

## Training Program to Develop Teacher's Awareness about Safety and Injury Prevention in Kindergartens

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**Abstract:** The primary role of kindergarten teacher is to keep children safe and healthy. The aim of the present work was to improve awareness of teachers about safety and injury prevention in kindergartens through training program. The study was conducted through pre-post test design during summer training of kindergarten teachers in kindergarten college. The total sample of the study was 682 teachers. The sample was subjected to the followings: a- questionnaire to evaluate the awareness of teachers about safety (before and after the program). b- training program about safety including lectures, data show, field visits and workshops. Result of the study revealed significant improvement in the teacher's awareness about safety after the training program and that there was a highly significant improvement in knowledge after the intervention program.

### INTRODUCTION

Young children deserve to live and play in safe environments, and it is the responsibility of every adult to help keep children safe. Preschool children should not be expected to actively protect themselves.<sup>(1)</sup>

The main step in health a promotion planning is the identification of health problem that is serious and prevalent

enough to justify spending time, money and other resources on developing and implementing an intervention. Injuries constitute a major public health problem. Childhood injury remains among the main leading causes for childhood morbidity and mortality. Such injuries result in significant human and social costs, with both short and long term consequence ranging from

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interruptions in school/ sports activities to significant cognitive and behavior disorders, depression, and deterioration of family functioning, physical morbidity, and sometimes death.<sup>(1-6)</sup>

In industrialized countries injuries are the leading cause of death in childhood, accounting for 40% of all child deaths between the ages of one and 14 years.<sup>(7)</sup> In the UK more than 350 children die from an injury, more than 119,000 are admitted to hospital and almost two million attend emergency departments each year following injury.<sup>(8-10)</sup> In Egypt although there is a reduction in the mortality rate in general, mortality due to accidents has raised. Among children 1-5 years old and constitute account for 19.5% of all deaths. Injuries are the second cause of death.<sup>(11)</sup> However, researchers have long advocated that as much as 90% of injuries could be prevented through coordinated and effective education and enforcement strategies.<sup>(12)</sup>

Creating a safe environment is a must for preschool children. These children often can't make sound safety adjustment. Young children may not understand the reasons for being careful. Thus, it is urgent that adults do all they can to keep the environment safe for children. In such an environment, accidents are reduced while children can play without too much concern for safety.<sup>(13)</sup>

Preschool injuries are influenced, however, not only by the physical safety of the environment, but by the socioemotional quality of the child care centers, as well. The socioemotional environments is affected by child care staffing standards, such as adult/ child ratios, staff stability, and staff educational level. Low adult/ child ratios affect the supervising staff's ability to prevent injuries by intervening before they occur, teaching conflict resolution skills, and encouraging cooperative, nonviolent play.<sup>(12)</sup> Injury prevention is an integral part of quality kindergarten programs.

National standards relating to injury prevention have been published by the American Public Health association and the American Academy of Pediatrics. The majority of these standards are preventive in nature and stress on injury prevention in the development of policies and procedures and in implementation of daily practices in child care programs. Although it may not be possible to prevent all injuries in child-care settings, it is important for teachers, parents and health professionals to identify the potential hazards in the kindergarten environments. Once these hazards are identified preventive connective action directed toward both environmental modifications and individual behaviors can be promoted to keep the incidence of injuries as low as possible.<sup>(14)</sup>

#### **The aim of the present work:**

The aim of the present work was to develop the teachers awareness about the safety and prevention of injuries in kindergartens.

## **Subjects and methods**

### **Study setting and sampling**

The study was conducted through pre-post test design during summer training of kindergarten teachers in kindergarten college. The total sample of the study was 682 teachers.

### **Data collection methods:**

The study was carried out in the following three phases: preintervention phase, intervention phase and post intervention phase.

#### ***First phase***

The following tools were used: A pre designed structured interviewing questionnaire was used to collect the following data from the teachers.

- Age, job stability, teacher/child ratio ,type of education, years of experience

#### ***2- A questionnaire to evaluate the teacher awareness about child's injury:***

- Growth and development in preschool children

- Why are preschool children more susceptible to injuries
- Risk factors of injuries
- Role of teacher education in injury prevention
- Role of teacher/child ratio in injury prevention

- 3. Safety light .
- 4. Safety of windows.
- 5. Safety toys.
- 6. Safety tools.

**3- Questionnaire to evaluate the awareness of the teachers about safety measures inside the classrooms, include the following:**

- 1. Safety arrangement of furniture.
- 2. Safety of the floor.

**4- A questionnaire to evaluate the awareness of teachers about safety measures outside the classroom included**

**the following:**

- a. Place of the kindergarten.
- b. Building of the kindergarten.
- c. Safety in the garden.
- d. Safety in the bus.
- e. Safety of bathroom

	<b>Educational objectives</b>	<b>Learning methods</b>
Session I	By the end of this session the participants should be able to <ul style="list-style-type: none"> <li>- List the character of preschool child.</li> <li>- Reorganize causes of injuries of preschool children</li> <li>- Identify the main factors affecting injuries</li> <li>- Identify the role of teacher's education, job stability and child/staff ratio in injury prevention.</li> </ul>	<ul style="list-style-type: none"> <li>• lecture</li> <li>• clinical visit</li> <li>• video</li> <li>• work shop</li> </ul>
Session II	Mention the main items of safety outside the kindergarten	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Brain storming</li> <li>• Data show</li> </ul>
Session III	Mention the main items of safety inside the kindergarten	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Brain storming</li> <li>• Data show</li> </ul>

Only one (true, false and don't know) answer was required. A score of zero was given to wrong or don't know answers and a score of one was given to right answer.

### **Second phase (intervention phase)**

The sample of the study was divided into groups. Each group was involved in a training program 3 times/ week. The durations of the program was 2 months in the kindergarten college.

### **The objectives of the program**

1. Enrich general knowledge of kindergarten teacher about the nature of the preschool children, causes of injuries and methods of injury prevention.
2. Increase teacher awareness about safety inside and outside the kindergarten.

One the objectives of the programs were settled, the plan of the program was

**Educational methods** Included lectures, videos, group discussion, clinical visits, brain storming, data show, work shop and handouts.

### **Third phase (post intervention phase)**

Evaluation of the impact of the developed intervention program was done through a post-test structured interview questionnaire.

### **Statistical analysis**

The information were tabulated and statistical analysis were done by using McNemar test where ( $p =$  level of significant  $<0.001$ ).

### **Results**

#### **Sample characteristics.**

Table 1 shows some demographic features of the sample. As regard the age, 40.32% of teachers were between 20<25 years old, 37.00% were between 25<30 years and 22.58% were 30 years or above. 64.51% of the sample were found to have stable job. As regard the teacher/child ratio 91.1% was more than 1:20 for the sample. In addition 60.70% of teachers had experience less than 5 years. The educational level of 71.85%. of teachers was university level.

***The impact of intervention program:***

Table 2 shows the percent of correct answers about safety and injury prevention before and after the program.

There was a highly significant improvement in all knowledge items of the intervention group from pre to post test. The highest percentage of change towards the correct answer between the pre and post test were (62.90%, 61.29%, 40.32%) these were reported for the role of teacher education in injury prevention, risk factors of injuries and role of teacher/ child ratio in injury prevention respectively. On the other hand the lowest percentage of change towards the correct answer (22.58%) was reported for the reasons the preschool children were more susceptible to injuries.

Table (3) shows the distribution of the studied sample according to the awareness of teachers about safety outside the classroom before and after the program. There was high significant improvement in

all aspects of teacher's safety awareness outside the classroom. The highest percentage of change toward correct answer between pre and post test was reported for bus safety, bathroom safety, and place safety (67.7%, 66.1% 56.4%) respectively while the lowest percent of change to correct answer (35.4%) was reported for garden safety.

Table (4) shows the distribution of the studied sample according to the awareness of teachers about safety inside the classroom, before and after the program. There was high significant improvement in all aspects of teacher's safety awareness outside the classroom. The highest percentage of change towards the correct answer between pre and post test (56.4%, 53.2% and 46.8) were reported for tools safety, light safety, and toys safety respectively while the lowest percentage of change towards correct answer (25.8%) was reported for arrangement safety formulated as regard the number of sessions, educational objective and learning methods for each session.

Table (1): Distribution of the studied sample according to demographic features.

Demographic features	Sample n= 682	%
<b>Age</b>		
- 20-	275	40.32
- 25-	253	37.00
- 30+	154	22.58
<b>Job stability</b>		
- Stable	440	64.51
- Unstable	242	35.49
<b>Teacher/child ratio</b>		
- Less than 1: 20	61	8.9
- More than 1: 20	621	91.1
<b>Experience</b>		
- Less than 5 years	414	60.70
- More than 5 years	268	39.3
<b>Education level</b>		
- Post graduate	178	26.0
- University	490	71.85
- Secondary	14	2.15

Table (2): Distribution of the studied sample according to percentage of correct answers of teachers about safety before and after the program.

Areas of knowledge	Pretest		Post test		Percentage of change	McNemar test
	Right answer	%	Right answer	%	%	
- Growth and development in preschool children	462	67.74	660	96.77	29.3	16.056*
- Why are preschool children more susceptible o injuries	495	72.58	649	95.16	22.58	12.071*
- Risk factors of injures	231	33.87	649	95.16	61.29	36.026*
- Role of teacher education in injury prevention	220	32.26	649	95.16	62.90	37.026*
- Role of teacher/child ratio in injury prevention	275	40.32	605	88.71	40.32	28.033*

\* Significant at  $p < 0.001$

**Table (3): Distribution of the studied sample according to awareness of teachers about safety outside the classroom before and after the program.**

Point of comparison	Pre test		Post test		Percentage of change	McNemar test
	Right answer		Right answer			
	No.	%	No.	%	%	
Safety of building	330	48.4	649	95.2	46.8	27.035*
Safety of place	220	32.3	605	88.7	56.4	33.029*
Safety of garden	352	51.6	594	87.0	35.4	20.046*
Safety of bus	165	24.2	627	91.9	67.7	40.024*
Safety of bathroom	176	25.8	627	91.9	66.1	39.024*

\* Significant at  $p < 0.001$

**Table (4): Distribution of the studied sample according to awareness of teachers about safety inside the classroom before and after the program.**

Point of comparison	Pre test		Post test		Percentage of change	McNemar test
	Right answer		Right answer			
	No.	%	No.	%	%	
Safety of arrangement	429	62.9	605	88.7	25.8	14.063*
Safety of toys	275	40.3	594	87.1	46.8	27.034*
Safety of floor	279	40.3	583	85.5	45.2	26.036*
Safety of windows	374	54.8	594	87.1	32.3	18.050*
Safety of light	231	33.9	594	87.1	53.2	31.030*
Safety of tools	220	32.3	605	88.7	56.4	33.029*

\* Significant at  $p < 0.001$

## Discussion

The primary goal as a kindergarten teacher is to keep children safe and healthy. Creating a safe healthy environment requires careful planning and

preparation. Although injuries in preschools occur less frequently than injuries in home care, they are important because of the opportunities for prevention. When parents leave their child in a day-care centre they



expect high standards of health and safety.<sup>(13)</sup>

Our study revealed significant improvement in general knowledge about safety in kindergarten teacher after the program. Preschool children are poorly equipped to deal with dangerous situations. Their physiological limitations in terms of motor and sensory development, reactions capacity and experience, all make them particularly susceptible to injuries.<sup>(15)</sup> Moreover, their need to explore, to experiment and to imitate as well as the young child's mind has a single focal orientation.<sup>(16,17)</sup> So preschool children are more susceptible to injuries. Also the risk factors for injuries among preschool children such as under controlled temperament and inadequate supervision have been identified in the intervention program. Eberl et al., (2009) identified the same risk factors for injuries and stated that childhood injuries in daycare centers should be an ongoing public health priority.<sup>(18)</sup>

The program concluded that teachers/child ratio has an impact on injury prevention. This ratio is in concordance with the recommendations of the National Child Care Information Centers (NCCIC) which published the "child care centers licensing regulations of the USA. These regulations allows a maximum child to staff ratio 20:1 in children aged from 3 to 6 years.<sup>(19)</sup> Sellstrom and Bremberg (2000) showed that incidence of injury increases with decreasing staff-to-child ratio.<sup>(20)</sup> The intervention program focus on staff stability and education. Abbey and his colleagues (2000)<sup>(12)</sup> stated that stable staff provides closer, trusting teacher-child relationships. Higher education standards for child care teachers (for example, teachers with college degrees), would improve the quality of teacher-child interactions, support a developmentally appropriate curriculum, and likely encourage more gender neutral play.<sup>(12)</sup>

Our study revealed significant improvement in teacher awareness about safety inside and outside the kindergarten after the program. Herr (1994) stated that dangers can be found everywhere in kindergarten. Electrical outlets, chaining supplies, wood working tools, outdoor climbing equipment and cooking tools can all cause injuries. Staff members must closely watch for and remove these dangers. Failure to do so may result in accidents. Most of these accidents can be avoided. The early childhood teacher must be alert to any dangers that threaten the safety of the children. In addition the centre must have safety rules and procedures. The staff must be aware of their legal responsibilities for protection of children in their care.<sup>(13)</sup>

In recent decades, the percentage of children enrolled in preschool programs has increased significantly. Ruth (2003)<sup>(21)</sup> revealed that, there is an increase awareness of the more critical role in

providing a safe and healthy environment for the children who will occupy these buildings. Therefore it is critical for those who design child-care facilities, as well as for those who are working with children to understand the environmental factors that have an impact on preschools.<sup>(22)</sup>

Sellestrom and Bremberg (2000)<sup>(20)</sup> concluded that in order to promote safety in day-care settings, an on-going plan for continued staff education in child safety should be a matter of routine. The introduction of such a plan should be the concern of the individual day-care directors and managers at the local and national level and health professionals working in this field.<sup>(20)</sup>

Bruce and Mcgrath (2005) stated that engaging community partners including teachers and parents who influence relationships and outcomes could provide opportunity for more rigorous, comprehensive, and integrated approach to longitudinal research that could identify

key factors of successful strategies for injury prevention.<sup>(23)</sup>

Eberal et al (2009) in analysis of 347 kindergarten related injuries concluded the necessity of a continuous child's safety training program that involves the participation of all teachers in day care centers.<sup>(18)</sup> Our results indicated the necessity of a continuous child safety training program that emphasizes on the participation of all teachers activity working at childcare centers.

### Recommendations

The keynote of prevention of injuries is safety education. If injury will be a disease, education is its vaccine. So, safety education is an essential strategy to make public aware of injuries' hazards and the means of avoiding them aims at influencing behaviour through reasoning and knowledge.

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