



First Aid Knowledge between Dental and Nursing Students in Al Hadi University College, Iraq: A Comparative Study

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Abstract: The knowledge of first aid is crucial for healthcare students, including dental and nursing students, to provide emergency medical care. The current research was aimed for comparing between the dental and nursing students about their first aid knowledge in Al Hadi University College, Baghdad, Iraq. A comparative study was conducted, and a questionnaire was distributed to 80 dental students and 80 nursing students in their final stages of study. The questionnaire assessed their knowledge of first aid in different emergency situations. Independent Samples T-test was used to compare the two groups. The results showed dental students had significantly higher mean scores than nursing students (78.1250 vs. 69.4792, $p = 0.016$). Additionally, 73.9% of dental students had good knowledge of first aid, while only 41.4% of nursing students had good knowledge. The study found that dental students had better knowledge of first aid than nursing students, indicating the need to incorporate first aid classes and literature into nursing curricula. Enhancing the knowledge of first aid for healthcare students can improve patient safety and outcomes in emergency situations.

Keywords: Knowledge, First aid, Emergency, Dental students, Nursing students.

1. Introduction:

First aid plays a critical role in saving lives, with numerous preventable deaths occurring annually due to the lack of timely intervention. Heart attacks alone claim the lives of 29,000 individuals, while approximately 2,500 people die from asphyxiation caused by blocked airways (1).

Prompt first aid measures can make a significant difference in such life-threatening situations, whether it involves assisting a choking victim or recognizing and responding to the signs of a heart attack until professional medical help arrives (2). By providing persons with the necessary expertise in first aid, we enable them to assume the critical role of bridging the gap between a lives that is lost or a life that is rescued (3). The importance of first aid knowledge extends beyond the medical field, encompassing various professions, including dentistry and nursing. Dentists, for instance, should possess essential knowledge to identify, evaluate, and manage potentially life-threatening situations until patients can be transported to medical facilities (4). Studies indicate that half of the patients treated in dental schools have at least one chronic disease or condition, highlighting the significance of comprehensive patient management skills (5). Dental professionals must be well-versed in preventing, diagnosing, and managing common emergencies such as angina, allergy of local anesthesia, and syncope (4). Consequently, dental teams should receive adequate training to identify and handle emergencies efficiently (6).

The responsibilities of a first aid practitioner are promptly evaluating the situation, keeping a calm demeanor, and managing critical medical situations in settings that are not under the controlled circumstances often seen inside a hospital setting (7). Their objectives include preserving life, reducing suffering, preventing further injury or illness, and facilitating recovery (8). However, medical students receive training on handling emergencies within a hospital setting where resources are readily available, and their preparedness for managing emergencies with such conveniences may need to be improved (9). Surprisingly, first aid knowledge has often been overlooked among medical students, leading to unsatisfactory performance of first aid skills even among junior doctors (10). Given the rising frequency of medical crises, medical staff must adequately prepare to respond to them (11).

Healthcare professionals and members of the general population may lack the confidence, proper knowledge, and skills to provide first aid during accidents or emergencies (12). The general population must possess a comprehensive understanding and proficiency in fundamental first aid procedures, including cardiopulmonary resuscitation (CPR), hemorrhage management, and fracture treatment (13). Incorporating first aid training into the curriculum of medical schools has been limited, resulting in a gap in knowledge and skills (9).

Acknowledging the pivotal role that the younger generation plays in shaping the future of the country, it becomes imperative for the government to enhance the dissemination of information and understanding of first-aid protocols in order to save human lives effectively. Evaluating students' knowledge, attitudes, and practices may provide valuable insights for designing and implementing first aid and basic life support courses. This information can successfully enhance students' ability to respond to crises in diverse environments (14). Currently, there is a lack of research undertaken in Iraq that examines the level of understanding and adherence to first aid protocols among students pursuing medical education. Therefore, this research intends to analyse the awareness, knowledge and practices of first aid abilities amongst university students pursuing dentistry and nursing courses at Al-Hadi University College.

2. Methodology

2.1. Study Design:

The present investigation employs a cross-sectional research design to evaluate the awareness and behavior of final-year dental and nursing students toward first aid. The data collection period was extended from November 2022 to March 2023 at Al-Hadi University College in Baghdad, Iraq.

The study utilized a self-administered questionnaire designed in Arabic to gather information from the participants. The questionnaire consisted of two parts. The initial section collected information about the participants' demographics, such as their gender, age, place of residence, department of study, and study grade. The second segment aimed to evaluate their knowledge of first aid. The second part of the questionnaire consisted of multiple-choice questions and aimed to test general knowledge of first aid and knowledge of handling various emergencies such as trauma, fractures, burns, seizures, bites, and bleeding. The questions allowed participants to respond with "yes," "no," or "I do not know" options.

Before collecting the actual data, a pilot study was conducted with 18 fourth-grade dental students to assess the efficacy of the questionnaire.

Participation in the study was voluntary, and all participants were provided with an informed consent form and a questionnaire. They were also informed about the objective of the study. Participants were free to withdraw from the study at any point, and no compensation or benefits were provided for their participation. Personal identification information was not collected to ensure participant confidentiality; the confidentiality of the participants was maintained throughout the study and in publishing the results.

2.2. Sampling:

The study included 160 medical science students divided into two groups 80 participants' fourth and fifth-grade dental and 80 participants' fourth-grade nursing students at Al-Hadi University College. Both male and female students were included in the study population. A 1:1 ratio of dental and nursing students was employed to ensure sufficient representation for comparison.

2.3. Questionnaire Design:

The questionnaire utilized in this study was self-administered. It consisted of three sections. The first section collected demographic information, while the second comprised nine multiple-choice questions. The third section included three questions, with participants selecting one of the answer options: "Yes," "No," or "I do not know."

3. Results:

Demographic data, including gender, age, and medical background, were obtained from 160 participants, with an equal representation of 80 students from dental and nursing departments. Among the participants, 94 were female (59%), and 66 were male (41%). The age distribution showed that 78 participants (49%) were 23 years old or older, 47 (29%) was aged 22-23, and 35 (22%) were aged 21-22 as shown in Table (1).

In the assessment of first-aid knowledge, the results of the comparative study questionnaire were expressed in scores, students were categorized based on these scores into good, moderate, and poor knowledge. A statistical comparison between the means of both study groups using an Independent samples t-test revealed a significance level of 0.016, indicating that the difference in means is statistically significant, as shown in Table(2).

Dental students achieved a significantly higher mean score (78.12) in first-aid knowledge compared to nursing students (69.47). The standard deviation for dental students was 15.37, indicating a wider range of scores within the dental department. The statistical analysis revealed a significant difference (P value = 0.016) between the two groups.

In the dental department, a majority of students (73.9%) demonstrated good knowledge of first aid, while 23.9% had moderate knowledge, and only 2.5% had poor knowledge. Conversely, in the nursing department, 41.4% of students displayed good knowledge, 58.9% had moderate knowledge, and none were categorized as having poor knowledge. Additionally, two histograms were plotted, depicting the students' grade distribution and the frequency of each grade. One histogram represented the grades of dental students, while the other histogram represented nursing students' grades, as illustrated in figures (1) and (2).

4. Discussion

The knowledge of first aid is crucial for individuals studying in healthcare professions such as dental and nursing. These professionals are often the first responders in emergency situations, and their knowledge of first aid can be the difference between saving a patient's life or not. Dental and nursing students must comprehensively understand the fundamental principles of first aid management in emergency conditions (15). It is crucial to provide students with adequate training and education on first aid as part of their curriculum. Hence, they are well-prepared to handle emergency situations they may encounter in their future careers (16).

Incorporating first aid classes and literature in the curriculum can help students build their confidence and competence in handling emergency situations. Furthermore, it can equip them with the necessary skills to perform critical life-saving techniques effectively. This knowledge and skills can benefit patients and provide these students with an added advantage in their professional careers (17).

Dental students have better knowledge than nursing students, which could be attributed to the fact that they often have hands-on clinical experience earlier in their education, exposing them to real-life situations where first aid skills can be applied owing to their curriculum focus during the study journey (8), These results align with studies conducted in various geographical regions. Consistent

with our study's outcomes, Kumar et al. observed analogous trends in India. In their cross-sectional study carried out at a medical college in Mangalore, they discovered diverse levels of first aid knowledge among students. Specifically, 13.8% exhibited good knowledge, 68.4% displayed moderate knowledge, and 17.8% demonstrated a lack of proficiency. Kumar et al. also proposed that nursing students should receive enhanced training in first aid management, with a particular focus on areas such as CPR (Cardiopulmonary Resuscitation) and basic life support techniques (18). A study in Kuwait by Al-Khamees reported higher awareness of first aid among health sciences students than literary students. The close association of health sciences students with the medical profession likely contributes to their increased awareness of the importance of first aid (19). Another study among undergraduate medical students of Vydehi Medical College in Bangalore, India, revealed that 43 out of 150 students had excellent knowledge, 71 needed improvement, 35 had adequate knowledge, and only 1 had poor knowledge about first aid (14). An investigation at Collegium Mazovia Innovative University in Siedlce, Poland, demonstrated varying levels of knowledge among participants, underscoring the global need for standardized first-aid education (20). In Saudi Arabia, a local cross-sectional study conducted in Abha at King Khalid University found varying levels of knowledge among medical students, with 58.1% answering less than 50% of questions correctly, 20.2% answering 50–70% correctly, and 21.7% answering more than 70% correctly (21). In Malaysia, a quantitative cross-sectional study at IIUM reported that the majority of participants (42.8%) had a moderate level of first-aid knowledge. In comparison, 33.9% had a high level of knowledge, and 23.3% had a low level of knowledge. However, most participants had a high level of awareness and a positive attitude toward first aid (22).

5. Conclusions

The urgent need for healthcare providers to possess robust first-aid knowledge cannot be overstated. Both dental and nursing students must attain a proficient level of understanding and be equipped with the requisite awareness to handle diverse clinical scenarios competently. The findings of this study reveal a notable contrast in clinical first-aid knowledge between dental and nursing students. Dental students exhibit a superior grasp of the subject matter, a proficiency attributed to their curriculum and hands-on experience in dental operations and procedures on patients. This practical exposure equips them with the skills to respond effectively to clinical emergencies. In contrast, nursing students displayed a moderate level of proficiency in managing first-aid situations during clinical emergencies. This suggests a more comprehensive approach to first aid education.

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7. Conflict of interest: none declared.

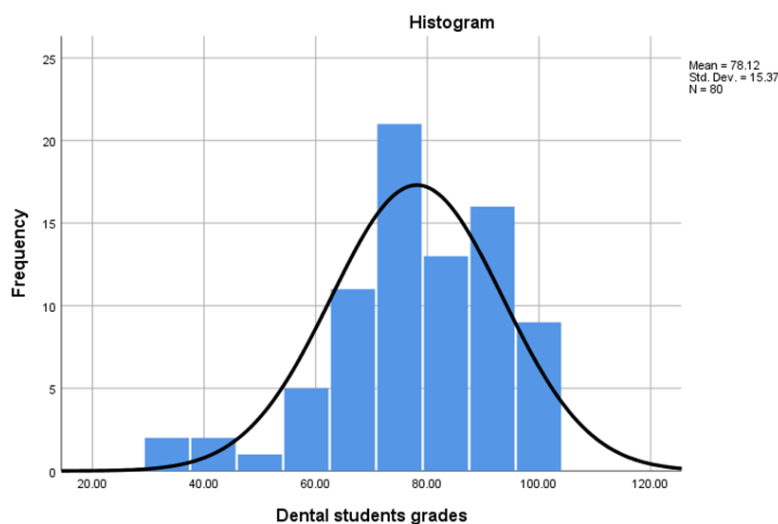


Figure (1) histogram for dental students' frequency of grades

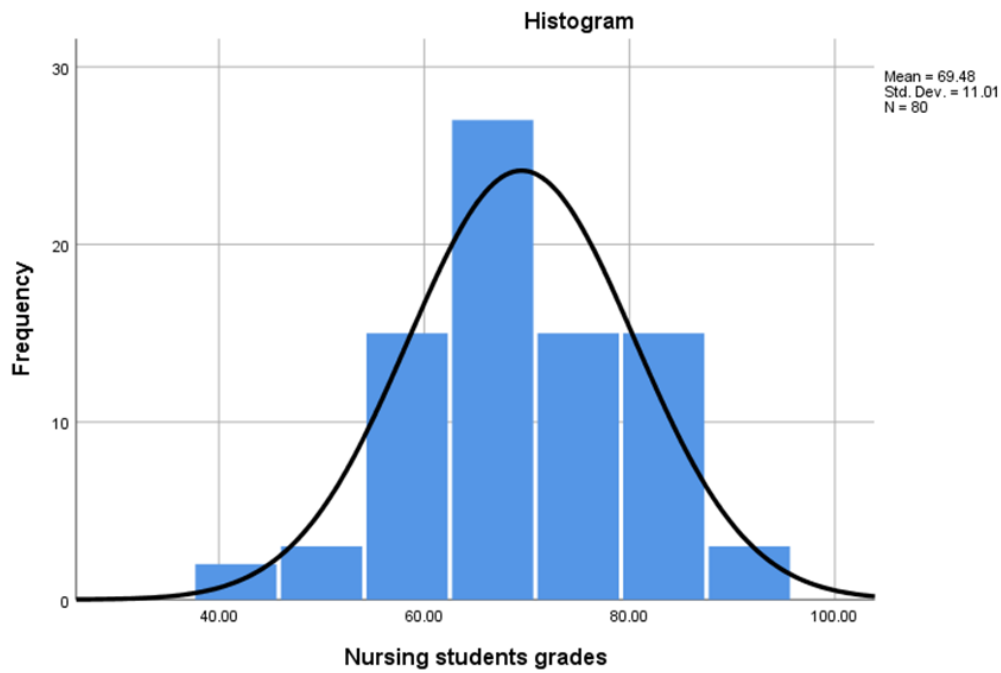


Figure (2) histogram for nursing students' frequency of grades

Table (1) Demographic characteristics of participants.

characteristics		No.	%
Gender	Female	94	0.59 %
	Male	66	0.41 %
Age	21-22	35	0.22 %
	22-23	47	0.29 %
	23 and more	78	0.49 %
Medical background	Dental students	80	50 %
	Nursing students	80	50 %

Table (2) Comparison between the mean scores of students in different medical departments in relation to first-aid knowledge

Department	Mean	Standard Deviation	Standard Error mean	T value	P value	Sig.
dentistry	78.12	15.37	1.71	4.09	0.016	HS
nursing	69.47	11.00	1.23			

P≤0.05 Significant, P>0.05 Non significant

Table (3) Distribution of students based on their knowledge in aspects of first aid management in different emergency conditions

Department	Good knowledge (%)	Moderate knowledge (%)	Poor knowledge (%)
dentistry	59 (73.9)	19 (23.9)	2 (2.5)
nursing	33 (41.4)	47 (58.9)	-

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