

## **Eurasian Journal of Educational Research**

www.ejer.com.tr



# Assessing First Aid Capability Among Teachers of Students with Intellectual Disabilities

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## ARTICLE INFO

## ABSTRACT

Article History:
Received: 31 July 2024
Received in revised form: 01 January 2025
Accepted: 27 Febuary 2025
DOI: 10.14689/ejer.2025.115.05

Keywords

school injuries, students, intellectual disability, first aid, teachers

Purpose: During school hours, students often require immediate medical intervention by teachers for addressing injuries and minor wounds. Teachers should possess the requisite first aid skills to avoid any serious consequences of injuries to students. This study aimed to investigate special education teachers' capabilities to provide first aid to their students with intellectual disabilities. Method: A cross-sectional study was conducted, and data were collected via a questionnaire. The sample comprised 300 male and female teachers of students with intellectual disabilities. Findings: The findings indicate that teachers are largely incapable of providing first aid to their students with intellectual disabilities. In addition, male teachers were found to be more capable in providing first aid compared to the female teachers; similarly, teachers with more than 20 years of teaching experience were found to be more capable than teachers with less teaching experience. In addition, this

study found that attending training courses influences teachers' capabilities compared to those who have attended few or no training courses. **Implication for Research and Practice:** The results of the current study suggest that teachers' ability to deal with injuries requires improvement in a way that enhances teachers' practice and confidence.

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### Introduction

First aid is the initial step in helping a person who is ill or injured by providing appropriate and timely support to preserve life, prevent the injury from worsening, and reduce disability or serious harm until medical care becomes available (Barathi & Manisha, 2019). During school hours, students face various risks of injury, ranging from minor wounds to severe incidents that may require immediate medical intervention by teachers, who interact closely with students and are responsible for addressing injuries (Vasilopoulos et al., 2021). Among individuals with intellectual disabilities, the risk of

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sustaining an injury is significantly higher than among those without disabilities (Jernbro et al., 2020; Ramirez et al., 2004). The heightened risk is further compounded by the difficulty they have communicating their injuries or seeking assistance in a timely manner, which makes immediate and effective first aid intervention by teachers even more critical, largely due to cognitive and behavioral challenges (Sherrard et al., 2002).

Prior studies have primarily focused on general education teachers, despite the recognition of the importance of possessing first aid knowledge and skills among all educators. It has often been overlooked that special education teachers play an important role in the support of students with intellectual disabilities (Al Gharsan & Alarfaj, 2019; Alruwaili et al., 2024; Alshammari, 2021; Joseph et al., 2015). Few researchers have examined these teachers' ability and confidence in effectively managing injuries in mainstream educational settings, despite the elevated injury risks and distinctive challenges their students face (Jernbro et al., 2020; Ramirez et al., 2004). The rationale for the current study is to address this gap by investigating the first aid capabilities of special education teachers, an area that remains largely under-researched and unexplored (Aljaloud et al., 2022).

The primary purpose of this study, therefore, is to examine the capabilities of special education teachers in delivering first aid. This study explores special education teachers' capabilities in providing first aid to students with intellectual disabilities in mainstream primary schools, considering factors such as gender, teaching experience, and training. Specifically, this study framed two main objectives: (1) To assess the extent of special education teachers' capability to provide first aid to their students with intellectual disabilities. (2) To explore the influence of demographic variables (gender, teaching experience, and attendance in training courses) on these capabilities. To achieve these objectives, following research questions were addressed: (1) To what extent are special education teachers capable of providing first aid to their students with intellectual disabilities? (2) What demographic variables (gender, teaching experience, and attendance in training courses) influence special education teachers' capability to provide first aid? The current study thus addressed issues regarding special education teachers' ability and confidence in effectively managing injuries in mainstream educational settings, to make schools safer and more supportive for all students, especially those with intellectual disabilities.

# Literature Review

Teachers' Knowledge and Capability in First Aid

Previous studies across countries differ in their findings about teachers' knowledge and capability in providing first aid in case of student injuries during school hours. Evidence suggest that teachers' knowledge ranged from good in Iraq (Al-Shatari et al., 2021) and Saudi Arabia (Alshammari, 2021), to moderate in Ethiopia (Workneh et al., 2021), India (Joseph et al., 2015), and Saudi Arabia (Al-Qurain & Al Salman, 2017), and poor in Greece (Vasilopoulos et al., 2021), Saudi Arabia (Al Gharsan & Alarfaj, 2019; Alsulami, 2023; Altamimi et al., 2019), and Iran (Adib-Hajbaghery & Kamrava, 2019). This range of results within one country often in juxtaposition and disagreement with one another indicates that there is no influence of context or consensus on teachers' capabilities. This infers that poor

knowledge may negatively impact teachers' ability to handle accidents, leading to inappropriate responses or unnecessary medical help (de Lima Rodrigues et al., 2015; Trabelsi et al., 2019). Moreover, teachers with poor knowledge may experience increased stress and delay interventions in emergencies (Vasilopoulos et al., 2021). Many teachers fear providing first aid due to legal concerns (Vasilopoulos et al., 2021). This fear may relate to their poor knowledge. In contrast, good knowledge enhances teachers' first aid capabilities (de Lima Rodrigues et al., 2015).

Teachers' knowledge influences their confidence in providing first aid (Adib-Hajbaghery & Kamrava, 2019). In India, over half of teachers with moderate first aid knowledge felt confident in handling school accidents (Joseph et al., 2015). Conversely, 80% of Saudi teachers with poor knowledge lacked confidence (Al Gharsan & Alarfaj, 2019). Authors of other studies have reported similar findings (Al-Qurain & Al Salman, 2017; Trabelsi et al., 2019). However, knowing first aid does not always translate to confidence in practice (Deutsch et al., 2022). In Saudi Arabia, 45% of teachers had good knowledge, but only 23% were confident in applying it (Mansour et al., 2019). This gap may stem from a lack of training, which affects teachers' confidence (Sinclair & Xiang, 2008). Training can enhance confidence (Faydalı et al., 2018; Joseph et al., 2015; Vasilopoulos et al., 2021). Mansour et al. (2019) indicated that more than half of their participants acquired their knowledge of first aid from social media. Hence, having good first aid knowledge may not necessarily contribute to teachers' capability to provide it. Theoretical knowledge is insufficient without practical skills. This indicates that having good knowledge does not necessarily reflect positively on teachers' confidence, which needs to be considered. Alenezi et al. (2024) reports a similar finding that teachers know how to handle choking but lacked confidence.

Alruwaili et al. (2024) conducted recent studies in Saudi Arabia, specifically in the Eastern Province, to determine teachers' level of first aid knowledge. They used a questionnaire as the data collection tool for 371 teachers. The results showed that less than half of the participants were confident in providing first aid. The findings also revealed that training was an important factor in enhancing this confidence; teachers who had received prior training demonstrated a higher level of confidence than their colleagues who had not. These results confirm the importance of training in enhancing teachers' competence and confidence in handling emergency situations and providing first aid effectively. Moreover, 65 teachers participated in a study conducted in Egypt by Salah Eldein Mohammed Mohammed et al. (2025) regarding their knowledge and practice regarding first aid among students with special needs. To assess the teachers' knowledge and practices related to providing first aid to students with special needs, the researcher used two scales, finding that 64% of the teachers had inadequate knowledge of first aid. The teachers expressed dissatisfaction with their own perception of first aid practices.

Researchers have assessed teachers' knowledge of treating injuries and the areas where they needed improvement. Teachers had poor knowledge regarding insect stings, foreign bodies in the ear or nose, epistaxis, hemorrhage, and CPR rhythm (Al-Qurain & Al Salman, 2017; Al Gharsan & Alarfaj, 2019; Joseph et al., 2015; Örs, 2021). Conversely, teachers were knowledgeable about burns, electric shocks, poisoning, fractures, and wound management (Al-Shatari et al., 2021; Al Gharsan & Alarfaj, 2019; Joseph et al., 2015; Vasilopoulos et al., 2021).

Factors Influencing Teachers' Knowledge and Capability in First Aid

Studies highlight several factors affecting teachers' first aid knowledge, one of which is their level of preparedness in the university. Altamimi et al. (2019) recommend including first aid training in teacher education programs. Kizilkaya Namli (2021) emphasize that training benefits physical education teachers. Other researchers find a link between knowledge gaps and a lack of preparation (Joseph et al., 2015; Vasilopoulos et al., 2021). In Ireland, 97% of 592 teachers supported first aid training in teacher education (O'Connor et al., 2023). Professional development courses should also enhance teachers' practical skills (Olmos-Gómez et al., 2021). Training boosts teachers' confidence in providing first aid (Adib-Hajbaghery & Kamrava, 2019; Faydalı et al., 2018), as it improves teachers' knowledge and skills post training. Similar results are found in Brazil (Calandrim et al., 2017) and Hungary (Deutsch et al., 2022). Despite this, many teachers lack first aid training (Al-Shatari et al., 2021; Mansour et al., 2019; Vasilopoulos et al., 2021), affecting their confidence (Al-Qurain & Al Salman, 2017; Vasilopoulos et al., 2021). Calandrim et al. (2017) found that teachers performed better on first aid tests after training. Moreover, Joseph et al. (2015) linked higher first aid knowledge to training. Studies have also tied confidence in first aid to training in Australia (Berger et al., 2015), Belgium (Vermonden et al., 2023), and Ireland (O'Connor et al., 2023).

Mandatory first aid training is absent in several countries. In Greece and Saudi Arabia, training is not felt a need (Vasilopoulos et al., 2021). Similarly, in India, Joseph et al. (2015) linked teachers' poor knowledge to a lack of compulsory training. A few studies recommend first aid training mandatory (O'Connor et al., 2023), while others suggest combining theory with hands-on practice (Adib-Hajbaghery & Kamrava, 2019; Alshammari, 2021; Calandrim et al., 2017; Deutsch et al., 2022; Mansour et al., 2019; O'Connor et al., 2023). In Brazil, training involving presentations and practical exercises significantly improved knowledge of first-aid (Brito et al., 2020).

The gender may also influence teachers' first aid knowledge. In Saudi Arabia, female teachers have shown more knowledge than males (Abdelrahman et al., 2024; Al Gharsan & Alarfaj, 2019). However, Alshammari (2021) found male teachers showing more knowledge overall, whereas female teachers excelled in treating burns and fractures. In Australia, female teachers were more confident in handling injuries (Berger et al., 2015), whereas researchers in India found no gender differences (Hosapatna et al., 2019; Joseph et al., 2015).

Teaching experience is another factor. Researchers in Iraq (Al-Shatari et al., 2021), India (Joseph et al., 2015), Egypt (Mostafa Mohamed et al., 2021), Saudi Arabia (Al-Qurain & Al Salman, 2017), and Ethiopia (Ganfure et al., 2018; Workneh et al., 2021) found that more experience correlated with better knowledge. Moreover, Altamimi et al. (2019) in Saudi Arabia reported that teachers with more teaching experience had confidence in dealing with dental injuries. However, Al Gharsan and Alarfaj (2019) in Saudi Arabia found no correlation between teaching experience and first aid knowledge.

In the context of injuries among students with intellectual disabilities, in Saudi Arabia, Aljaloud et al. (2022) found that common injuries among middle school students with intellectual disabilities included bruises, abrasions, cuts, punctures, bleeding, lacerations, and fractures. In the United States, Sinclair and Xiang (2008) reported frequent injuries

among students with disabilities, including open wounds, sprains, and fractures, with burns and toxic effects being less common. Ramirez et al. (2004) found abrasions, bruises, pinches, cuts, lacerations, wounds, and bleeding most prevalent. However, Ramirez et al. (2004) suggested students with intellectual disabilities had a lower risk of injury than students with other disabilities. Hence there are very few studies that have focused on special education teachers working with students with intellectual disabilities. A need is therefore felt to understand better and improve special education teachers' capabilities to manage injuries among students with intellectual disabilities.

#### Method

## Research Design

This study used a cross-sectional research design (Bryman, 2008). It was conducted across primary, intermediate, and high schools in Saudi Arabia enrolling students with intellectual disabilities. The educational system for students with disabilities, which included students with intellectual disabilities, is based on two systems: 1) children with moderate disabilities who studied in special schools and 2) children with mild disabilities who studied in mainstream schools. Special teachers are assigned to students with intellectual disabilities who study in mainstream schools. They receive specialized training in teaching students with intellectual disabilities.

## Research Sample

An original questionnaire was distributed to all primary, intermediate, and high schools where students with intellectual disabilities were enrolled, and a total of 1,108 male and female teachers worked. Since the aim of the current study was to explore teachers' capabilities to provide first aid, a purposive sampling approach was employed to select the sample of the study. A total of 300 teachers, both male and female, showed interest in participating in the current study, representing about 27% of the study population. These teachers were selected because they worked directly with students with intellectual disabilities, and their views were important. These teachers were also actively involved in providing first aid to students with intellectual disabilities. It is important to mention that these teachers are not representative of all teachers who work with students with intellectual disabilities because the sample was not probabilistic (Bryman, 2008).

# Research Instrument and Data Collection

The data was collected using an online questionnaire shared via Microsoft Forms. The school heads were contacted, in person (male section) or on phone (female section). A letter from the General Administration of Education was provided to each head of school to facilitate the data collection. The school head distributed the consent form and the questionnaire link via WhatsApp to all teachers who taught to students with intellectual disabilities. The researcher checked the rate of response regularly and contacted the school heads every 2 weeks to encourage teachers to participate.

The questionnaire comprising closed-ended questions had three sections. The first section explained the study's objectives and provided an overview of the questionnaire as

well as the contact details of the researcher. The second section comprised items on participants' demographic information, which included dependent variables, namely gender; teaching experience, (less than 10 years, 10–20 years, and more than 20 years); and participation in first aid training courses (not attended any training, attended one training course; attended two training courses; attended three or more training courses). The third section comprised items on 35 injuries that could occur in schools, which represented the independent variable and asked teachers to evaluate (on a 3- point Likert scale) their capability in providing first aid for students with intellectual disabilities for these injuries (Oppenheim, 1992).

The response options included high capability (weight: 3 on the scale; mean range: 2.34–3), low capability (weight: 2 on the scale; mean range: 1.68–2.33), and no capability (weight: 1 on the scale; mean range: 1–1.67). The high capability meant that teachers had complete confidence to deal with injuries and could provide first aid without any hesitation. For example, if a student was bleeding from their nose, the teachers of high capability would confidently deal with the situation; the low capability could provide first aid with a little hesitation while dealing with the bleeding; and no capability would mean having no confidence in handling the bleeding from their nose and would seek help.

The types of injuries that could generally occur in schools and needed first aid were adopted from questionnaires used in prior studies (Al-Shatari et al., 2021; Al Gharsan & Alarfaj, 2019; Aljaloud et al., 2022; Kendrick & Marsh, 1999; Piazza, 2017). These injuries were categorized into dimensions based on frequency. For example, injuries related to bleeding wee categorized under the bleeding case. There were 35 injuries into seven dimensions, which were bleeding cases. Besides, there were categories of burning and electrocution cases, body fracture, body wounds, cases of ingestion of substances in the body, swallowing and poisoning, and breathing issues.

## Data Analysis

The data was analyzed using the SPSS version 24. Various frequencies, percentages, means, and standard deviations were calculated. Independent samples tests and analysis of variance (ANOVA) (significance was set to 5%) were also performed. To test the reliability and validity, the Cronbach's alpha for the instrument was .0870 which showed that the questionnaire had high reliability (Bryman, 2008). For face validity, expert academic staff reviewed the questionnaire to assess the language used and its structure and design. A medical doctor who worked in an affiliated health center verified the content of the questionnaire and provided suggestions for improvement (Bryman, 2008). Moreover, the internal consistency of the research tool was measured by calculating the correlation coefficients between the score of each item and the score of the dimension to which it belonged using the Pearson correlation coefficient. All dimensions of the questionnaire were related to the total score of the dimension to which they belonged, with a statistically significant correlation coefficient at the significance level of 1%. Each dimension was also linked to the total score of the questionnaire, which confirmed the internal consistency between the dimensions of the questionnaire and its items.

## Ethical Considerations

The ethics committee of the university approved this study (no. 4/1443/64708). In addition, permission was obtained from the General Administration of Education to

facilitate the study and distribute the questionnaire. The researcher also obtained informed consent from all participants to participate in this study, and become aware that their participation was voluntary, that they had the right to withdraw at any time without reason, and that no identifying details would be collected from them, and that their participation would be solely for the purpose of the research and their responses would be kept confidential.

#### Results

Table 1 presents details on participants' gender, teaching experience, and number of first-aid training courses attended. There was a higher percentage of male participants (69.7%) compared to female participants (36.3%). Regarding participants' experience in teaching students with intellectual disabilities, more than half (54%) had teaching experience ranging from 10 to less than 20 years. Teachers with more than 20 years of experience represented the second group (30.3%), followed by teachers with less than 10 years of experience (15.7%). More than half of the participants had not attended any training course. Only 7.3% had attended three training courses or more. However, 36.3% had attended between one and two training courses.

Demographic Variables (n=300)

Demographic Variables		Frequency	Percentage	Valid	Cumulative
				Percentage	Percentage
Gender	Male	191	63.7	63.7	63.7
	Female	109	36.3	36.3	36.3
Teaching experience	< 10 years	47	15.7	15.7	15.7
	10–20 years	162	54.0	54.0	54.0
	> 20 years	91	30.3	30.3	30.3
Number of training	None	169	56.3	56.3	56.3
courses attended	1	84	28.0	28.0	28.0
	2	25	8.3	8.3	8.3
	≥3	22	7.3	7.3	7.3

The responses to the questionnaire items revealed the teachers' requisite capabilities to provide first aid to their students with intellectual disabilities. Though all participants had high or medium capabilities; however, having no capabilities in providing first aid was reported in only one category, namely, injuries related to bleeding cases. It was also revealed that the lowest mean values were based on the category of injuries for which teachers reported having no capabilities were cases of ingestion of substances in the body, fracture cases, burning and electrocution cases, swallowing and poisoning, body wounds, and breathing issues, sequentially. The results also revealed that teachers did not have high capabilities to provide first aid for seven injuries including bleeding from the nose, hand, and foot; burns; bites; choking; and head wounds, for which mean values also illustrated teachers' low capabilities. For the remaining injury categories, teachers expressed that they had no capabilities.

Although teachers reported no or low capabilities to provide first aid for a majority of the injuries, the researcher noted higher percentages for some categories, such as bleeding from the nose and hand fracture (25.33%, 23.33%). Meanwhile, for eye wounds, only two teachers reported high capabilities, and three reported high capabilities for a jaw fracture. Regarding low capabilities, the researcher noted the lowest percentage for a jaw fracture (14%), whereas he noted a high percentage for bleeding from a foot injury (62.66%). In addition, 17.33% reported no capabilities to provide first aid for bleeding from a nose injury, whereas 85%, 81.34%, 81%, and 80.67% reported no capabilities for jaw fracture, substance implanted in the eye(s), knee fracture, and ingesting chemicals, respectively. Independent samples' test results revealed an influence of gender on the capabilities of teachers in providing first aid, significant at the 0.05 level (2-tailed). Regarding the influence of teaching experience and attending training courses on teachers' capabilities to provide first aid, the ANOVA results revealed that the mean scores of teachers who attended three training courses or more were the highest among all categories. Moreover, the mean scores of teachers with more than 20 years of experience were the highest among all the categories.

#### Discussion

Teachers' ability to provide first aid is vital for managing minor injuries and preventing complications (de Lima Rodrigues et al., 2015; Vasilopoulos et al., 2021). In this study, all participants expressed having no or limited capabilities in providing first aid. These results are consistent with studies conducted in Greece (Vasilopoulos et al., 2021), Iran (Adib-Hajbaghery & Kamrava, 2019), and Saudi Arabia (Al Gharsan & Alarfaj, 2019; Altamimi et al., 2019). A possible explanation for limited capabilities in providing first aid was the lack of training either at the preservice or in-service stages (Trabelsi et al., 2019; Vasilopoulos et al., 2021). In the current study, more than half of the teachers had not attended any training courses. This indicates the importance of providing training on first aid to increase the capabilities and knowledge of teachers in this area (Calandrim et al., 2017).

Although teachers expressed poor capabilities in providing first aid, there were seven injuries for which teachers reported low capabilities. Interestingly, teachers did not have high capabilities in providing first aid for any of the injuries. This result is in contrast to other studies that revealed teachers' high knowledge, namely in Iraq (Al-Shatari et al., 2021) and Saudi Arabia (Alshammari, 2021), as well as those showing moderate knowledge in India (Joseph et al., 2015) and Saudi Arabia (Al-Qurain & Al Salman, 2017). Teachers' low and no confidence regarding how to provide first aid to their students, when necessary, may needlessly overburden emergency services. However, these injuries could be addressed in school if teachers had the appropriate knowledge and confidence to provide such help to their students.

An interesting finding from this study was that for some injuries, a high percentage of teachers reported being incapable of providing first aid. These injuries included a jaw fracture, substance implanted in the eye(s), knee fracture, and chemicals ingested. In addition, for eye wounds, only two teachers reported high capabilities. Prior studies' authors (Al-Qurain & Al Salman, 2017; Al Gharsan & Alarfaj, 2019; Joseph et al., 2015; Örs, 2021) revealed similar results and found that teachers had poor knowledge of providing first aid for insect stings, intra-aural foreign body cases, epistaxis, intranasal foreign body cases, hemorrhage, and rhythm for CPR. These findings reinforce the importance of increasing the knowledge and confidence of teachers to provide first aid, especially for

these injuries, as a way to reduce delays in providing first aid and avoid danger arising from lack of assistance.

Regarding the influence of gender, teaching experience, and attending training courses on first aid, the study found a significant influence of these variable on teachers' capabilities. For instance, attending training courses on first aid influenced teachers' capabilities, and the more training courses attended (≥ 3), the greater the influence. Studies like (Al-Qurain & Al Salman, 2017; Brito et al., 2020; Vasilopoulos et al., 2021) have found a relationship between low knowledge of first aid and low number of training courses attended. A possible explanation of the teachers' lack of capabilities was that a high percentage (56.3%) had not attended any training courses. Further, the educational system does not require teachers to attend these training courses (Vasilopoulos et al., 2021). Teachers not attending training courses on first aid could reflect negatively on their practice of first aid and influence their capabilities. To address this knowledge gap, teachers' preparation courses should mandate them to attend programs or study modules on knowledge and skills related to practicing first aid (Joseph et al., 2015).

The study findings indicate that females have less capability to provide first aid compared to male teachers, and those with less teaching experience have less capability compared to those with more experience. This signals the need to pay more attention to female teachers and those with less teaching experience to increase their capabilities. In addition, the current study differs from previous studies whose authors reported that female teachers were more knowledgeable in providing first aid (Abdelrahman et al., 2024; Al Gharsan & Alarfaj, 2019). However, it is in line with Altamimi et al. (2019) in Saudi Arabia, who reported that teachers with more experience had more confidence in dealing with dental injuries.

Based on the results, teachers need to be supported in increasing their capabilities to provide first aid through practical training courses. These training courses should focus on injuries related to cases of substances ingested in the body, fractures, burning and electrocution cases, swallowing and poisoning, wounds, breathing issues, and bleeding. Teachers who had attended three or more training courses had better capabilities in providing first aid compared to those who had attended one or two courses or none. In addition, to address the current gap in capabilities, the researcher recommends an increased focus on enhancing the capabilities of teachers with less teaching experience and female teachers.

### Conclusion

Some important findings emerged from the current study regarding the capabilities of special education teachers in providing first aid for students with intellectual disabilities. The study showed that a majority of teachers have no or limited capabilities in providing first aid. Moreover, it indicated the influence of variables (gender, teaching experience, attending training courses) on capabilities of teachers in providing first aid. Despite these notable findings, this study faced some limitations. First, the researcher used a convenience sampling approach. Other sampling approaches may reveal different perspectives and findings. In addition, there were fewer female than male participants in this sample. Moreover, using self-reported data could be considered a limitation in terms of not exploring in depth the capabilities of teachers toward providing first aid.

Recommendations for future research include exploring qualitative research in depth to probe the reasons why teachers have no capabilities to provide first aid. In addition, future research should be conducted with a 5-point Likert scale to present a wider range of responses on teachers' capabilities to provide first aid. Further, researchers should examine teachers' capabilities to provide first aid after they have engaged in practical training courses. The current study was the first study in the region which explored the capabilities of teachers of students with intellectual disabilities regarding providing first aid when students suffer injuries in schools. The findings of the current study would inform policy makers on teachers' professional development in terms of increasing their capabilities to provide first aid.

Funding. This research received no external funding.

**Institutional Review Board Statement.** The study was approved by the ethics committee of Imam Mohammad ibn Saud Islamic University (no:4/1443/64708).

**Informed Consent Statement.** Informed consent was obtained from all the participants involved in the study. **Data Availability Statement.** The data can be made available on request.

Acknowledgments. to all teachers who take part in current study.

Conflicts of Interest. The authors declare no conflict of interest.

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