdraw at any time. The confidentiality and anonymity of participants were rigorously maintained, with personal data anonymized and securely stored. The study was designed to avoid any harm, emphasizing the benefits of improved first-aid knowledge and practice among teachers. Participants were treated with respect throughout the research process, and the data collected was used exclusively for the study's objectives, ensuring ethical integrity in all aspects of the research.

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#### **Conflict of Interest**

The author declares no conflict of interest in the publication of this article.

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