# Knowledge and Attitude of Caregivers Regarding Accident Prevention Among Disabled School Children in Minia Governorate. 

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#### Abstract

: Prevention of accidents among disabled children is particularly important, because injuries suffered by these children tend to be more severe. There is an urgent need to address injury prevention and to improve safety standards for this group. This study aimed to assess knowledge and attitude of caregivers regarding accident prevention among disabled school children in Minia Governorate. Descriptive cross sectional research design was used. This study was conducted at the schools of disabled children in Minia city that serve Minia Governorate, which were Al-Fikria School, Al -Nour School and Al-Amal school. The current study included total coverage sample composed of all caregivers in these schools. Two tools were used included a structured interview questionnaire and attitude rating scale. There were statistically significant differences among caregiver's age, sex, level of education and first aid training in relation to their total score of knowledge about accident prevention. Also there were statistically significant differences among caregiver's education and first aid training in relation to their total score of attitude about accident prevention. The study concluded that more than one fifth of caregivers had poor knowledge, and less than one quarter of them had negative attitude about accident prevention. It recommended that providing preventive, first aid and emergency services related to injury prevention.


Key words: accident, unintentional injury, accident prevention and disability.

## Introduction:

More than one billion people in the world live with some form of disability, of who nearly 200 million experience considerable difficulties in functioning. In the years ahead, disability will be an even greater concern because its prevalence is on the rise, (WHO, 2011).

Children with disabilities had a significantly increased risk for injury. It is estimated that $10 \%$ of children globally suffer from some kind of disability, and most of whom live in low- and middle-income countries. Children with disabilities had a significantly increased risk for injury. Interventions to prevent residential injury are an important public health priority in children with disabilities (Zhu et al., 2012).
Disability refers to any impairments, activity limitations, or participation restrictions, or "the outcome or result of a complex relationship between an individual's health condition and personal factors, and of the external factors that represent the circumstances in which the individual lives" (Peterson, 2011).
In the United States, over 9 million children aged less than 18 years have a chronic physical, behavioral, emotional, or developmental disability. Children with disabilities such as autism, attention-deficit disorder/attention-deficit/hyper-activity disorder, or chronic medical conditions are 2 to 3 times more
likely to experience a medically attended injury thanchildren without these disabilities (Lee et al., 2008).

Children are inherently more vulnerable to environmental hazards because their bodies are still developing. Substandard environmental conditions in schools, such as insufficient cleaning or inadequate ventilation, can cause serious health problems for children (Fekaris et al., 2012).
In USA, it is estimated that more than 3.7 million children and adolescents are injured at school each year. Injuries at school constitute $10-25 \%$ of all child and adolescent injuries (Kanchan et al., 2009). Approximately 1 in 400 injury-related fatalities among children aged 5 to 19 years occur at school (Barrios, et al 2007).
Unintentional injuries historically referred to as accidents, an injury that is judged to have occurred without anyone intending that harm be done (WHO, 2013). Also, refers to any injury that results from unintended exposure to physical agents, including heat, mechanical energy, chemicals, or electricity (Allender et al., 2009).
The school nurse has an unique role in provision of school health services for children with special health needs, including children with chronic illnesses and disabilities of various degrees of severity (Jones, 2008). Additionally, the school nurse is a vital member of the school team that leads change to
advance health and collaborates with school staff members, parents and Community Members to keep students safe at school and healthy to learn (Board and Bushmiaer , 2011).

## Significance of the problem:

Injuries are important health problem among school children in Egypt. They were the cause of significant morbidity and disability, cause of school absence, and has significant burden on health facilities in Egypt (El-Sayed et al., 2012).
In Egypt, "a disabled person" means a person who need rehabilitation service to meet the basic needs in society because impairment such as movementrelated function, sensory function and mental function brings physical, social, economical and psychological disability (Eldeeb et al., 2012).
Caregivers' knowledge, attitude and practice are relevant variables and are considered important factors in planning an educational program for accidents prevention so many accidents could be less serious if they know what to do as soon as they occur
(Sobhy et al., 2011).

## Aim of the study:

Assess caregivers' knowledge and attitude about accident prevention among disabled school children in Minia Governorate, 2013.

## Research questions:

1. What are types of injuries that occur inside school? What are caregivers' knowledge about definition and types of accidents that occur inside school?
2. Are there significance difference between caregivers' knowledge about accident prevention among disabled school children and their personal characteristics?
3. Is there any significance difference between caregivers' attitude toward accident prevention among disabled school children and their personal characteristics?

## Subjects and methods:

## Research design:

A descriptive cross-section research design was used in this study.

## Setting of the study:

The study was conducted in schools for disabled children in Minia city that serve Minia Governorate, which were:

1. Al-Fikria School: that serves mentally retarded pupils aged from 6 to 18 years. These pupils have intelligence quotient (IQ) from 50 to $75 \%$ (mild mental retardation).
2. Al- Nour School: that serves blind pupils aged from 6 to 18 years, with visual acuity $6 / 60$ or less and IQ not less than $75 \%$.
3. Al-Amal school: that serves pupils with hearing and communication impairment aged from 6 to 18 years and IQ not less than $75 \%$.

## Sample:

The subjects of the study was included total coverage sample composed of all caregivers for disabled children in the three previous schools included school teachers, social workers, psychologists, food services staff (Nutrition Specialist), security men, night supervisors and school workers.
This sample is demonstrated in the following table:

| School name | \% |  |  |  | $\begin{aligned} & \text { eg } \\ & \text { üb } \\ & 0 \end{aligned}$ |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Al-Amal | 57 | 2 | 4 | 3 | 12 | 0 | 2 | 80 | 40.0 |
| Al-Nour | 36 | 2 | 6 | 2 | 11 | 2 | 1 | 60 | 30.0 |
| Al-Fekreia | 36 | 1 | 2 | 1 | 16 | 2 | 2 | 60 | 30.0 |
| Total | 129 | 5 | 12 | 6 | 39 | 4 | 5 | 200 | 100.0 |

Tools and technique of data collection:
Tool (1): Structured interview questionnaire:
Data were collected through using an interview questionnaire sheet to assess caregivers' knowledge regarding accident prevention among disabled children. It included the following parts:
Part I: It composed of questions related to personal characteristics of caregivers (as age, sex, level of education, occupation and years of experience).
Part II: It included questions related to caregiver's knowledge about accidents such as definition, types, causes, and prevention of each type of accidents.
Part III: Included questions concerned with previous first aid training and caregivers' knowledge about first aid measures such as wounds, fractures, burns ... etc.
Scoring system, for each item, a correct response was scored one (1) and the incorrect scored (zero). For each area, the scores of the items were summed up and the total divided by the number of the items, giving a mean score of the part. These scores were converted into a percent score. Knowledge was considered poor if less than $50 \%$, fair if the percent score was ( $50 \%-70 \%$ ) and good if more than $70 \%$

## (Ramiz, 2009).

## Tool (2): Attitude rating Scale:

A modified likert scale was used to assess caregiver's attitude regarding prevention of accident among disabled children. It consisted of 29 statements. The possible responses were on a three point scale:"agree ","not sure", and "disagree".
Scoring system for each item, the responses "agree ","not sure", and "disagree" were respectively scored 3,2 and 1 . The scoring was reversed for negative statements. The scores of the items were summed up and the total divided by the number of the items, giving a mean score of the part. These scores were converted into a percent score. The attitude was considered positive if the percent score was $60 \%$ or more, and negative if less than 60\% (Ramiz, 2009).

Content validity test: to ensure the validity of this tool, it checked and revised by panel of three experts from nursing staff who reviewed the instrument for clarity, relevance, comprehensiveness, understanding and applicability.

## Methodology:

I- Administrative design
An official letter of the study approval was obtained from the dean of the Faculty of Nursing at Minia University to the chairmen of the previously mentioned three different setting; this letter was included a brief explanation of the objectives of the study and permission was requested from each chairman to carry out the study.

## II- Ethical consideration:

The purpose of this study was explained for every interviewed participant. An oral informed consent was obtained from each caregiver who agrees to participate in the study. Confidentiality of the collected information was respected.

## III-Field work:

The actual fieldwork started from March 2013 and ended at the end of June 2013.The researchers attended in the study settings two days per week (Saturday and Monday). The researchers were met with caregivers, explained the purpose of the study, and asked for participation. The researchers started a face to face individual interview with caregivers; each interview took about 20-40 minutes. Throughout this interview relevant information was recorded in the designed sheet (about 8 sheets per day).

## IV-Pilot study:

Pilot study was carried out before starting data collection on 20 caregivers of total sample who were excluded. The aim of this pilot study was to test the clarity of the tools and to estimate the appropriate time required to fill the questionnaire. Based on the result of the pilot study, the necessary modifications in the sheets were done.

## V- Statistical design:

The collected data were reviewed, prepared for computer entry, coded, categorized, analyzed, and tabulated. Descriptive statistics (i.e., frequencies, percentages, mean and standard deviation were done using SPSS version 16. Chi-square and Pearson correlation tests were used to investigate the presence of a statistical significance with ranked variables. Statistical significance was considered at p -value were less than 0.05 ( $\mathrm{p}<0.05$ ).

Table (1): Distribution of caregivers according to their personal characteristics in Minia Governorate, 2013.

| Variables | No. ( $\mathrm{n}=200$ ) | \% |
| :---: | :---: | :---: |
| Age: |  |  |
| < 35 years | 45 | 22.5 |
| 35- | 92 | 46.0 |
| $\geq 45$ years | 63 | 31.5 |
| Mean $\pm$ SD | $40.83 \pm 7.87$ |  |
| Sex: |  |  |
| Male | 93 | 46.5 |
| Female | 107 | 53.5 |
| Level of education: |  |  |
| Illiterate | 13 | 6.5 |
| Read \& write | 9 | 4.5 |
| Primary | 6 | 3.0 |
| Preparatory | 10 | 5.0 |
| Secondary | 52 | 26.0 |
| University | 110 | 55.0 |
| Occupation: |  |  |
| Teacher | 129 | 64.5 |
| Hygiene workers(cleaners) | 39 | 19.5 |
| Social worker | 12 | 6.0 |
| Security man | 5 | 2.5 |
| Psychologist | 5 | 2.5 |
| Nutrition Specialist | 6 | 3.0 |
| Night supervisor | 4 | 2.0 |
| Years of experience: |  |  |
| < 10 years | 56 | 28.0 |
| 10-<20 years | 69 | 34.5 |
| $\geq 20$ years | 75 | 37.5 |
| Mean $\pm$ SD | $15.64 \pm 8.43$ |  |

Table (2) : Occurrence of accident among disabled school children as perceived by caregivers in Minia Governorate, 2013.

| Variables | No. ( $\mathrm{n}=200$ ) | \% |
| :---: | :---: | :---: |
| Accident occurrence for a disabled child |  |  |
| Yes | 183 | 91.5 |
| No | 17 | 8.5 |
| Causes of accident occurrence:\# ( $\mathrm{n}=183$ ) |  |  |
| Impairment of senses as hearing, vision, movement or cognitive function | 154 | 84.2 |
| Inattention to recognize the risks | 107 | 58.5 |
| behaviors as aggressiveness, low adaptability and impulsivity | 84 | 45.9 |
| Most frequent places for accidents: |  |  |
| Street | 137 | 68.5 |
| School | 49 | 24.5 |
| Home | 14 | 7.0 |
| Most places of injury inside the school:\# |  |  |
| Playground | 144 | 72.0 |
| Activity rooms | 56 | 28.0 |
| Internal residence | 33 | 16.5 |
| Laboratory | 10 | 5.0 |
| Stairways | 9 | 4.5 |
| Restaurant (Kitchen) | 9 | 4.5 |
| Classrooms | 3 | 1.5 |
| Types of accidents that occur to those children:\# |  |  |
| Motor car accidents | 168 | 84.0 |
| Fall | 159 | 79.5 |
| Fractures | 156 | 78.0 |
| Wounds(cuts, abrasions and contusions) | 133 | 66.5 |
| Fire (burn) | 106 | 53.0 |
| Electrical burn | 103 | 51.5 |
| Poisoning | 101 | 50.5 |
| Swallowing foreign bodies | 94 | 47.0 |
| Chocking | 89 | 44.5 |

N.B: '\#' more than one answer was selected

According to research question No. (1), Table (3): Distribution of caregivers' knowledge about definition and types of accidents among disabled children in Minia Governorate, 2013.

| Variables | No. (n= 200) | \% |
| :--- | :---: | :---: |
| Definition of accidents: | 171 | 85.5 |
| Correct | 29 | 14.5 |
| Incorrect |  |  |
| Types of accidents in classrooms:\# | 107 | 53.5 |
| Fall | 88 | 44.0 |
| Wounds (cuts-contusion- abrasions) | 42 | 21.0 |
| Fractures | 34 | 17.0 |
| Don't know |  |  |
| In playground:\# | 137 | 68.5 |
| Fractures | 108 | 54.0 |
| Wounds (contusion- abrasions) | 100 | 50.0 |
| Fall | 26 | 13.0 |
| Don't know |  |  |


| Variables | No. (n= 200) | \% |
| :--- | :---: | :---: |
| In kitchen:\# | 129 | 64.5 |
| Burns | 35 | 17.5 |
| Wounds (contusion- abrasions) | 30 | 15.0 |
| Food poisoning | 21 | 10.5 |
| Fall | 29 | 14.5 |
| Don't know |  |  |
| In laboratories:\# | 70 | 35.0 |
| Suffocation | 42 | 21.0 |
| Poisoning with chemicals | 28 | 14.0 |
| Burns | 117 | 58.5 |
| Don't know |  |  |
| In the internal residence :\# | 74 | 37.0 |
| Fall | 63 | 31.5 |
| Wounds (contusion- abrasions) | 57 | 28.5 |
| Burns | 45 | 22.5 |
| Chocking | 33 | 16.5 |
| Poisoning | 70 | 35.0 |
| Don't know | 70 |  |

N.B: '\#' more than one answer was selected

Figure (1): Total score of caregivers' knowledge about accident prevention among disabled school children in Minia Governorate, 2013.


According to research question No. (2), Table (4): the relation between total score of caregivers' knowledge about accident prevention among disabled school children and their personal characteristics and first aid training in Minia Governorate 2013.

| Socio-demographic characteristics | Level of knowledge |  |  |  |  |  | $\mathrm{X}^{\mathbf{2}}$ | $P$-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Poor } \\ (\mathrm{n}=82) \end{gathered}$ |  | $\begin{gathered} \text { Fair } \\ (\mathrm{n}=80) \end{gathered}$ |  | $\begin{gathered} \text { Good } \\ (\mathrm{n}=38) \end{gathered}$ |  |  |  |
|  | No. | \% | No. | \% | No. | \% |  |  |
| Age: |  |  |  |  |  |  | 32.83 | 0.000* |
| < 35 years | 26 | 57.8 | 19 | 42.2 | 0 | 0.0 |  |  |
| 35 - | 36 | 39.1 | 39 | 42.4 | 17 | 18.5 |  |  |
| $\geq 45$ years | 20 | 31.7 | 22 | 34.9 | 21 | 33.4 |  |  |
| Sex: |  |  |  |  |  |  | 7.78 | 0.020* |
| Male | 41 | 44.1 | 42 | 45.2 | 10 | 10.7 |  |  |
| Female | 41 | 38.3 | 38 | 35.5 | 28 | 26.2 |  |  |
| Level of education: |  |  |  |  |  |  | 60.30 | 0.000* |
| Illiterate/ read \& write | 20 | 90.9 | 2 | 9.1 | 0 | 0.0 |  |  |
| Basic education | 14 | 87.5 | 2 | 12.5 | 0 | 0.0 |  |  |
| Secondary | 11 | 21.2 | 20 | 38.5 | 21 | 40.4 |  |  |
| University | 37 | 33.6 | 56 | 50.9 | 17 | 15.5 |  |  |
| Years of experience: |  |  |  |  |  |  | 59.27 | 0.000* |
| $<10$ years | 39 | 69.6 | 17 | 30.4 | 0 | 0.0 |  |  |
| 10-<20years | 29 | 42.0 | 30 | 43.5 | 10 | 14.5 |  |  |
| $\geq 20$ years | 14 | 18.7 | 33 | 44.0 | 28 | 37.3 |  |  |
| First aids training: |  |  |  |  |  |  | 23.65 | 0.000* |
| Yes | 1 | 4.3 | 10 | 43.5 | 12 | 52.2 |  |  |
| No | 81 | 45.8 | 70 | 39.5 | 26 | 14.7 |  |  |

$\mathrm{X}^{2}$ means Chi-square test * Statistical significant difference ( $\mathrm{P}<0.05$ ).
According to research question No. (3), Table (5): The relation between total score of caregivers' attitude about accident prevention among disabled school children and their personal characteristics and first aid training in Minia Governorate, 2013.

| Socio-demographic characteristics | Attitude |  |  |  | $\mathbf{X}^{\mathbf{2}}$ | P-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Negative$(n=49)$ |  | Positive$(\mathrm{n}=151)$ |  |  |  |
|  | No. | \% | No. | \% |  |  |
| Age: |  |  |  |  | 4.02 | 0.403 |
| < 35 years | 13 | 28.9 | 32 | 71.1 |  |  |
| 35 - | 23 | 25.0 | 69 | 75.0 |  |  |
| $\geq 45$ years | 13 | 20.6 | 50 | 79.4 |  |  |
| Sex: |  |  |  |  | 0.005 | 0.944 |
| Male | 23 | 24.7 | 70 | 75.3 |  |  |
| Female | 26 | 24.3 | 81 | 75.7 |  |  |
| Level of education: |  |  |  |  | 16.51 | 0.001* |
| Illiterate/ read \& write | 11 | 50.0 | 11 | 50.0 |  |  |
| Basic education | 8 | 50.0 | 8 | 50.0 |  |  |
| Secondary | 10 | 19.2 | 42 | 80.8 |  |  |
| University | 20 | 18.2 | 90 | 81.8 |  |  |
| Years of experience: |  |  |  |  | 6.68 | 0.154 |
| $<10$ years | 18 | 32.1 | 38 | 67.9 |  |  |
| $10-<20$ years | 18 | 26.0 | 51 | 74.0 |  |  |
| $\geq 20$ years | 13 | 17.3 | 62 | 82.7 |  |  |


| Socio-demographic characteristics | Attitude |  |  |  | $\mathrm{X}^{2}$ | P-value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Negative$(n=49)$ |  | Negative$(n=49)$ |  |  |  |
|  | No. | \% | No. | \% |  |  |
| First aids training: |  |  |  |  | 8.43 | 0.004* |
| Yes | 0 | 0.0 | 23 | 100.0 |  |  |
| No | 49 | 27.7 | 128 | 72.3 |  |  |

Chi-square test * Statistical significant difference ( $\mathrm{P}<0.05$ ).
Figure (2): Total attitude score of caregivers about accident prevention among disabled school children in Minia Governorate, 2013.


## Results:

Table (1) : shows distribution of caregivers regarding to their personal characteristics, as regard to their age, less than half $(46 \%)$ of caregivers age ranged between $35<45 y$ years, with mean age $40.83 \pm 7.87$. Regarding sex, more than half of them ( $53.5 \%$ ) were females. Regarding to education, more than half of caregivers (55.0\%) had university education. As regards to occupation, about two thirds (64.5\%) of caregivers were teachers. Concerning the years of experience, more than one third (37.5\%) of caregivers had years of experience ( $\geq 20$ years), with mean years $15.64 \pm 8.43$.
Table (2) : reveals occurrence of accidents among disabled school children as perceived by their caregivers; it was observed that the majority of caregivers ( $84.2 \%$ ) stated that impairment of senses as hearing, vision, movement or cognitive function were the causes of accident among disabled children.

As regard to the most frequent places for accidents, it was observed that more than two thirds ( $68.5 \%$ ) of caregivers stated that accidents occur at street.
Regarding to the most frequent places for accidents inside schools, less than three quarters $(72.0 \%)$ of caregivers stated that playgrounds were the most frequent places for accidents inside schools. Concerning the most types of accident occurs to disabled children, the majority ( $84.0 \%$ ) of caregivers stated that motor car accidents were the first types of accident that occur to children.
Table (3) : shows the distribution of caregivers knowledge about types of accidents that occur inside school; Regarding types of injuries in classrooms it was observed that more than half (53.5\%) of them stated that types of accident in classrooms were falls. Regarding types of accidents in playgrounds, more than two third of them stated that this types were fractures (68.5\%).
As regard to accident in laboratories, more than one third $(35.0 \%)$ of them stated that suffocation is the
most injuries occurred. Also in the internal residence, more than one third ( $37.0 \%$ ) of caregivers stated that falls is the most injuries occurred.
Figure (1) : shows the total score of caregivers knowledge regarding accident prevention, it was observed that more than two fifths (41.0 \%) of caregivers had poor knowledge, also two fifths of them ( $40.0 \%$ ) had fair knowledge and only about one fifth of them (19\%) had good knowledge.
Table (4) : illustrates the relation between caregiver's total score of knowledge about accident prevention among disabled school children and their personal characteristics \& first aid training. Statistically significant differences were found between caregivers' age, sex, level of education, years of experience and first aid training and their total score of knowledge about accident prevention among disabled school children.
Table (5) : illustrates the relation between caregiver's total score of attitude about accident prevention among disabled school children and their personal characteristics \& first aid training. A statistically significance differences is found between caregivers level of education and first aid training and their total score of attitude toward accident prevention. There was no statistically a significance difference between caregivers' total score of attitude toward accident prevention among disabled school children and their age, sex and years of experiences.
Figures (2) : illustrates the total attitude score of the studied sample, it was observed that slightly more than three quarters ( $75.5 \%$ ) of caregivers had positive attitude and nearly one quarter ( $24.5 \%$ ) of them had negative attitude toward accident prevention among disabled children.

## Discussions:

Prevention of injuries among disabled children is particularly important, because injuries suffered by these children tend to be more severe. Educational efforts to prevent injury in disabled children should focus on parents and teachers, where they have a supervisory role (Petridou et al., 2003).
Concerning the personal characteristics of caregivers the findings of the current study revealed that mean age of caregivers was $(40.83 \pm 7.87)$. More than half of caregivers were females. Also more than half of caregivers had university education because less than two thirds of caregivers were teachers that have university education. Concerning years of experience, more than one third of caregivers had year of experience ( $\geq 20$ years) with mean years ( $15.64 \pm$ 8.43) (table1).

Regarding to caregivers' first aids training, the majority of them had not received any first-aid
training courses before (table 4).As there weren't any first aid training services available in these schools. This was consistent with Li et al., (2012) who study pediatric first aid knowledge and attitudes among staff in the preschools of Shanghai, China, and stated that more than two thirds of the studied sample had not taken any first-aid training courses before. Also this is consistent with ÖZTÜRK et al., (2010) who study home accident and mothers measurements in preschool children in İzmir, Turkey, stated that one third of the mothers are found to have taken first aid training; and two thirds of all mothers simply have not.
Concerning to causes of accidents among disabled children, the present study showed that the majority of caregivers stated that impairment of senses as hearing, vision, movement or cognitive function were the causes of accident among disabled children (table 2). This might be explained as the disabled children have severe limitations in their language, vision, cognitive and motor skill which can complicate the processing of physical hazards at school. Also physical impairment is associated with impaired postural stability, mobility and gait, and a greater physiological injury risk.
As regard to the most frequent places for accidents, the present study showed that more than two third of accidents occurs at street, only less than one third of accident occurs at school (table 2). This study disagreed with Thein et al., (2005) who study knowledge, attitude and practices of childhood injuries and their prevention by primary caregivers in Singapore, and stated that more than two thirds of caregivers reported that home was the most common place where childhood injuries occurred.
Regarding to the most frequent places for accidents inside schools, less than three quarters of caregivers stated that playgrounds were the most frequent places for accidents inside schools (table 2). This result was in agreement with Ramirez et al., (2004) who study disability and risk of school related injury, in the Los Angeles Unified School District (LAUSD) and stated that more than one fifth of all injuries occurred in the playground or on athletic fields, and the next most common location was the classroom.
Concerning the most types of accident occurs to disabled children, the majority of caregivers stated that motor car accidents were the first types of accident that occur to children, while half of this types were poisoning. This was contradicted with Ramirez et al., (2004) who stated that about two thirds of injuries were either falls related or involved other students biting, pushing, tripping, striking, or kicking the injured student.
Concerning the total score of caregivers' knowledge about accident prevention the present study revealed
that more than two fifths of caregivers had poor knowledge and less than one fifth of them had good knowledge (Figure 1). This finding was contradicted with Ramiz, (2009) who studied knowledge, attitude and practice of caregivers regarding accident prevention for mentally disabled children, Ain Shams, Egypt, reported that the majority of the caregivers had total satisfactory knowledge about accident prevention.
The present study showed that more than half of caregivers in the age group ( $<35$ ) years had poor knowledge score. While only less than one third of them in age group ( $\geq 45$ years) had poor score of knowledge with high statistically significant difference ( $\mathrm{P}<0.001$ ). The older caregivers scored higher knowledge might be explained as they having higher years of experience that enabling them to possess high level of knowledge and practices about accidents. This was contradicted with Li et al., (2012) who stated that younger employees scored higher knowledge, which may be due to younger employees frequently possessing higher educational levels and having already been exposed to newer knowledge regarding first aid.
The present study also showed that only one tenth of male caregivers have good knowledge score. While more than one quarter of female have good knowledge score with high statistically significant difference ( $\mathrm{P}<0.05$ ). This may be explained as females have higher level of knowledge than males due to their increased awareness and experience through life in child rearing and their exposure to home accidents.
The majority of illiterate subjects had poor knowledge with high statistically significant difference ( $\mathrm{p}-$ value $<0.001$ ). This agreed with Thein et al., (2005) who stated that educational attainment clearly is a predictor of the mother's correct knowledge and practice on childhood injury prevention. Thus, a mother with secondary education was one and half times more likely to possess the correct knowledge than a mother with primary education or no education. A mother with tertiary education was 1.7 times more likely to possess the correct knowledge than a mother with primary or no education.
Also the previous result of this study was consistent with Sobhy et al., (2011) who stated that total mother's knowledge scores were higher with increased level of education and there is a highly statistical significant difference at ( $\mathrm{p}<0.001$ ).
The present study showed that about two thirds of caregivers whom years of experience was less than 10 years, had poor score of knowledge, While less than one fifth of them whom years of experience $(\geq 25)$ years had poor score of knowledge with high
statistically significant difference ( $\mathrm{p}<0.001$ ). This may be explained as the higher the years of experience of caregivers, the more likely to possess knowledge about accidents as causes, risk factors, complication and prevention of accidents.
Also the present study showed that more than half of caregivers who had received first-aid training before, were had a higher level of knowledge than those who had not. This findings was consistent with Thein et al., (2005) who stated that subjects who had received first-aid training before had a higher level of knowledge than those who had not. This might be attributed to teaching first aid can offer an opportunity for caregivers to identify risk factors for specific injuries and actions taken to reduce risks for injuries.
The present study showed that caregivers' age, sex, year of experiences, level of education, and previous first aid training were significant predictors of knowledge score among the studied caregivers ( $\mathrm{P}<$ 0.000 ) (table 4).

Regarding to the total score of caregivers attitude, the present study showed that more than three quarter of caregivers had positive attitude (figure 2). This result was in agreement with Ramiz, (2009) who reported that the majority of caregivers had a total positive attitude toward accident prevention among mentally disabled children.
More than four fifth of university education had positive attitude, while half of illiterate caregivers had positive attitude, with high statistically significant difference $(\mathrm{P}=0.001)$. This finding was agreed with Eldosoky, (2011) who study homerelated injuries among children: knowledge, attitudes and practice about first aid among rural mothers in Qalubeya governorate, Egypt, stated that postgraduate educated mothers had the highest mean scores of attitude about home-related injuries.
The present study showed that all caregivers who had first aid training had positive attitude toward accident prevention with high statistically significant difference ( $\mathrm{P}=0.004$ ), this result was agreed with Eldosoky, (2011) who stated that mothers who had attended training course(s) on first aid had the highest score [19.8 (SD 2.9)] of knowledge, attitude and practice (KAP) about home-related injuries.

## Conclusions:

Based on the results of the present study and research questions, it was concluded that more than two fifths of caregivers had poor knowledge, and more than three quarters of them had positive attitude toward accidents prevention among disabled school children. There were statistically significant differences among caregiver's age, sex, level of education and first aid
training in relation to their total score of knowledge about accidents among disabled children. Also there were statistically significant differences among caregiver's education and first aid training in relation to their total score of attitude about accidents prevention among disabled children. There was a positive correlation between total score of caregivers' knowledge and total score of caregivers' attitude regarding accidents prevention among disabled children with high statistically significant difference.

## Recommendations:

Based on the previous findings of the present study, the following recommendations are suggested:

* Providing regular school safety and first aid training program for all disabled schools personnel that impart the knowledge and skills to promote safety and prevent injuries.
* Teach and model playground safety rules, and remind disabled children how to use equipment safely.
* Provision of regular health education programs for all disabled school personnel about accident prevention.
* Mass media campaigns often targeted general injury prevention.


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