Raising Awareness of Deaf Students and their School Care-Givers about First Aid Intervention in Medical Emergencies

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Abstract: Objectives: To assess and raise the awareness of deaf students and their school care-givers about first aid intervention in medical emergencies. Participants: All deaf students in both the preparatory and secondary levels of education in a school for the deaf, who were under 18 years old (n = 44), in addition to school dormitories care-givers (n = 2) were participated in this study. Research Hypothesis: An implementation of first aid intervention program would have a positive outcome on raising awareness of deaf students and their school care-givers in medical emergencies. Methods: Participants' knowledge and skills were assessed using pre and post test questionnaire sheet contained thirty seven quiz multiple choices statement questions in Arabic language. Moreover, post-test intervention didactic and practical learning sessions consisted of six video films on DVD-ROM are presented to the participants accompanied by sign language translation in order to achieve the research objectives. Results: An intervention program showed a clear positive outcome on raising awareness of deaf students and their school care-givers about first aid intervention in medical emergencies. The highest percentage of deaf students (61.4%) obtained the lowest sum score lies between zero to less than 25% in the pre-intervention phase, while about half of them (45.5%) obtained sum score lies between 50 to less than 75%, and more than tenth (11.3%) obtained the highest sum score that lies between 75 to 100% in the post-intervention phase, which revealed statistical significant differences in the participants' knowledge of skills at p=0.001 and 0.000. Similarly, pre knowledge sum scores of the two school care-givers about first aid skills rose from 43.2% and 63.2% respectively reached to the mastery level of 100% in response to the study intervention programmed. Conclusion: Although not enough for all items to be statistically significant, first aid intervention program raised the awareness of deaf students and their school care-givers.

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1. Introduction:

Hearing disability has gained great interest in the last decades. This growing interest stemmed from its devastating effects on communication, person's life and the economics of countries (1). International statistics for children with hearing impairment are reported to be 2-6 per 1000 live birth (2). Hearing loss represents a significant public health problem especially when compared to other commonly known childhood diseases. In Egypt, profound hearing loss is shown to be 6-7 per 1000 child (3).

Emergency situations are challenging for everyone (4). When someone becomes ill or injured there is usually a short period of time before get a professional medical assistance. That length of time is most critical to the victim. What someone do, or don't do during that period of time can make the difference between life and death. By having some first aid training and knowing cardiopulmonary resuscitation (CPR) the trained person can have a major impact to the successful outcome of a medical emergency (5).

First aid is the initial assistance or care of a suddenly sick or injured person. It is the vital initial care we all feel an impulse to give as soon as possible after an accident or illness. So, first aid is an important part of everyday life, both at home, work or at play. Everyone should learn first aid and be willing to administer basic care until emergency assistance arrives. Not every incident requiring first aid is a life-and-death situation. First aid knowledge is commonly used to manage minor injuries at home or work (10).

Children on the whole are more capable of learning first aid and applying that knowledge sensibly. Children usually do struggle to save others lives, but at least if they know the technique they can do something better. Inspite of there are special children out there for whom the knowledge may be inappropriate, but it is a minority (6). Inclusive first aid programme helps people with disabilities play a full role in learning life-saving skills. It is a unique programme designed to work with groups or individuals who may require a more flexible approach to learning first aid skills (7). In deaf

children, a communication barrier can derail interactions between emergency responders and members of the deaf and hard of hearing community, making an already difficult situation unmanageable (4).

Personal safety skills for deaf children is a group work programme on DVD-ROM designed to help give deaf children and their caregivers the knowledge, awareness and skills they need to stay safe and make better informed life choices. Learning and practicing first aid saving skills isn't just about making someone a potential life-saver; it helps increase confidence, social skills, independence and the ability to react to a crisis (8). It also helps to strengthen the self-confidence and self-esteem of deaf children, enabling them to seek help and advice when they need it (7).

Inclusive first aid tips in the school place offers deaf students and their caregivers a chance which includes, but is not limited to, the assessment and interpretation of emergency situations and safe responses to those situations. Those students can learn the proper methods for the control of bleeding and shock, maintenance of airway, breathing and circulation, the care of burns, poisonings and other first aid techniques (8).

The loss of children's lives that results from injuries combined suggests a staggering numbers of productive lives lost to society (11). Therefore, first aid is immediate help provided to a sick or injured person and sometimes consists of procedures and techniques requiring minimal or no equipment. "Basic practical life skills will not only benefit the students but also the community at large, when such important life skills can go a long way in saving lives when needed (9).

Aims of the Study

The aims of this study were:

1-To assess deaf students and their school care-givers' awareness about providing first aid intervention in medical emergency situation.

2- To raise the awareness of deaf students and their school care-givers about providing first aid intervention in medical emergency situation.

Research Hypothesis:

It was hypothesized that:

An implementation of first aid intervention program would have a positive effect on raising awareness of deaf students and their school care-givers in medical emergencies.

Operational Definition

A care-giver is a mentally stable adult, typically over 18 years, who provides care for another(s). Child care-giver is a person who are responsible for providing direct care, protection and supervision of children in a child-care center, school for children with special needs or at home. This person is generally assigned to provide assistance to a child who is no longer able to perform the routine care or critical tasks necessary for every day survival.

2. Materials and methods

Methods

This study used a quasi experimental design.

Setting

The study was carried out at a school for the deaf students, at El-Mansoura City, in the period of the second semester of the study year 2009-2010, started from March 2nd to June 2nd, 2010.

Participants

All students inside the previously mentioned school for deaf children belonged to the preparatory phase (n=30) and those in the secondary phase (n=14) who were under 18 years old, in addition to the assigned care-givers (n=2) who stayed with at school dormitories deaf students after the end of school day in order to provide the required care and help for those children with special needs were included in the study sample.

Tools

Two tools were used to conduct the current study:

1. First Tool:

This tool was divided into 2 parts:

A) Part I:

Socio-demographic characteristics of deaf students and their families, including; age, gender, level of education, family resident, degree of deafness, place of accommodation, students' fathers and mothers educational levels, their occupation, and family history concerning the presence of deaf spouses. This part also includes the socio-demographic characteristics of the students' supervisors, such as, age, level of education, years of experience, marital status, and residency.

B) Part II:

Pre and post test questionnaire sheet in the form of 37 quiz multiple choices statement questions in Arabic language, constructed for both deaf students and their school care-givers in order to assess their awareness about providing first aid intervention in emergency situations. First aid statement questions were focused on two domains, one of them was concerned with the participants' knowledge; including emergency contact

information, basic information about first aid, vital organs information, diagnosis of hyperglycemia, intervene with poisoning, chocking, the presence of eye foreign body, epileptic fit, and an asthmatic child. The other domain was concerned with the participants' skills including; priorities of action when intervening with a casualty, and how to intervene as a first aider in different emergency situations such as; shock, burn, bleeding from cutting wound or in case of nosebleed, and musculoskeletal emergency.

2. Tool of intervention:

Post-test video films on DVD-ROM by the British Red Cross accompanied by sign language translation were used. They are specifically geared to helping the deaf and hearing impaired to learn how to follow the initial steps when intervening with a casualty**,** and the simple procedure of caring for casualties in different emergency situations, including: the steps of cardio-pulmonary resuscitation (CPR) for children, recovery position, and intervening with cutting wound, bleeding nose, burns and scalds, choking and twisting and fracture.

Intervention

1. Preparation phase

I- Administrative process

An official request to conduct the study was directed from Faculty of Nursing El-Mansoura University to the manager of Directorate of Education, Dakahlia Governorate. The approval is sent very soon to the headmaster of the school for deaf students, and the start permission is obtained.

II- Development of the study instrument

a. The quiz multiple choices questionnaire sheet was used as a pre and post test to assess both the students and their school care-givers' awareness about first aid.

Content Validity and reliability

Because there is no validation for any Arabic tool in Egypt, two bilingual lecturers belonged to the critical and pediatric nursing departments, faculty of nursing El-Mansoura University translated the tool's questions from English to Arabic language, and then this tool is back translated by another two lectures from the same departments. On conflict, the four juries met together to solve the arisen language incompatibility until the translated Arabic tool returned to its original English one. The recommended modifications that ensured tool clarity were done.

Feasibility study (pilot study) is conducted on five students chosen randomly, as student number Five from the classroom list, and those students are excluded from a full-scale study. The pilot study aimed to testing adequacy of research instruments; refine quiz multiple choices statement questions, assessing whether the research protocol is realistic and workable, and identifying logistical problems which might occur. The necessary modifications were done accordingly.

b. Training material in the form of sign language video films on DVD-ROM, laptop, data show apparatus and screen for presentation, and supplies and manikin for demonstration were prepared.

2. Implementation phase

a. The headmaster of the school for deaf students nominated an experienced teacher in sign language from the study setting itself. She accompanied the researchers as a translator throughout the study phases to facilitate and ensure complete and accurate transmission of any message to the participants. The researchers spent the first day with the translator to clarify the aim of the study, all the study phases, and to explain the content of the awareness sessions; until she understood and became well prepared for active participation in the study.
b. Ethical consideration: The two researchers introduced themselves through the translator to the participants (deaf students and their school care-givers). A simple explanation about the aims of the study was illustrated to them. A written consent notifying deaf student's agreement to share in this study signed by his/her direct care-givers is obtained. The researchers emphasized in the consent that the participation is voluntary, any participant can withdraw at any time without any need to justify his/her decision, any raised question will be answered, and the collected data will be treated confidentially and will be used only in the current study.
c. For the purpose of data collection, the researchers attended the school day and met the participants three days per week on Tuesday, Wednesday and Thursday.
d. Students of the preparatory school level are divided into six groups each group included five participants, while those of the secondary level are divided into two groups each one composed of seven participants, in addition to the two school care-givers.
e. Pre-test data collection period is started in March 3 and completed in March 17, 2010. Through this period, a group of 5-7 participants were assessed using questionnaire sheet.
f. Post-test intervention methods in the form of two presentation sessions (didactic and practical) for

each group are started from March 23 to April 15, 2010. In the first didactic session, the researchers with the translator presented some knowledge about the meaning and aim(s) of first aid, ambulance phone number, ambulance call cost, organ of breathing and that pumping blood, sites of pulse counting, the normal pulse rate among school age children, defining hypothermia, occurrence of brain damage due to asphyxia, how to diagnose hyperglycemia, and the required steps to provide first aid assistance in case of poisoning, foreign body aspiration, presence of foreign body in the eye and nose, epileptic fits and asthma. The researchers used blackboard to write the content of the session as well as a translation to sings language to ensure complete and accurate explanation. In the second practical session, each group watched six video films presented on DVD-ROM, that explained how to follow the initial steps when intervene with a casualty, and the simple procedure of caring for casualties in different emergency situations, including: the steps of cardio-pulmonary resuscitation (CPR) for children, recovery position, and intervening with cutting wounds, bleeding nose, burns and scalds, choking and twisting and fracture. After that, the participants are randomly selected to demonstrate on a manikin three procedures that were listed by order exactly as the scenarios presented in the films.

3. Evaluation phase

The post-test conducted after the completion of the presentation sessions from April 20th to June 2nd, 2010. Through this period, the participants were assessed using questionnaire sheet.

Statistical analyses

Data were analyzed using SPSS software version 14.0, and proper statistical tests were used accordingly. The obtained pre-test scores were compared to those of the post-test in order to detect the level of significance.

3. Results

Table (1) shows the total of 44 deaf students that constituted the study sample; 38.6% of them were males and (61.4%) were females. 68.2% of the sample were in the preparatory school level and (31.8%) were in the secondary level. 61.4% of students resident at urban areas, the degree of deafness among more than half (54.5%) was hard of hearing, and the majority (81.8%) were accommodate with their families.

Table (2) shows that less than half (47.7%) of deaf students' fathers and mothers were illiterate, only (11.3%) of the fathers and none of the mothers had bachelor degree. The occupation of more than half of student's fathers and mothers (59%) were as workers. Only (15.9%) of students had deaf relative(s), with (71.4%) of them had some form of hearing difficultly.

Table (3) shows that the highest percentage of deaf students (61.4%) obtained the lowest sum score that is lying between Zero to less than 25% in the pretest aimed to assess their knowledge of skills about first aid intervention in emergency situation. While, about half of the deaf students (45.5%) obtained sum score lies between 50% to less than 75% in the post-test, more than tenth of them obtained the highest sum score that lies between 75% to 100%.

Figure (1) shows that although the pre knowledge sum scores of the two school care-givers about first aid skills in emergency situations were (43.2%) and (63.2%) respectively, their post knowledge sum score were improved in to reach the mastery level of 100%.

Table (4) shows percentage distribution of deaf students' correct knowledge about first aid intervention in different emergency situations. The awareness of students' participants showed an improvement among all items of first aid, except for the average pulse of an adolescent in response to the study intervention program. Furthermore, statistically significant differences were detected in deaf students' awareness with ambulance call coast (p=0.005), and intervening with a poisoned casualty by drug misuse (p=0.000).

Table (5) shows percentage distribution of deaf students' correct practice related to providing first aid intervention in different emergency situations. Participants' skills showed an improvement among all items of first aids, with highly statistically significant differences detected among determining first aid priorities for a casualty in medical emergencies (p=0.000), intervening with cutting wounds (p=0.005), twisting and fractures (p=0.000), and a shocked casualty (p=0.000).

Table (1) Socio-Demographic Characteristics of Deaf Students (N =44)

Item	Number *(n)*	Percentage *(%)*
Gender		
Male	17	38.6
Female	27	61.4
Educational Level		
Preparatory	30	68.2
Secondary	14	31.8
Resident		
Urban	27	61.4
Rural	17	38.6
Degree of deafness		
Deafness	20	45.5
Hard of hearing	24	54.5
Accommodation		
With the family	36	81.8
Dormitories at school	8	18.2

Table (2) Socio-Demographic Characteristics of Deaf Students' Families (N = 44)

Item	Number *(n)*	Percentage *(%)*
Students' fathers educational levels		
Illiterate	21	47.7
Read & write	9	20.5
Technical secondary school	9	20.5
Bachelor Degree	5	11.3
Students' fathers occupation		
Worker	24	54.5
Technician	6	13.7
Employee	11	25
Retired	3	6.8
Students' mothers educational levels		
Illiterate	21	47.7
Read & write	15	34.1
Technical secondary school	8	18.2
Bachelor Degree	0	0.00
Student's mother occupation		
Housewife	9	20.5
Worker	26	59
Employee	9	20.5
Retired	0	0.00
Degree of relative's deafness		
Deafness	2	28.6
Hearing difficultly	5	71.4

Table (3) Knowledge of Skills of Deaf Students about First Aid Intervention, Pre vs. Post-intervention Scores

Knowledge of Skills Score	Pretest		Posttest			
	No.	(%)	No.	(%)	$\chi 2$	p-value
0% – less than 25%	27	61.4	0	0	**13.5**	**0.001***
25% – less than 50%	17	38.6	19	43.2	**18**	**0.000***
50% – less than 75%	0	0	20	45.5	**10**	**0.007**
75% – 100%	0	0	5	11.3	**2.5**	**0.3**

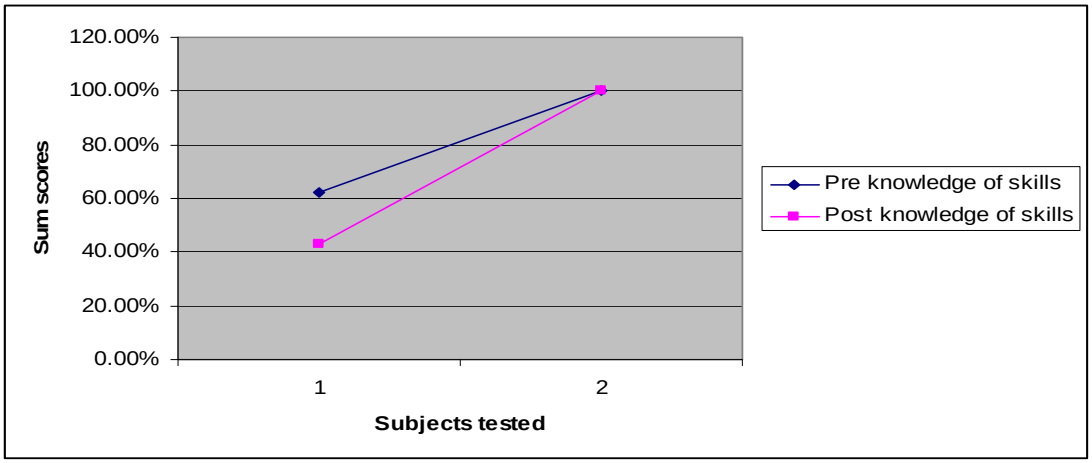

Figure (1) Knowledge of Skills of School Care-givers about First Aid Intervention, Pre vs. Post-Knowledge Sum Scores

Table (4) Number and Percent of Deaf Students' Correct Knowledge about First Aid Intervention, Pre vs. Post-intervention Phases

Statement/question	(n=44) Pre-test N (%)	(n=44) Post-test N (%)	Significance test
Participants' knowledge			
Q1: What number do you phone in case of medical emergency?	25 (56.8)	31 (70.5)	χ^2= 1.8 , **P**= 0.18
Q2: How much does it cost to call an ambulance?	20 (45.5)	33 (75.0)	χ^2= 8.0 , **P**= 0.005*
Q3: What is First Aid?	15 (34.1)	21 (47.7)	χ^2= 1.7 , **P**= 0.19
Q4: The aims of first aid are...	5 (11.4)	9 (20.5)	χ^2= 1.4 , **P**= 0.24
Q6: What organ do we breathe with?	19 (43.2)	23 (52.3)	χ^2= 0.7 , **P**=0.4
Q7: What organ pumps the blood?	7 (15.9)	15 (34.1)	χ^2= 3.9 , **P**= 0.05
Q8: For a casualty; a pulse is taken where on the body?	13 (29.5)	24 (54.5)	χ^2= 5.6 , **P**= 0.02
Q9: The average pulse of an adolescent is between:	13 (29.5)	5 (11.4)	χ^2= 4.5 , **P**= 0.03
Q10: Hypothermia develops when the body temperature drops below:	12 (27.3)	9 (20.5)	χ^2= 0.6 , **P**= 0.5
Q33: How long does it take for brain damage to occur due to lack of oxygen?	10 (22.7)	16 (36.4)	χ^2= 2.0 , **P**= 0.16
Q18: A marble is stuck up a child's nose. What do you do?	7 (15.9)	12 (27.3)	χ^2= 1.7 , **P**= 0.2
Q20: A foreign body embedded in the eye should be?	9 (20.5)	14 (31.8)	χ^2= 1.5 , **P**= 0.23
Q31: For an older child casualty that is unconscious through choking you should…	13 (29.5)	16 (36.4)	χ^2= 0.5 , **P**= 0.5
Q26: If a child is having an epileptic fit, you should...	14 (31.8)	23 (52.3)	χ^2= 3.8 , **P**= 0.05
Q27: When should you call an Ambulance when a casualty has taken an epileptic fit?	8 (18.2)	16 (36.4)	χ^2= 3.7 , **P**= 0.06
Q32: Asthma can be treated by:	11 (25.0)	20 (45.5)	χ^2= 4.0 , **P**= 0.05
Q35: Hyperglycaemia is caused when:	11 (25.0)	16 (36.4)	χ^2= 1.3 , **P**= 0.25
Q36: For a casualty that has been poisoned by drug misuse you should?	7 (15.9)	23 (52.3)	χ^2= 13.0 , **P**= 0.000*
Q37: First aid intervention in case of chemical poisoning, may include:	10 (22.7)	22 (50.0)	χ^2= 7.0 , **P**= 0.008

Table (5) Number and Percent of Correct Practice Related to First Aid Intervention, Pre vs. Post-test Phases

Statement/question	(n=44) Pre-test () N (%)	(n=44) Post-test N (%)	Significance test
Participants' skills			
Q11: What is the first thing you should do when you approach a casualty? Check…	17 (38.6)	21 (47.7)	χ^2= 0.7 , **P**= 0.39
Q5: The first aid priorities at an emergency are:	12 (27.3)	29 (65.9)	χ^2= 13.2 , **P**= 0.000*
Q12: How would you place an unconscious casualty who did not move or talk when touched or talked to?	3 (6.8)	12 (27.3)	χ^2= 6.5 , **P**= 0.01
Q34: If a person does not breathe through their mouth or nose, how else might the breath?	10 (22.7)	18 (40.9)	χ^2= 3.4 , **P**= 0.07
Q13: For a casualty with a superficial burn to the hand, you should**:**	17 (38.6)	24 (54.5)	χ^2= 2.2 , **P**= 0.14
Q14: A casualty with a full thickness burn of 2cm diameter, should:	8 (18.2)	15 (34.1)	χ^2= 2.9 , **P**= 0.09
Q15: How would you treat severe bleeding from a cutting wound?	7 (15.9)	12 (27.3)	χ^2= 1.7 , **P**= 0.2
Q16: When putting a dressing on a wound you should:	14 (31.8)	27 (61.4)	χ^2= 7.7 , **P**= 0.005*
Q17: If a piece of glass is embedded in a wound should you**:**	9 (20.5)	11 (25.0)	χ^2= 0.3 , **P**= 0.6
Q19: How would you treat a bleeding nose?	13 (29.5)	14 (31.8)	χ^2= 0.05 , **P**= 0.8
Q21: To treat a soft tissue injury you would follow which of the following sequences?	20 (45.5)	18 (40.9)	χ^2= 0.2 , **P**= 0.7
Q22: Where would you check the circulation after putting on a foot bandage?	10 (22.7)	18 (40.9)	χ^2= 3.4 , **P**= 0.07
Q23: An elevation sling should be used to treat a casualty who has**:**	8 (18.2)	26 (59.1)	χ^2= 15.5 , **P**= 0.000*
Q24: An elevation arm sling should be folded in ..…….. shape.	12 (27.3)	19 (43.2)	χ^2= 2.4 , **P**= 0.12
Q25: To treat a fractured leg you would....	1 (2.3)	17 (38.6)	χ^2= 17.9 , **P**= 0.000*
Q28: Circulatory shock is caused by...	11 (25.0)	21 (47.7)	χ^2= 4.9 , **P**= 0.03
Q29: You would treat shock by…	9 (20.5)	21 (47.7)	χ^2= 7.3 , **P**= 0.007
Q30: When a casualty is in shock you would use a blanket to**:**	2 (4.5)	15 (34.1)	χ^2= 12.3 , **P**= 0.000*

4. Discussion

Hearing loss among school-going children has been widely reported as a significant health problem in the developing world, including Egypt (Quality Inn & Suites Conference Center, 2009). The results of an earlier study revealed that the prevalence of hearing loss in school-age children was almost 10% (Riad, 1975). Moreover, an Egyptian survey has pointed to hereditary and otitis media with effusion as the commonest causes of hearing loss among preschool children (Abdel-Hamid et al. 2007). Unlike to this study and similar to the most recent ones, the findings of the current study declared that the vast majority of parents of deaf children are not deaf (ITV Signed Stories, 2008 & The National Deaf Children's Society, 2010).

A national household survey conducted to present the prevalence and patterns of hearing impairment in Egypt found that, both male and female gender are equally presented with no significant sex differences (Nationally KECO & NISO Training Current Member, 2009). The current study found that females are more enrolled than male students among the study participants. This may be interpreted in the context of school dropout due to poverty that enforces parents to introduce their deaf children to work in technical workshops to provide financial support to their families and at the same time to relieve the educational financial burden. Klare (2004), supporting this notion noted that students with disabilities who left school did so by dropping out, and concluded that students with disabilities drop out of school at twice the rate of general students. As regarding the residence of deaf students, the study findings showed rural-urban inequities, that could be interpreted in relation to parents' fears from children's disability that keep those from rural areas more prone to the risk of exposure to road accidents because of the long distance between home-place and school-place that is located at an urban city.

The findings of this study does agree with an observation in the developing world that,

childhood hearing impairment is commonest in illiterate parents and those with low socio-economic classes, because of the impact of poor hygienic conditions, inadequate medical follow-up, low immunization rate and misuse of ototoxic medications (Olusanya, Okolo & Adeosun 2004). In contrast, some other studies reported a higher prevalence of otitis media in the higher socio-economic classes, while others found no association between otitis media and socio-economic status (Quality Inn & Suites Conference Center, 2009). Given this variability, parental literacy by itself is unlikely to be a universal predictor of hearing loss in school-aged children.

Inspite of drawing attention towards children with hearing disability that has taken place during the past few years; researchers have shown that deaf children feel more neglected and less accepted by other children, so that they behave more aggressively. They also added that not only do deaf children show more anger than hearing children; most deaf children also use aggression amongst themselves. So, they are more vulnerable to school accidents that may require first aid assistance (Rieffe, & Meerum Terwogt, 2006).

The gap is still very wide between the needs of deaf children and available services due to a lot of obstacles. The more striking are those posed in communicating with children who have some sort of hearing impairment to raise their awareness about a new issue that they did not hear about it before, such as an inclusive first aid programme (AWR 186 POI).

Emergencies can occur suddenly and without any advance warning. For all individuals who have physical, sensory or cognitive disabilities, medical emergencies present a real challenge. In order to protect them, this requires planning ahead, and adequate preparedness to be self reliant during an emergency. U.S. Department of Homeland Security, (2004) and Queen's Printer for Ontario, (2007), emphasizing that disabled individuals are in the best position to know their functional abilities, and possible needs during and after exposure to an emergency situation.

The study results found deficiencies among deaf children's recall scores. This notion is supported by Liben, (2004) who suggests that deaf children's inadequate recall probably reflect insufficient knowledge of category membership. However, an educational programme to help people prepare for medical emergencies would enable vulnerable people and their caregivers to feel more in control and less anxious. An educational campaign can be conducted for deaf students and their school care-givers about emergency situations and how to help themselves (O'Brien, 2003).

First aid is the provision of initial care for an illness or injury. It is usually performed by a lay person to a sick or injured casualty until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment (First Aid Medical Information, 2010).

Much of first aid is common sense. Basic principles, such as knowing to use an adhesive bandage or applying direct pressure on a bleed, are often acquired passively through life experiences. However, to provide effective, life-saving first aid interventions requires instruction and practical training (First Aid Medical Information, 2010).

Taking an immediate action is the essential principle in first aid. Often bystanders are worried about "doing the wrong thing", so don't attempt any first aid at all. If a person is sick or injured, then they need help, and they need it immediately. A casualty who is not breathing effectively, or is bleeding heavily, requires immediate aid. Prompt effective first aid gives the casualty a much better chance of a good recovery. Careful and deliberate action undertaken without too much delay is most beneficial to the casualty (Principles of First Aid - PARASOL EMT Pty Limited).

There is an increasing recognition of the need to respond to and met the health needs of vulnerable groups within society. There is a range of who may, for a variety of reasons, be vulnerable and this includes people with hearing disabilities. Those people are an integral part of society and need to be recognized and valued as equal citizens (Dolan & Holt, 2008).

5. Conclusion:

Although not enough for all items to be statistically significant, first aid intervention program raised the awareness of deaf students and their school care-givers about first aid intervention in medical emergencies.

6. Recommendations:

Future programs should focus on one section, such as emergency procedures, and emphasize the importance of it.

The educational curriculum of deaf students should include basic information about health, emphasizing on the importance of how to satisfy the

physical as well as the psychological needs of the casualty in case of exposure to medical emergencies.

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