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Awareness of First Aid Principles Among Teachers of Students with Intellectual Disability

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ABSTRACT The study aims to establish the level of knowledge concerning the concepts of first aid among instructors of children with intellectual impairments in the city of Jeddah, and to determine the influence of specific variables, namely, gender, years of experience, work sector and training courses on teachers' awareness. To achieve this goal, the researcher adopted the descriptive survey method along with a prepared questionnaire. The researcher obtained a sample of 252 responses to the study tool. The results indicated that the level of teachers' awareness was average and there were statistically significant differences between the study participants in their level of awareness of the principles of first aid, with such differences being attributable to the gender variable, in favour of males, to the number of years of experience variable in favour of participants with 11 years or more, and to the training courses variable in favour of individuals who received training courses.

INTRODUCTION

First aid is one of the skills that every individual must possess, regardless of the nature of their work or daily lifestyle as everyone is at risk of injury at any moment. It should be noted that the extent of injury varies in severity, some of which the individual themselves can deal with on their own, while others require external intervention to aid, or limit the impact of injury and reduce its complications, until professional medical intervention becomes available (Cetin and Bozak 2020). Naturally, the success of the intervention by those around the injured individual depends upon the extent of their awareness of the correct way to deal with any given injury or incident, since each incident must be dealt with differently. To ensure the success of first aid provided to an injured individual, it is necessary to be familiar with the principles of first aid, which may prove to be lifesaving of an individual (Kaçan 2022). First aid is that simple initial intervention aimed at mitigating the effects that may result from the injury or even at saving the life of the injured individual, pending the availability of specialised medical services (Burns et al. 2019).

To be sure, the school environment is one that most requires the presence of individuals capable of administering first aid, and based upon the natural interaction by students with each other and with the surrounding environment, as such interaction may result in injuries. This is why it is of the utmost importance for schools, especially overcrowded ones, to have a full-time nurse and dispensary in place with frequent visits by highly qualified physicians. Improving regional health units, and increasing their numbers and capabilities is also a must (Burke and Cocoman 2020).

The School Health Affairs Department aims at promoting healthy practices in the school community considering the strategy developed by the National School Health Committee, which has among its many detailed objectives, training (students, teachers, health counselors, health supervisors) on administering first aid (Tassé et al. 2006). Based on the above, the teacher is one of the most important members of any educational institution, being responsible for handling sudden injuries and emergency situations within the school and dealing with them in the correct manner when they occur (Anastasiou and Garametsi 2020). The researchers may therefore conclude that a teacher's level of awareness of the principles of first aid is of great importance. Given such importance, many studies have investigated this aspect of a teacher's responsibilities (Joseph et al. 2015; Arli and Yildirim 2017; Bakke et al. 2017; Al Gharsan and Alarfaj 2019).

Needless to say that the role of teachers of students with intellectual disability is no less (if not more) important than that of the general education teacher, in terms of awareness of the princi-

ples of first aid, since students with intellectual disabilities are more at risk exposed than their normal peers of developing diseases, as well as various symptoms of deterioration in many of their body systems including but not limited to the nervous and skeletal systems and others (Sureshkumar 2021), which may make them more vulnerable to the risk of injury at school.

A recent study by Sureshkumar and Zonneveld (2024) has shown the presence of many health problems in individuals with intellectual disabilities. It is a well-documented fact that many of the famous genetic syndromes associated with low mental capacity, such as Down syndrome, fragile X chromosome syndrome, Brad Willi syndrome, and Williams syndrome, may be accompanied by distinctive health and physical problems. A high percentage of individuals with cerebral palsy may also have many different disabilities in addition to the physical disability, including but not limited to intellectual disability. In addition, epilepsy occurs at a higher rate in individuals with cerebral palsy associated with intellectual as well as physical disabilities, compared to normal individuals (Brown 2016). According to the American Association on Intellectual Developmental Disabilities (2021), Schalock and Luckasson (2021), in its 12th edition, the decline in their level of mental functioning and adaptive behaviour may make such individuals unaware of the dangers surrounding them, or even how to deal with them.

For those very reasons, dealing with students with intellectual disabilities requires awareness of the principles of first aid to be able to handle health problems associated with such disability, and to deal with injuries that may occur during the school day in the correct way. However, despite the importance of the awareness by teachers of students with intellectual disabilities of the principles of first aid, there were no studies, to this researcher's knowledge and belief, conducted in this field. This study aims, therefore, to identify the level of awareness of teachers of students with intellectual disabilities of these principles, and to shed light on the importance of such awareness (Foreman 2009).

Alzahrani and Algahtani (2025); Algahtani (2024a), has consistently indicated a lack of first aid knowledge among general education teachers. This exploratory study extended this investigation to teachers of students with intellectual disabilities. Findings from a questionnaire administered to 15 teachers revealed a significant deficiency in first aid knowledge, particularly in handling common medical emergencies like seizures, respiratory obstruction, and diabetes. Observations during classroom interactions further confirmed this lack, highlighting inadequate responses to student injuries and a reliance on the school nurse. These findings underscore the urgent need for targeted first aid training programs for teachers of students with intellectual disabilities.

Objectives of the Study

The study aimed to achieve the following objectives:

- To assess the overall level of first aid knowledge among teachers of students with intellectual disabilities in Jeddah.
- To compare the first aid knowledge of male and female teachers of students with intellectual disabilities in Jeddah.
- To investigate the relationship between teaching experience and first aid knowledge among teachers of students with intellectual disabilities in Jeddah
- To examine the differences in first aid knowledge between teachers in the public and private sectors who work with students with intellectual disabilities in Jeddah.
- To evaluate the impact of first aid training on the level of first aid knowledge among teachers of students with intellectual disabilities in Jeddah

Research Question

The study aimed to answer the research questions for what is the level of first aid awareness among teachers of students with intellectual disabilities in Jeddah?

Sub-questions

The study aimed to answer the following research sub-questions:

Gender: How does the level of first aid awareness differ between male and female teachers of students with intellectual disabilities in Jeddah?

Teaching Experience: Is there a correlation between the level of first aid awareness and teaching experience among teachers of students with intellectual disabilities in Jeddah?

Employment Sector: How does the level of first aid awareness vary between teachers in the public and private sectors of Jeddah?

Training Participation: Does participation in first aid training courses have a significant impact on the level of first aid awareness among teachers of students with intellectual disabilities in Jeddah?

Importance of the Study

This study is expected to increase attention to first aid in the field of intellectual disabilities. The study addresses the topic of first aid principles and the level of awareness among teachers of students with intellectual disabilities, given their close and constant interaction with students. This research aims to provide a theoretical framework for first aid principles, which is essential for ensuring the safety of students with intellectual disabilities during the school day. There is a scarcity of previous Arabic studies on first aid principles among teachers of students with intellectual disabilities. To the best of the researcher's knowledge, this study is the first of its kind.

Intellectual Disability

Individuals with intellectual disabilities constitute a significant portion of the special education population. They exhibit intellectual abilities below the average range (Hofmann and Müller 2021). The definition of intellectual disability has evolved over time, incorporating various perspectives such as medical, psychometric, social, and educational. The current definition, provided by Sureshkumar and Zonneveld (2024), the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5 2013), characterises intellectual disability as a developmental disorder marked by deficits in intellectual functioning and adaptive behaviours that hinder daily life activities across multiple domains, including conceptual, social, and practical skills. Intellectual disability has been defined in various ways by different organisations. The American Association on Intellectual and Developmental Disabilities (AAIDD) and the American Psychiatric Association (APA) have provided comprehensive definitions. The AAIDD's definition emphasises deficits in intellectual functioning and adaptive behaviours, while the APA's definition highlights the developmental nature of the disorder. Additionally, the Teacher's Reference Guide for Intellectual Education Programs in Saudi Arabia offers a specific definition for the Saudi context, emphasising limitations in both intellectual functioning and adaptive behaviours, and an onset before the age of eighteen (Shree and Shukla 2016).

Intellectual disabilities vary in severity, ranging from mild to profound. Individuals with mild disabilities demonstrate minimal deviation from typical development and are often integrated into regular education settings. The trend in Saudi Arabia has been towards inclusive education, ensuring equal educational opportunities for all students. The country has established specialised educational institutions, such as institutes for intellectual disabilities, and implemented inclusive education practices in general schools to support students with disabilities. These efforts align with the broader global movement towards providing education in the least restrictive environment (Patel et al. 2020).

Individuals with intellectual disabilities often experience a range of health problems. Syndromes associated with intellectual disabilities, such as Down syndrome, Turner syndrome, Angelman syndrome, Sturge-Weber syndrome, and Williams syndrome, can lead to various health complications (Robinson et al. 2016). Additionally, individuals with intellectual disabilities frequently face musculoskeletal disorders, chronic diseases, and other health conditions, including endocrine, nutritional, metabolic, respiratory, neurological, eye, ear, cardiovascular, gastrointestinal, musculoskeletal, and congenital disorders (McMahon and Hatton 2021). Individuals with intellectual disabilities exhibit a wide range of physical characteristics, which can vary in severity and are influenced by factors such as the degree of disability, age, and support services received. Common physical characteristics include sensory impairments, neurological deficits, speech impairments, and increased motor activity. They are also more susceptible to illnesses (Wallace and Scheepers 2019). Physical challenges faced by individuals with intellectual disabilities may include musculoskeletal disorders, cerebral palsy, seizures, and injuries resulting from abuse (McMorris et al. 2015). While individuals with mild intellectual disabilities may not exhibit significant differences in physical growth, they may experience slower growth rates. Physical characteristics like height, weight, and

body build are generally influenced by genetics, except in cases of specific syndromes like Down syndrome. Intellectual disability may also co-occur with or be a result of physical disabilities (Baksh et al. 2023).

First Aid

First aid knowledge is essential for maintaining a healthy school environment and ensuring prompt response to emergencies. Preparedness can significantly reduce complications and suffering caused by injuries. First aid involves providing immediate, temporary medical care until specialised assistance arrives. It can be lifesaving and does not require advanced medical equipment or skills (Hendrix et al. 2020).

First aid is the immediate care provided to an injured or ill person until professional medical help arrives. It is typically administered by bystanders with minimal training and equipment. First aid can include basic procedures like wound cleaning, minor burn treatment, over-the-counter medication, removing foreign objects, massage, and hydration for heat stress (Abbasgholizadeh et al. 2018). Teachers play a crucial role in providing immediate first aid to students experiencing medical emergencies. Their intervention can be lifesaving and help prevent complications until professional medical assistance arrives (Banfai et al. 2017). The effective administration of first aid requires a focus on life preservation, stabilisation of the patient's condition, and expedited recovery from injuries or illnesses. These overarching objectives should guide the actions of instructors and first responders. Furst (2018), in his comprehensive work on first aid, outlined several fundamental principles that must be considered for successful first aid administration and patient survival. These principles include:

Complete control of the incident scene: Ensuring the safety of both the rescuer and the injured party.

Presuming life: Avoiding the assumption of death based solely on the absence of visible signs of life, such as breathing or a heartbeat.

Removing the casualty from danger: Moving the injured person away from the source of harm.

Addressing life-threatening conditions: Prioritising the management of life-threatening conditions such as respiratory failure, cardiac arrest, bleeding, and shock.

Providing immediate care: Administering necessary first aid interventions before transporting the casualty to a medical facility.

Ensuring patient comfort: Providing reas surance and comfort to the injured individual.

Documenting the incident: Accurately recording all relevant information about the incident, including the actions taken.

Accidents are common in school settings, requiring teachers to administer first aid. The most frequent incidents include nosebleeds, stomach pain, vomiting, bruises, sprains, and facial injuries (Faydali et al. 2019). The researchers also identified cardiopulmonary resuscitation (CPR), fainting, choking, diabetic emergencies, seizures, bleeding, nosebleeds, dental injuries, and fractures as the most common first aid situations in schools. To improve awareness, the teacher should provide an overview and management guidelines for each of these common incidents as follows.

Nosebleeds are common occurrences caused by the rupture of nasal blood vessels. They can result from various factors, including high blood pressure or nasal injuries. To manage a nosebleed, one should lean forward, apply pressure to the soft part of the nose for 10 minutes, and avoid activities that can dislodge blood clots. If bleeding persists for over 30 minutes, seek medical attention. It is important to note that nosebleeds following a head injury may indicate a skull fracture and require immediate medical evaluation (Tunkel et al. 2020). Also, poisoning occurs when a harmful substance enters the body, causing damage. If poisoning is suspected, immediate emergency medical assistance should be sought. Retaining the poison or its container can aid in identification and treatment. For inhalation, move the victim to fresh air and encourage deep breathing. For skin or eye exposure, wash the affected area with water for 15-20 minutes (Cornell et al. 2022).

On the other hand, choking occurs when a foreign object obstructs the airway, if an individual is choking but able to talk, breathe, or cough, they may be able to expel the object independently. If choking persists, five back blows followed by abdominal thrusts should be performed. If the individual becomes unconscious, they should be placed on the ground and emergency services contacted immediately (Sheppard et al. 2017).

Moreover, fainting is a temporary loss of consciousness caused by insufficient blood flow to

the brain. It can be triggered by factors like hunger, temperature changes, or prolonged standing. To manage fainting, the individual should be laid down with their feet elevated, tight clothing loosened, and the environment well-ventilated. If consciousness is not regained within a few minutes, check for breathing and pulse, and seek immediate medical attention (Awad and Alfaqih 2024).

During a seizure, ensure the individual's safety by removing hazards and providing head protection. Position the person on their side for easier breathing. After the seizure, monitor their pulse and breathing. Contact emergency services if the seizure lasts longer than five minutes. Avoid forcefully restraining the individual or placing objects in their mouth, as these actions can be harmful (Muthaffar et al. 2024).

Bleeding is the loss of blood from a rupture of blood vessels (arteries, veins, or capillaries) due to an injury. Bleeding can be internal, where it cannot be directly observed, or external, where blood is visible on the body's surface), to manage external bleeding, ensure proper hygiene by washing hands and wearing gloves. Apply direct pressure with sterile gauze to the wound, ensuring no foreign objects remain. Clean the wound with sterile water, discard used gauze and cover the wound with a clean dressing. Wash hands and disinfect the area after treatment (Sarvas et al. 2024).

Dental injuries are common during physical activities. If a permanent tooth is knocked out, handle it by the crown, clean it with water, and keep it moist until seeking dental care within 30 minutes. If reinsertion is not possible, store the tooth in milk or place it in the mouth next to the cheek (Martin et al. 2019).

Cardiopulmonary resuscitation (CPR) is a lifesaving technique used in emergency situations to revive a person whose heart and breathing have stopped. It involves two primary actions of artificial respiration and chest compressions. Artificial respiration provides oxygen to the lungs, while chest compressions apply pressure to the chest, specifically between the breastbone and spine, to pump blood to vital organs, particularly the brain (Deegan et al. 2024).

According to Ang et al. (2021), bruising occurs due to the leakage of a small amount of blood into the tissue beneath the skin because of injury to the blood vessels near the skin's surface. The trapped blood appears as black and blue marks, and sometimes as red spots. Bruises can be treated by elevating the affected area and applying cold compresses or an ice pack to the bruise for one to two days. It is also important to care for the injured area and provide it with ample rest. Certain ointments can be used to alleviate pain. It is important to note that some cases require medical attention, such as:

- If the pain is severe or the bruise is larger than usual
- If bruising occurs easily, accompanied by abnormal bleeding from the gums or nose, or blood in the eyes or stool.
- If bruises appear suddenly without a known cause.

A sprain occurs when a foot's ligaments are torn or stretched. Symptoms include pain, redness, bruising, swelling, and limited joint movement. To manage a sprained ankle, rest, apply cold compresses, elevate the ankle, and use over-the-counter pain relievers. If pain or swelling persists, seek medical attention. Immobilising the sprained area with a splint can prevent further complications (Cetin and Bozak 2020).

Facial injuries can range from minor lacerations to severe fractures. While minor injuries can often be treated at home, severe injuries require immediate medical attention. Simple facial injuries should be cleaned gently, debris removed, and the area left open unless bleeding or pus is present. If a dressing is used, it should be changed regularly. Monitor the wound for signs of infection (Martin et al. 2019).

Vomiting is a condition characterised by the forceful expulsion of the stomach contents through the mouth. It can be triggered by various factors, including overeating, food poisoning, gastrointestinal diseases, stomach ulcers, and appendicitis. Vomiting can often be alleviated by fasting and consuming small amounts of soothing liquids such as milk and water. However, if vomiting persists for more than an hour, medical attention should be sought (Martin et al. 2019).

Diabetes is a chronic condition affecting the body's ability to regulate blood sugar levels. Hyperglycemia (high blood sugar) and hypoglycemia (low blood sugar) can have similar symptoms, making immediate medical attention crucial for both. If blood sugar levels reach 240 mg/dL, seeking emergency medical care is essential (Chen et al. 2021).

A fracture is a medical condition that occurs when a bone is subjected to excessive force, such as a fall, a car accident, or excessive stress on the

bone. Some fractures are caused by underlying medical conditions that weaken the bones, known as pathological fractures. Examples include osteoporosis and certain types of cancer. There are two main types of fractures, that is, closed fractures, which do not break the skin, and open fractures, which do penetrate the skin. Open fractures are considered more serious (Berkvens et al. 2021).

Teachers of Students with Intellectual Disabilities

Special education teachers play a crucial role in promoting the health and well-being of students with disabilities. They are responsible for participating in health awareness programs, identifying students in need of healthcare, and detecting health problems that may impact academic progress (Walter et al. 2023). Given the significant amount of time students with disabilities spend in educational settings, they are at a higher risk of injuries compared to their peers without disabilities. This increased vulnerability is influenced by their cognitive, physical, and health characteristics.

Teachers play a crucial role in responding to unexpected emergencies that occur within the school environment. According to the School Health Department's Emergency Response (Trust and Whalen 2021), a teacher's responsibilities during emergencies include the following:

- Prior knowledge of students' health conditions: Teachers must have prior knowledge of students with chronic health conditions such as diabetes, asthma, epilepsy, and others.
- Prompt response to student complaints: Teachers should respond swiftly to complaints from injured students.
- Immediate notification to the school principal: Teachers must inform the school principal of the emergency immediately.
- Providing first aid: Teachers, in collaboration with the school nurse, should administer first aid to injured students and continue to monitor their condition. For severe cases, teachers may need to accompany the stu dent to the hospital.
- Providing psychological and emotional support: Teachers should offer emotional support to injured students.

Teachers serve as the initial responders to school emergencies and are crucial in administering first aid. Their first aid knowledge significantly impacts the timeliness and effectiveness of student care (Algahtani 2024b). Trained teachers demonstrate greater confidence and competence in first aid administration, reducing the need for unnecessary emergency medical services and facilitating effective communication with medical professionals (Neyisci 2024). Teachers may be hindered from providing first aid due to a lack of knowledge, limited training opportunities, and insufficient first aid facilities and equipment in schools. These factors can be attributed to a lack of emphasis on first aid training by school administrations, the absence of mandatory training requirements, and time constraints faced by teachers Qureshi et al. 2018; Abraham et al. 2023). Teachers' age, experience, academic specialisation, and grade level taught can influence their first aid knowledge. Older teachers and those with more experience tend to demonstrate higher levels of first aid awareness (Galindo et al. 2017). Teachers in scientific fields and those teaching primary grades may also have higher levels of first aid knowledge (Algahtani 2021). These factors contribute to teachers' preparedness to handle emergencies and ensure student safety.

METHODOLOGY

A descriptive survey method was employed for this study, which aimed to measure first aid awareness among special education teachers in Jeddah. This method is suitable for describing and interpreting reality through quantitative or qualitative analysis (Chardavoyne et al. 2022). It allows for the identification, justification, evaluation, and comparison of conditions and practices (Sankhyan et. al 2022).

Research Population and Sample

The current study population consisted of all special education teachers for students with intellectual disabilities in Jeddah, which amounted to 655 teachers according to Jeddah Education Department statistics in 2023, as well as the Ministry of Labour and Social Development statistics in 2022. The study population was further divided into 506 teachers in the public sector and 149 teachers in the private sector. A simple random sample was drawn from the entire study population, resulting in a sample size of 252 teachers.

The study sample comprised 252 teachers of students with intellectual disabilities, with a gender distribution of 30.2 percent male and 69.8 percent female participants, reflecting a predominantly female workforce in the field. The study sample consisted primarily of male participants (69.8%) with a majority having 11 or more years of experience (50.8%). Most participants (69.0%) worked in the public sector, while 48.0 percent had not received first aid training. These findings highlight the demographic characteristics of the study sample. To establish the content validity of the questionnaire, an expert panel consisting of eight specialists in special education and first aid was convened. The experts evaluated the questionnaire's ability to measure the intended constructs, its alignment with the study objectives, and the clarity, relevance, and linguistic accuracy of its items. Based on their feedback, the questionnaire underwent revisions, including the removal of redundant items and the consolidation of specific injury categories into a more general category. Additionally, item 13 was clarified. The final version of the questionnaire comprises 17 items. To establish the internal consistency of the instrument, a pilot study was conducted with 35 special education teachers in Jeddah who were not included in the main study sample. Pearson's correlation coefficient was employed to assess the inter-item consistency of the questionnaire, measuring the degree to which individual items correlate with the overall scale score.

The internal consistency of the questionnaire was assessed using Pearson's correlation coefficients, which revealed positive and statistically significant correlations between each item and the total scale score ($p < 0.01$). These findings suggest that the questionnaire exhibits strong internal consistency and is a reliable instrument for measuring the intended construct. To assess the reliability of the research instrument, both the split-half method and Cronbach's alpha coefficient (α) were employed.

The questionnaire demonstrated high internal consistency, as evidenced by a Cronbach's alpha coefficient of 0.865 and a split-half reliability coefficient of 0.891. These robust reliability estimates suggest that the instrument is a valid and reliable measure of the construct under investigation. The final questionnaire comprises 17 items organised into a single scale. Respondents were required to indicate their level of agreement with each statement using a 4-point Likert scale comprising 'to a great extent', 'to a moderate extent', 'to a low extent', or 'I am unaware of this'. To determine the criterion used in the study, the length of the Likert scale items was calculated by determining the range between the scale scores (4-1 = 3) and then dividing it by the highest value on the scale to obtain the cell length (3/4 = 0.75). This value was then added to the lowest value on the scale (1) to determine the upper limit of this cell. Thus, the cell length was as shown in the following table, which shows the classification of the levels of awareness of teachers of students with intellectual disabilities about first aid principles in Jeddah city.

RESULTS

This research sought to explore teachers of intellectually disabled students about first aid principles in the region of Jeddah, which would relate specifically to total awareness, while assessing related factors like gender, experience of teaching, and current work sectors, and if at all exposed to any previous first aid training course. These results are thus indicative of strengths and gaps in teachers' preparedness for emergencies among students with intellectual disabilities, who have heightened vulnerability to health complications and injuries. The findings target the identification of areas of strength and weakness with a view to informing targeted interventions and policies aimed at enhancing first aid knowledge and practices among educators.

Table 1 reveals that the mean level of awareness among teachers of students with intellectual disabilities in Jeddah regarding first aid principles was 2.9118, indicating a moderate level based on the study's criteria. This result suggests that the teachers' overall awareness of first aid principles was moderate, as most questionnaire items received a moderate rating.

The results in Table 8 further demonstrate that most items assessing teachers' awareness of first aid principles in Jeddah were rated as moderate. Items 2, 8, and 11 received the highest ratings, all categorised as high. When ranked according to the level of agreement among respondents, these items were:

Item 8: "I would advise teachers of students with intellectual disabilities to take first aid training courses." This item received the highest level of agreement, with a mean of 3.84.

Table 1: Responses of study sample regarding teachers' awareness of first aid principles for students with intellectual disabilities

	Statement	*Mean*		*Standard deviation*	*Rank*
		Mean value	*Level of awareness*		
1	I understand the concept of first aid.	2.84	Moderate	0.751	7
2	I understand the importance of first aid in maintaining the safety of students with intellectual disabilities in the school environment.	3.57	High	0.673	3
3	I have knowledge of the signs of response to first aid intervention provided by the rescuer.	2.60	Moderate	0.829	14
4	I know the normal range of vital signs in the human body.	2.58	Moderate	0.944	15
5	I know the principles of first aid.	2.71	Moderate	0.918	10
6	I have knowledge of the contents of a first aid kit.	2.95	Moderate	0.807	6
7	I know how to use the contents of a first aid kit as needed.	2.78	Moderate	0.822	8
8	I would advise teachers of students with intellectual disabilities to take first aid training courses.	3.84	High	0.465	1
9	I am proactive in participating in courses to develop individual skills in first aid.	3.16	Moderate	0.969	4
10	I know the correct procedures for first aid when a student with intellectual disabilities is injured.	2.68	Moderate	0.933	12
11	I know the Red Crescent number in case of need for assistance.	3.62	High	0.735	2
12	I have knowledge of life-threatening injuries that require first aid in case of multiple injuries.	2.76	Moderate	0.911	9
13	I have knowledge of the correct way to assess the injury site.	2.66	Moderate	0.971	13
14	I know how to conduct an initial assessment when responding to a situation.	2.51	Moderate	0.890	16
15	I have the knowledge to assess the severity of an injury.	2.40	Low	0.958	17
16	I have adequate knowledge of the injuries and illnesses that students with intellectual disabilities may be exposed to in schools.	2.70	Moderate	0.959	11
17	I am interested in knowing in advance about the health problems of students with intellectual disabilities and how to deal with them when they occur in the school environment.	3.15	Moderate	0.927	5
	Total	2.9118	Moderate	0.58872	-

Item 11: "I know the Red Crescent number in case of need for assistance." This item ranked second in terms of agreement, with a mean of 3.62.

Item 2: "I understand the importance of first aid in maintaining the safety of students with intellectual disabilities in the school environment." This item ranked third, with a mean of 3.57.

Conversely, Table 8 shows that the lowest level of awareness among teachers was for item 15, "I have the knowledge to assess the severity of an injury." This item ranked seventeenth, with a mean of 2.40, and was categorised as low. Item 14, "I know how to conduct an initial assessment when responding to a situation", ranked second to last with a mean of 2.51.

Results for the Second Research Question

To investigate the influence of gender on first aid knowledge among teachers of students with intellectual disabilities in Jeddah, an independent sample t-test was conducted. The mean scores of male and female teachers on the first aid knowledge questionnaire were compared. The results are presented in the following Table 2.

As shown in Table 2, the independent samples t-test revealed a statistically significant difference in first aid awareness between male and female teachers of students with intellectual disabilities in Jeddah ($p = 0.014$). Male teachers exhibited significantly higher levels of first-aid knowledge as compared to female teachers.

Results for the Third Research Question

The third research question explored the association between teaching experience and first aid knowledge among teachers of students with intellectual disabilities in Jeddah. A one-way ANOVA

Table 2: Examining gender differences in first aid awareness among teachers of students with intellectual disabilities in Jeddah: An independent samples T-test Analysis

	Gender	*Number*	*Mean*	*Standard deviation*	*t-value*	*Probability value (P-Value) (Sig.)*	*Statistical significance*
Level of Awareness of First Aid Principles	Male	76	3.0503	.53160	2.480	0.014	Statistically
	Female	176	2.8519	.60337			

was used to compare mean scores across various experience levels as shown in the Table 3.

As indicated in Table 3, the significance level (Sig.) for the level of awareness among teachers of students with intellectual disabilities in Jeddah is 0.023. This value is less than the conventional significance level of 0.05, indicating that there are statistically significant differences in the level of awareness among these teachers, attributable to years of experience. To determine the specific direction of these differences, a post-hoc Scheffé test was conducted following confirmation of data homogeneity. The results were as follows in Table 4.

As shown in Table 4, post-hoc analysis using the Scheffé test revealed a significant difference in first aid awareness between teachers with 11+ years of experience and those with 6-10 years of experience ($p <$ [significance level]). Teachers with 11+ years of experience demonstrated significantly higher levels of first aid knowledge compared to their colleagues with 6-10 years of experience. No significant differences were observed between other experience groups.

Results For the Fourth Research Question

As shown in Table 5, the analysis of variance (ANOVA) revealed no statistically significant differences in first aid awareness among teachers of students with intellectual disabilities in Jeddah based on their employment sector ($p = 0.308$). This suggests that the level of first aid knowledge is not significantly influenced by whether teachers work in the public or private sector.

Table 3: Examining the impact of teaching experience on first aid awareness among teachers of students with intellectual disabilities in Jeddah: A One-Way ANOVA Analysis

		Sum of squares	*Degrees of freedom*	*Mean square*	*t-value*	*Probability value (P-Value) (Sig.)*	*Statistical significance*
Level of Awareness of Teachers of Students With Intellectual Disabilities Regarding First Aid Principles	Between groups	2.591	2	1.296	3.822	.023	Statistically significant
	Within groups	84.402	249	.339			
	Total	86.993	251				

Table 4: Examining the impact of teaching experience on first aid awareness: A post-hoc Scheffé analysis of teachers of students with intellectual disabilities in Jeddah

Experience A	*Experience B*	*Mean difference (A-B)*	*Probability value (Sig.)*	*Statistical Significance*
1-5 years	6-10 years	0.09276	0.682	Not significant
	11+ years	-0.15349	0.204	Not significant
6-10 years	1-5 years	-0.09276	0.682	Not significant
	11+ years	-0.24625*	0.038	Significant
11+ years	1-5 years	0.15349	0.204	Not significant
	6-10 years	0.24625*	0.038	Significant

Table 5: Independent samples T-test to identify significant differences in the level of awareness of first aid principles among teachers of students with intellectual disabilities in Jeddah, attributed to the variable of employment sector

	Employment sector	*Number*	*Mean*	*Standard deviation*	*Calculated t-value*	*Probability value (Sig.)*	*Statistical significance*
Level of Awareness of Teachers of Students With Intellectual Disabilities Regarding First Aid Principles	Government	174	2.9371	.59783	2.1021	0.038	Not statistically significant
	Private	78	2.8552	.56753			

Results For the Fifth Research Question

According to the results presented in Table 6, the independent samples t-test revealed a statistically significant difference in first aid awareness between teachers who had received training and those who had not ($p < 0.01$). Teachers who had undergone first aid training demonstrated significantly higher levels of knowledge compared to their untrained counterparts.

DISCUSSION

This study assessed the level of awareness about first aid principles among teachers of students with intellectual disabilities in Jeddah, considering gender, years of experience, work sectors, and participation in training. The results indicate an overall moderate level of awareness, which agrees with the findings of previous studies indicating that educators lack knowledge in first aid principles (Joseph et al. 2015). This level of awareness is at a moderate level. It becomes a concern when considering the heightened vulnerability of students with intellectual disabilities to injuries and health complications (Sureshkumar and Zonneveld 2024; Baksh et al. 2023).

Awareness Levels and Key Observations

The results showed that the mean level of awareness for the teachers was moderate, at 2.91. Items ranked highest in proactive participation in training with a mean of 3.84, followed by knowledge of emergency contact numbers, with a mean of 3.62, and the importance of first aid in maintaining safety, with a mean of 3.57. In contrast, the lowest-ranking awareness was of assessing the severity of injury, with a mean of 2.40, and initial assessment with a mean of 2.51. This suggests that even though teachers are aware of the importance of first aid and the need to be trained, their practical knowledge and actual skills in handling emergencies are insufficient. These findings agree with those by Faydali et al. (2019), who also identified shortcomings in first aid preparedness among educators.

Gender Differences in Awareness

In the present study, statistically significant gender differences were found in first aid awareness, where male teachers had higher knowledge levels (mean = 3.05) than female teachers (mean = 2.85; $p = 0.014$). This finding is in line with the

Table 6: Examining the impact of first aid training on the level of awareness among teachers of students with intellectual disabilities in Jeddah: An independent samples T-test Analysis

Employment	*Training course*	*Number*	*Mean*	*Standard deviation*	*Calculated t-value*	*Probability value (Sig.)*	*Statistical significance*
Level of Awareness of Teachers of Students With Intellectual Disabilities Regarding First Aid Principles	I haven't received any training courses.	131	2.7104	.57235	6.036	0.000	Statistically Significant
	I have received training courses.	121	3.1298	.52711			

results obtained by Galindo et al. (2017) and Neyisci (2024), indicating that male teachers might be exposed more to first aid cases or training. In addition, even though female teachers are the majority in the teaching fraternity, they may have different constraints in the way of time or facility to hands-on training. The training programs need sensitive and inclusive approaches if disparities are to be addressed appropriately.

Impact of Teaching Experience

The number of years of teaching experience had a significant effect on the level of first aid awareness, with the p-value being 0.023. According to the post-hoc Scheffé test, the number of years of teaching experience greater than 11 years showed greater awareness than those between 6-10 years. Thus, these findings are in concert with those studies by Algahtani (2021) and Galindo et al. (2017), indicating experience builds knowledge and confidence in handling emergencies. Experienced teachers often accumulate practical insights through repeated exposure to real life situations, reinforcing their ability to respond effectively. Institutions can leverage this expertise by involving senior educators in peer training and mentoring programs.

Awareness by Employment Sector

There was no significant difference in awareness of first aid between teachers of public schools (mean = 2.94) and teachers of private schools (mean = 2.86; $p = 0.308$). It infers that institutional affiliation did not influence first aid knowledge. On the other hand, it reflected the universal gap across the private and public sectors. In this regard, the call for systemic intervention places great emphasis on first aid training as a mandatory need for all teachers irrespective of type of employment.

Influence of Training Participation (Research Question 4)

A very strong positive correlation was observed in the study between first aid training and awareness levels ($p < 0.01$). Teachers who had received training scored significantly higher, with a mean of 3.13, compared to the untrained teachers, whose mean score was 2.71. This finding underlines the importance of structured training programs, something also concluded by Banfai et al. (2017) and Abraham et al. (2023). Training provides both theoretical and practical knowledge to equip the teachers to handle these cases of emergency. Since there are more health risks involved among the intellectually disabled children, training modules should specifically address their needs (Sureshkumar and Zonneveld 2024).

Implications for Teachers of Students with Intellectual Disabilities

The overall moderate awareness among the teachers is a cause of alarm, considering the particular vulnerabilities of students with intellectual disability. Seizures, choking incidents, and musculoskeletal trauma are common among these cases, which require specific intervention through first aid management (McMahon and Hatton 2021; Muthaffar et al. 2024). Teachers' inability to estimate injury seriousness or conduct preliminary checks further places students at risk. Recent studies advocate for integrating first aid modules into teacher education programs, ensuring that educators are adequately prepared to manage emergencies (Kaçan 2022).

CONCLUSION

This study has shown that knowledge of first aid among teachers of students with intellectual disability is important in dealing with emergencies and safeguarding the students. From the general findings, the level of first aid knowledge among the respondents is moderate, although the disparities in knowledge are dependent on certain factors such as gender, teaching experience, and attendance at first aid training. Male teachers and those with more than 11 years of teaching experience showed a higher level of awareness, which means experience seems to play an important role in preparedness. Further, participation in first aid training was one of the strong determinants in knowledge and skill improvement, indicating the value of structured training programs. These insights underline the need for focused interventions that will address the gaps in first aid knowledge and equip teachers with the competencies needed to handle emergencies appropriately, more so in contexts where students have intellectual disabilities and hence are more prone to health related challenges and injuries in school environments.

RECOMMENDATIONS

Educational institutions should institute mandatory first aid training programs for all teachers, with an emphasis on practical skills tailored to the unique needs of students with intellectual disabilities. These programs should include hands-on practice and scenario-based learning to enhance teachers' confidence and competence in managing emergencies. Moreover, frequent refresher courses are important to keep the first aider current and relevant, since best practices in first aid are ever-evolving. Further, training needs to cover common health problems experienced by students with an intellectual disability including seizures, choking, and injuries so that educators can respond effectively. This would involve some collaboration with health professionals and emergency response experts to come up with ideal training material and holding of workshops. Clear emergency response protocols should also be established in the schools, supported by accessible first aid kits containing essential medical supplies. Policymakers and educational leaders should relevantly distribute enough resources to ensure the availability and maintenance of first aid facilities and equipment. Furthermore, awareness creation through targeted campaigns and integration of first aid training in teacher education can help to institutionalise these practices. Finally, creating a culture of safety and preparedness among the educational institutions will not only ensure the safety of students but also make educators confidently able to act with effectiveness during any emergency situation.

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