

Knowledge of Pupils with Deafness regarding First Aid in Schools



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1. ABSTRACT

First aid is the initial, immediate, and temporary care provided to an injured or sick person in an emergency until medical services can be obtained. Pupils with deafness are at a higher risk of injury due to inability to detect and respond to potential hazards in their environment, so first aid knowledge is extremely valuable for everyone in the community, including pupils with deafness; for that this study aimed to assess knowledge of pupils with deafness regarding first aid in schools through carried out a cross sectional study on a convenient sample of 100 of pupils with deafness, at Al Amal School for the pupils with deafness and hearing impairment, Mansoura city, by two tools to assess socio-demographic and economic characteristics, and knowledge of the pupils with deafness regarding first aid in schools. Results. All pupils with deafness had poor level of knowledge regarding first aid. Conclusion. Since the pupils with deafness had poor level of knowledge regarding first aid, it is recommended to design educational program to raise pupils with deafness' knowledge regarding first aid and train pupils with deafness on first aid of common injuries in schools.

Keywords: First-aid, knowledge, pupils with deafness, schools

2. Introduction:

Disability refers to the interaction between individuals with a health condition, personal and environmental factors, disabilities can be visible or invisible and, it is estimated that over one billion people are disabled. There are many types of disabilities (mental health disabilities, chronic illnesses, intellectual disabilities, and hearing and vision disabilities) that limit one or more major life activities (World Health Organization [WHO], 2021b). Deafness can be defined as a condition in which an individual is unable to hear sound in all or most of its forms (Centers for Disease Control and Prevention [CDC], 2020; Individual with Disabilities Educational Act [IDEA], 2018).

Hearing loss (HL) can be mild, moderate, severe, or profound. It is estimated that by 2050 over 700 million people will have disabling hearing loss. Also, the global number of people with hearing loss is expected to rise by 56.1 % over the next 30 years, people with deafness mostly have profound hearing loss, which means they have very little or no hearing. They frequently communicate through sign language. HL is a much larger issue than one might think (Haile et al., 2021; WHO, 2021a; Wilson & Tucci, 2021).

According to Ramirez et al (as cited in Alosufe, Abd El-Kareem, & Mohamed, 2018), pupils with deafness should be exposed to a range of school activities that promote their physical, emotional, and social development and prepare

them for independent living. Consequently, they may be exposed to several risky situations in classrooms, on the playground during recess, or on the sports field during physical education or organized athletics because they cannot respond to any auditory stimuli.

These accidents and injuries may cause serious consequences if not handled properly. As a result, implementing proper first aid measures are critical for casualties in emergency and improve the overall outcome of the first aid process in emergency situations (Khatatbeh, 2016). First aid is defined as the initial, immediate, temporary care given to an injured or sick person in life threatening situations and taking effective action to keep the injured or ill person alive and in the best possible condition until emergency medical services and treatment can be obtained with minimal or no medical equipment, first aid could made the difference (Alshuwayrih et al., 2018; Siddiqui, A. Qahtani, A. Qahtani, A. Barkout, & AlAamri, 2018).

School nursing is a branch of professional nursing that promotes students' well-being, academic success, and long-term achievement and health. The school nurse is often the only individual in the school who is aware of the widespread impact of HL. School nurses can help to ensure accommodations, as well as any necessary safety physical safeguards in the environment within the classroom pupils with

hearing impairments loss must "see to hear" and necessitate optimal lighting and visual clarity in the room. Vision should be evaluated on an annual basis. ensure that pupils have complete access to all visual data (National Association of School Nurses (NASN), 2017; Robarge, & Pontius, 2012).

Furthermore, every individual of any age, including school pupils, should be familiar with and aware of basic first-aid procedures (El Magrabi, ElwardanyAly, & Khalaf, 2017).

Aim of the Study

To assess knowledge of pupils with deafness regarding first aid in schools.

3. METHODOLOGY

Design

A cross-sectional study design was utilized to accomplish this study.

Setting

This study was conducted at Al Amal School for the pupils with deafness and hearing impairment, Mansoura city. The school located in west Mansoura district, affiliated to Directorate of Education in Dakahlia Governorate.

Participants

Pupils with deafness were included according to the following criteria: preparatory and secondary levels and both genders.

Sampling

A convenient sample of 100 Pupils with deafness selected from the above-mentioned settings.

Tools for Data Collection

The researcher developed two tools for data collection after reviewing the related literature.

Tool (I) Socio-demographic and economic characteristics of the pupils with deafness self-administrated structured questionnaire. This questionnaire was used to assess socio-demographic and economic characteristics of pupils with deafness such as: age, gender, residence, and level of education.

Tool (II) Pupils with deafness' knowledge self-administrated structured questionnaire. This questionnaire was used to assess knowledge of pupils with deafness regarding first aid in school, such as: definition, various accidents that occur on school, first aider, first aid kit, cardiopulmonary resuscitation (CBR), choking, epistaxis, fractures, electric shock, and foreign body in the eye this section was classified into 10 categories; all these categories composed of 35 questions. Each correct answer awarded one mark as the following: first

aid question 1-4 (13 items = 13 marks), various accidents that occur on school question 5 (10 items = 10 marks), first aider question 6-7 (2 items = 2 marks), first aid kit question 8-10 (18 items = 18 marks), cardiopulmonary resuscitation (cpr) question 11-18 (28 items = 28 marks), choking question 19-23 (17 items = 17 marks), epistaxis question 24-26 (21 items = 21 marks), fractures question 27-30 (23 items = 23 marks), electric shock question 31-33 (22 items = 22 marks), foreign body in the eye question 34-35 (17 items = 17 marks).

Scoring system. The total score of knowledge was 171 marks. Based on the researcher's cut of point, knowledge categorized into three levels:

Poor. Scores less than 60% of total scores (< 102.6 marks)

Fair. Scores from 60% to less than 80% of total score (102.6 < 136.8 marks)

Good. Scores from 80% and more of total scores (\geq 136.8 marks)

Procedure

Preparation phase. It included the following:

Administrative process. The researcher obtained approval to carried out the current study according to the following lines of permissions: Faculty of Nursing, Mansoura University submitted an official letter to Directorate of Education, Mansoura city, followed to Directorate of Special Education, Mansoura city, then to West Mansoura Educational District; lastly to the selected school.

Ethical consideration. The researcher obtained approval from Research Ethics Committee, Faculty of Nursing, consequently obtained oral consents from pupils with deafness, after explaining the aim of the study and assured them that their data be treated anonymously and confidentially and used for research purpose only. In addition to each participant had the right to ask any question related to the study as well, withdraw at any time without given any reason.

Literature review. The researcher reviewed national and international literatures regarding first aid in the school, textbooks and scientific revealed articles were a guide for developing the study tools.

Development of the study tools. The researcher developed tools of data collection supported by reviewing the relevant literatures.

Content validity. Five experts in the field of community health nursing tested the study tools for content validity and the required modifications were carried out.

Face validity. A pilot study was carried out on 10 % of the study participants (16 of pupils with deafness) were selected *conveniently* from the same settings and excluded from the study sample. The required modifications were done.

Operational phase. It included the following steps:

Pre fieldwork preparation. The researcher and a coauthor of the current study had accomplished training courses on sign language to be certified. These courses enabled the researcher to effectively communicate with pupils with deafness.

Initial data collection. The researcher started by introducing herself to the pupils with deafness and explained the aim of the study. The researcher used data collection tools (I and II) to assess pupils with deafness' socio-demographic and economic characteristics and knowledge regarding first aid in the school.

This was carried out two days (Sunday and Wednesday)/week, at morning shifts 8.30 am to 12.30 pm, and lasted for three months. Prolongation of this step attributed to outbreak of Covid -19 pandemic and its consequence of low attendance of pupils. The researcher collected data, through focus group (3-6 pupils), each session consumed almost one hour, communicating with sign language to enable the researcher filling the study tools.

Statistical analysis. Data was sorted, coded, organized, categorized, and then transferred into especially designed formats. Data was analyzed using Statistical Package for Social Science (SPSS) version 21/International Business Machines/IBM. Com, U.S.A and were presented by simple frequency tables. Mean and standard deviation for continuous variables and percentages for categorical variables.

Limitations of the Study

Some obstacles faced the researcher during carrying out the study represented in:

- The pupils with deafness had difficulties in reading, so the researcher constructed appropriate media and translated every word in the tools to sign language. A structured interview was conducted instead of self-administered questionnaire.
- To the best of the researcher's knowledge, study population in the published articles in the subject of first aid in schools were restricted on teachers and/or normal students at different levels of education, except only one study included pupils with deafness accordingly, the researcher argued these studies in discussion part.

4. RESULTS

Table 1 shows that 81% of the studied pupils with deafness were in the age group ranged from 15 to less than 20 years with a mean of 16.95 (1.99) years. It was stated that 57% and 69% of them were male and from rural areas respectively. Secondary school was the achieved educational level of 51% of the studied pupils with deafness. Concerning level of education of studied pupils with deafness' mothers and fathers, 45% of mothers had technical school, while 23% of fathers had bachelor's/ postgraduate's degree. As regards occupation 81% of their mothers did not work and 99% of fathers were working. Finally, 64% of the studied pupils with deafness reported that; they had adequate monthly income.

Figure 1 declares that 50%, 44%, and 6% of the studied pupils with deafness utilized health insurance, governmental health facilities, and private health facilities for health care services, respectively.

Table 2 demonstrates that all the studied pupils with deafness had poor level of knowledge regarding first aid with a total mean of knowledge 41.43 (20.88).

Table 1:Socio-demographic and economic characteristics of the pupils with deafness

Item	N (100)	(%)
Age (in years)		
< 15	12	12.0
15 - < 20	81	81.0
20 - < 25	7	7.0
\bar{x} (SD)	16.95 (1.99)	
Gender		
Male	57	57.0
Female	43	43.0

Residence		
Rural	69	69.0
Urban	31	31.0
Education		
Preparatory	49	49.0
Secondary	51	51.0
Mother education		
Cannot read and write	20	20.0
Read and write	7	7.0
Technical schools	45	45.0
Technical institutes	4	4.0
Bachelor's degree	24	24.0
Father education		
Cannot read and write	15	15.0
Read and write	10	10.0
Technical schools	46	46.0
Technical institutes	6	6.0
Bachelor's degree	22	22.0
Postgraduate	1	1.0
Mother occupation		
Work	19	19.0
Does not work	81	81.0
Father occupation		
Work	99	99.0
Does not work	1	1.0
Income/month		
Inadequate	12	12.0
Adequate	64	64.0
Adequate, reserve	24	24.0

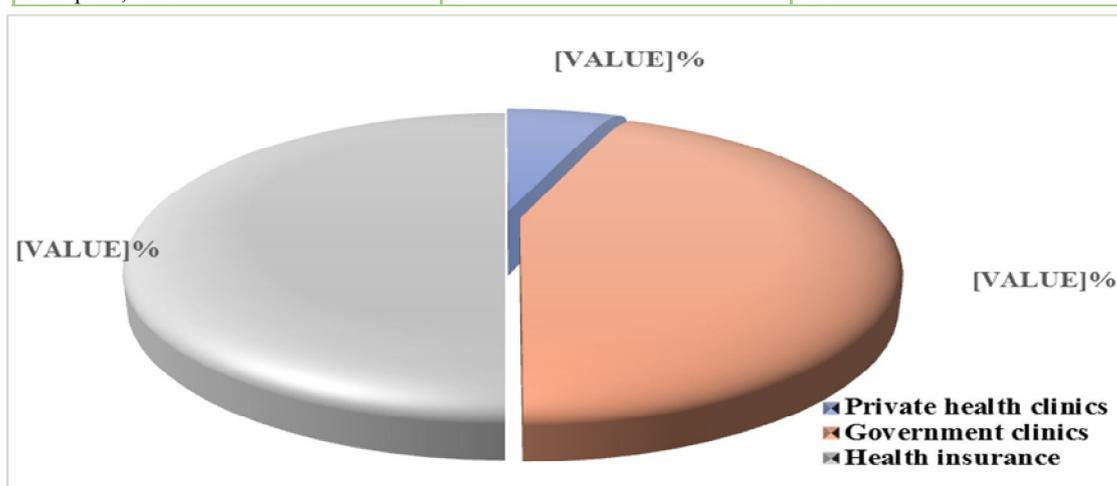


Figure 1 Utilized health care services among pupils with deafness (n= 100)

Table 2 Knowledge score levels of the pupils with deafness regarding first aid (n=100)

Items	Score levels						\bar{x} (SD)
	(Poor<60%)		(Fair60<80%)		(Good≥80%)		
	N	%	N	%	N	%	
First aid	88	88.0	8	8.0	4	4.0	3.69 (2.88)
Various accidents that occur on school	79	79.0	9	9.0	12	12.0	3.35 (2.51)
First aider	95	95.0	0	0.0	5	5.0	.51 (.59)
First aid kit	87	87.0	11	11.0	2	2.0	6.15 (3.31)
Cardiopulmonary resuscitation CPR)	100	100.0	0	0.0	0	0.0	3.86 (3.32)
Chocking	92	92.0	7	7.0	1	1.0	4.34 (3.99)
Epistaxis	100	100.0	0	0.0	0	0.0	3.85 (2.48)
Fractures	100	100.0	0	0.0	0	0.0	4.13 (2.49)
Electric shock	100	100.0	0	0.0	0	0.0	4.66 (2.79)
Foreign body in the eye	100	100.0	0	0.0	0	0.0	3.28 (2.29)
Total knowledge score = 168	100	100	0	0.0	0	0.0	41.43 (20.88)

Note. Poor score (< 102.6 marks). Fair score (102.6 < 136.8 marks). Good score (≥ 136.8 marks)

5. DISCUSSION

Injury is a major challenge to health representing the largest cause of early morbidity and mortality and the leading cause of death among adolescents. Injury was defined as any injury serious enough to require medical attention or treatment at a medical facility although the large burden of injury and the associated mortality and morbidity are preventable through first aid measures, delay in immediate and appropriate first aid increases the mortality and morbidity (Mehreen, Mathur, Jat, & Pathak, 2021).

The benefits of teaching first aid in schools are now well documented, both for increasing the number of bystanders available to assist in emergency situations and for the personal and social skills the training provides for pupils (Wilks & Pendergast, 2017).

Results of current study could be argued as follows. All pupils with deafness had poor score level of knowledge regarding CBR. This result agreed with Alanazi, Bin-Hotan, ALhalyabah, Alanazi, and Al-oraibi (2013), in Riyadh Saudi Arabia, reported that school students lacked knowledge about CPR, additionally Alateeq et al. (2018) in Riyadh city government schools, found poor level of awareness about BLS and CPR; as more than half and almost half did not know about BLS and CPR, respectively. In the same line, Ma, Wong, Tou, Vyas, and Wilks (2015) conducted a study in Hong Kong, assessed knowledge and attitudes about CPR among high school students aged 15-16, found that majority of

respondents had poor score level of knowledge regarding CBR.

Based on the results of the present study, most of pupils with deafness had poor knowledge regarding choking this result came in agreement with Semwal, Bakshi, Juyal, Vyas, and Kandpal (2017), in Doiwalablock, Dehradun, who investigated school children's knowledge and attitudes about first aid and indicated that almost three fourths of school children had poor knowledge regarding choking.

As regard to epistaxies, the current study represented that all pupils with deafness had poor score level of knowledge. This finding contrast to a study carried out by Barutcu, Cakmak, Koksoy, and Polat (2017), in Turkey, assessed level of knowledge and factors affecting first aid in vocational high school students, present that most of studies participant had good knowledge regarding nose bleeding.

The current study declared that all pupils had poor knowledge about fracture. This finding was quite like a study was conducted by Bandyopadhyay, Manjula, Paul, and Dasgupta (2017), in Singur block of Hooghly district, west Bengal, assessed effectiveness of first aid training on school students' knowledge, revealed that less than one fifth of school students had poor level of knowledge about fracture before training. This finding highlighted the importance of first aid courses and training.

Based on the results of the present study, all pupils with deafness had poor score level of knowledge regarding electric shock. This finding

was in line with Semwal et al. (2017) studied school children of Doiwala block, Dehradun knowledge and attitudes related to first aid, revealed that most of school pupils had poor score level of knowledge regarding electric shock. However, this result disagrees with Das et al. (2019), in Kolkata School, assessed the effectiveness of educational intervention regarding first aid management of selected medical emergencies among adolescents; indicated that more than half the study group had knowledge regarding electric shock before intervention.

Results of the present study demonstrated that, all pupils with deafness had poor score level of knowledge about first aid for foreign body in the eye. This finding disagreed with Dasgupta, Bandyopadhyay, and Das (2014) assessed effectiveness of health education in terms of knowledge acquisition on first aid measures among school students of a rural area of west Bengal, revealed that majority of participants had correct response for the question on first aid management of foreign body in the eye.

The current study indicated that, all pupils with deafness had poor total score level of knowledge regarding first aid in school. This result agreed with Wafik and Tork (2014) assessed effectiveness of a first aid intervention program applied by undergraduate nursing students to preparatory school children; indicated that almost all of school students had unsatisfactory level of knowledge; in addition to, a study conducted by Semwal et al. (2017) concluded that the first aid knowledge among school students in public school of Doiwala block and Dehradun was insufficient, while study carried out by Jose, (2015), in the city of Oriental Mindoro, assessed awareness, attitude, and practice of first aid among junior high school students found out that less than one fifth of high school students had poor knowledge about first aid.

In contrast to a study carried out by Jacob and Barboza (2021) in India to assess knowledge regarding first aid among the undergraduate students reported that almost half of the students were with good knowledge and only one third were with inadequate knowledge regarding first aid.

So, Mehreen et al. (2021) recommended that educational interventions in school curriculums can strengthen the knowledge of adolescents on unintentional injury prevention and first aid. According to Bohn, Lukas, Breckwoldt, Böttiger, and van Aken (as cited in Banfai, Pek, Pandur, Csonka, & Betlehem, 2017), early childhood first aid training can improve an individual's knowledge,

skills, and willingness to perform first aid in an emergency situation.

6. CONCLUSION

It is concluded that; all the studied pupils with deafness had poor level of knowledge regarding first aid in schools.

7. RECOMMENDATIONS

- Design educational program to raise pupils with deafness' knowledge regarding first aid.
- Training pupils with deafness on first aid of common injuries in schools.

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