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Evaluation of Nursing Students' Knowledge on Dental Injuries

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ABSTRACT

Background/Aims: Emergency department visits for dental issues are mainly related to traumatic injuries. Knowledge of emergency department staff regarding diagnosis and treatment of dentofacial injuries is quite significant for prognosis of teeth and peripheral tissues. The aim of this study is to assess attitude, knowledge, education and self-confidence of undergraduate nursing students, who will work at emergency departments in the future, regarding diagnosis and treatment of dental traumatic injuries.

Materials and Methods: This survey was prepared by modifying questions of the previous survey that had been internationally published. It was a face-to-face survey consisting of 15 questions regarding management of the dental traumas. Questions addressing participants' genders and year of study were added to the survey form. The survey was distributed to 1st, 2nd, 3rd and 4th-year undergraduate nursing students. Analysis results were presented in the form of frequencies. Pearson's chi-squared test and the Fisher–Freeman–Halton test were used for analysis of the categorical data. Multiple comparisons were made using the Bonferroni-correction Z test. The level of significance was set at $p < 0.05$.

Results: The survey was responded by a total of 297 participants, including 47 men and 250 women. Participants consisted of 35.4% first-year, 28.6% second-year, 15.5% third-year, and 20.5% fourth-year nursing students. The third-year undergraduate students believed that they had adequate knowledge, and they were also the group that most strongly supported for administration of tetanus vaccine ($p < 0.05$). No significant difference was observed among nursing students regarding other topics. Students' knowledge and awareness levels respecting particularly avulsion injuries were found to be inadequate regardless of their year of study.

Conclusions: Knowledge of most undergraduate nursing students regarding diagnosis and treatment of dentofacial traumatic injuries were insufficient. An additional education is required for students during and after their formal education to manage dental traumas following graduation.

1 | Introduction

Traumatic dental injuries are the conditions caused by damage to the teeth or other oral tissues upon a hit or impact. Being a common health issue seen especially in children and athletes, these injuries mainly occur as a result of accidents and may effect soft and solid tissues of both the teeth and oral

cavity [1, 2]. Studies have indicated that global prevalence of traumatic dental injuries is 22.7% in primary teeth and 15.5% in permanent teeth [3, 4]. It is estimated that approximately 1 billion people worldwide are exposed to dental trauma at least once in their lifetime [4]. It is accepted that dental traumas in children cause greater physical, economical and psychosocial effects in comparison to dental caries and periodontal

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diseases. These types of injuries are more common in boys aged between 8 and 11 [5, 6].

As a result of trauma, crown fractures, crown-root fractures, root fractures, alveolar bone fractures, luxations (lateral luxation, contusion, subluxation, extrusion, intrusion), avulsion and injuries of tooth-supportive tissues (gingiva, periodontal ligament, bone) may develop [7]. Enamel fractures are more commonly seen in permanent teeth, whereas luxation and avulsion are the most common injuries during the primary dentition [5].

Avulsion is the most serious condition among traumatic dental injuries, which may lead to severe functional and aesthetic problems. Thus, having essential knowledge and experience is crucial to deal with such conditions [5, 6, 8]. Following avulsion, a timely and appropriate intervention significantly increases the chance of recovery. Immediately repositioning the tooth in its original place, quickly transferring it to the dentist, and preserving it in a special solution are the most effective treatment methods. According to suggestions provided by International Association of Dental Traumatology, ideal transfer media consists of Hanks' Balanced Salt Solution, milk or patient's saliva. Drying time of the tooth outside the mouth should not exceed 60 min [8, 9].

Prognosis of dental injuries widely depends on proper and immediate emergency management. Numerous international studies have revealed that the non-dentist individuals, who may face emergency situations, have inadequate level of knowledge regarding management of emergency dental trauma. These studies include various groups such as parents, lecturers and even healthcare professionals. Despite variability of results, the studies have shown that the individuals in these groups have low level of consciousness and awareness regarding traumatic dental injuries [5, 7, 8, 10–15].

It has been reported that patients mainly present to emergency departments of hospitals for first aid during emergencies, such as dental trauma, because dental clinics operate within specific working hours [11, 16]. Therefore, physicians and nurses working at emergency departments are the primary individuals providing initial emergency treatment [16]. Healthcare professionals prioritize their initial interventions for cases and conditions that pose a life-threatening risk in emergency situations. Thus, dental and oral tissue injuries may sometimes be given secondary importance. However, timely management of oral and dental traumas is of critical importance for prognosis of the related teeth. In this manner, improving knowledge and awareness of physicians, nurses and medical/nursing students, who are the first to come into contact with patients at emergency departments, is essential on this matter [7, 8, 11, 16].

In previous studies, questionnaires about dental trauma have been applied to many participants from health professionals or different professional groups. However, there are not enough studies on nursing students who are likely to encounter dental trauma cases in emergency services or different hospital outpatient clinics after graduation. It is important that nursing students have sufficient knowledge and awareness about dental trauma during faculty education [5, 7, 8, 10, 16]. With this study, it was aimed to provide nursing students with the necessary

training during their faculty education, to increase their awareness and knowledge levels about dental traumas, and to learn the adequate level of knowledge when they encounter patients exposed to dental trauma after graduation.

The aim of this study is to assess knowledge and attitudes of the first, second, third and fourth-year nursing students with respect to proper methods to intervene in cases of dental trauma.

2 | Materials and Methods

Pamukkale University, Faculty of Health Sciences, Department of Nursing, 100% of the students (774 people) were asked to participate in the survey and 38.4% of the students (297 people) participated in the survey. Survey forms were distributed to the participants by hand, stated that it is based on a voluntary basis. The participants were asked in person to take part in the survey. Prior to the survey, their consent was obtained, confirming that they allowed the use of their responses for scientific purposes. It was explained that aim of the study was to assess knowledge and awareness levels of nursing students at faculties of health sciences regarding dental traumas. Our study, which was prepared and conducted as per Declaration of Helsinki, was approved by Pamukkale University Ethics Committee.

Nursing students were asked questions regarding their gender, year of study, and levels of awareness and knowledge about dental traumas. Identifying information, such as names and surnames, was not requested from the participants. The survey consisted of 15 questions in total, which was divided into two sections: demographic factors (2 questions) and an assessment of students' knowledge and awareness levels regarding dental injuries (13 questions).

The data were analyzed statistically using IBM SPSS V23. Pearson's chi-squared test and the Fisher–Freeman–Halton test were used for analysis of the categorical data. Multiple comparisons were made using the Bonferroni-correction Z test. Analysis results were presented in the form of frequencies (percentage). The level of significance was set at $p < 0.05$.

3 | Results

Out of 774 students at Pamukkale University, 297 participated in the survey. Response rate was 38.4%. A total of 47 men and 250 women participated in the study. Of the participants, 35.4% were in their first year, 28.6% in their second year, 15.5% in their third year, and 20.5% in their fourth year.

The percentage of nursing students, who believe they have adequate knowledge about dental trauma, is 20.2%, while 79.8% believe they do not. The participants, who reported that their primary source of knowledge on dental trauma was the internet and TV, stated that the least common source of their knowledge was dentists. The percentage of those who had previously encountered a case of avulsion secondary to trauma is only 19.3%. In response to the question, "What would your approach be when encountering someone with an avulsed tooth?" participants answered, in order from

most to least, “I would refer them to a dentist immediately,” “I would rinse the patient’s mouth and place the tooth in a moist cloth,” and “I would reinsert the tooth and refer them to a dentist.” Approximately 9 out of 10 participants believe that a dentist should be consulted in cases of emergency dental injuries. In response to when a dentist should be consulted, 53.5% answered “immediately,” 18.5% stated “within the first half hour,” 10.4% said “within 1–2 h,” 5.1% responded “within 24 h,” and 5% answered “within a week.” A total of 261 nursing students, who participated in the survey, consider that it is still necessary for the patient to see a dentist even in the absence of pain, fracture, or displacement caused by dental injuries. The percentage of those believing that the fractured fragment should be found in cases of dental fractures is 41.8%. They stated that they mainly prefer to give the fractured tooth to the patient and refer the patient to a dentist in cases of avulsion during dental trauma. Approximately one-third of the students stated that they do not know what to do with a tooth that has fallen out and become dirty after a trauma. Among the students who had knowledge, 27.6% washed the tooth with sterile saline, 15.5% washed it with tap water, 8.8% wiped it with a dry cloth without washing, 6.1% cleaned it with a brush, and 3% washed it with hydrogen peroxide. When asked about the storage conditions for an avulsed tooth, the most preferred methods were placing it in cotton or tissue (25.3%) and in sterile saline solution (16.8%). The number of those who think that a tetanus vaccine should be administered following dental trauma is 124, while 3 do not think so, and 164 are unsure about this matter. The final question of the survey asked nursing students if they would attend an educational program on dental trauma, and 70% responded affirmatively. Table 1 indicates the frequency and percentage distribution of the participants’ responses to the questions regarding dental trauma.

A statistically significant difference has been identified in the comparison of gender values based on the students’ year of study ($p=0.011$). Multiple comparisons revealed that the percentage of men in the second year was 10.6%, while in the fourth year, it was 21.3%. There is a statistically significant difference in the comparison of responses to the question “Do you think you have sufficient knowledge about dental trauma?” ($p=0.011$). Third-year students think that they have more knowledge compared to first-year students. There is a statistically significant difference in the comparison of responses to the question regarding the administration of a tetanus vaccine after trauma ($p=0.01$). Third-year students, at a rate of 65.2%, were the group most in favor of administering a tetanus vaccine. Table 2 shows the comparison of categorical variables based on the nursing students’ year of study.

4 | Discussion

Dental trauma can occur at any point in life. During working hours, individuals can go directly to a dentist; however, during off-hours and holidays, when access to a dentist is challenging, performing the initial intervention is important for treatment prognosis of the tooth and peripheral tissues. There are numerous studies aimed at assessing the knowledge of athletes, lecturers, parents, physicians, nurses, emergency department staff, medical and dental students on this matter [3, 5, 7, 8, 10, 11, 17, 18].

Healthcare professionals, especially nurses and medical doctors, are expected to be more knowledgeable about dental trauma than other lay people. Therefore, the awareness of nurses and nursing school students is critical for the prognosis of dental trauma treatment [10, 11, 13, 17, 18].

Although guidelines for dental trauma management have been published, evidence from various studies indicates that the knowledge of non-professionals about managing dental trauma is very limited. In a study conducted with emergency department staff, 78.1% reported encountering at least one dental trauma case, yet their first aid knowledge was found to be inadequate [16]. This percentage was found to be 79.8% in our study. This situation may be due to dental trauma being given lower priority during emergencies or because dental trauma is not adequately addressed in the clinical training of physicians and nurses [18].

The study conducted by Özmen et al. revealed that dental students with sufficient knowledge about dental trauma identified dentists as their primary source of knowledge [19]. Our study, however, indicated that the participants obtained their knowledge primarily from internet and TV sources.

In cases of crown fractures, having the fractured piece allows for a suitable and prompt treatment of the traumatized tooth, significantly effecting its prognosis. Otherwise, the treatments that need to be performed later become more challenging and costly [20–22]. The study by Diaz et al. [16] revealed that majority of respondents provided correct answer regarding the treatment of crown fractures in permanent teeth, indicating that the fractured piece could be preserved and reattached to the tooth later. In a study investigating patient and parent awareness, Lim et al. [23] reported similar findings regarding the proper treatment of traumatized teeth. Based on the results of our study, fewer than half of the participants believed that it is necessary to find the fractured piece in cases of dental trauma.

In cases where a tooth is completely dislodged (avulsion) during school or sports activities, prompt emergency intervention plays a critical role in the treatment prognosis [24]. The study by Donaldson et al. [25] highlighted that if avulsed teeth remain in a dry environment for more than 15 min, likelihood of resorption after reimplantation increases. Therefore, it is important to reinsert the avulsed teeth into their sockets as quickly as possible. A study carried out in our country found that more than 50% of final-year medical students believe that the avulsed permanent teeth should be reimplanted immediately [19]. In a survey conducted with emergency department staff, 8.3% of emergency physicians, 20% of emergency nurses, and 30.3% of dental nurses stated that they would reinsert the tooth in cases of avulsion [11]. In our study, only four nursing students responded, “I would reinsert the tooth and refer the patient to a dentist.” Regarding this matter, the study by Diaz et al. [16] showed that fewer than half of the participants refused to reinsert an avulsed tooth, highlighting a high risk of infection and stating that this treatment is responsibility of the dentists.

In a study by Hamilton et al. on how to clean an avulsed tooth before replantation, 28.5% of participants stated that they would brush the tooth prior to replantation [26]. The study by Diaz et al. showed that 8.5% of non-dentists would clean and scrub

TABLE 1 | Distribution of participants' responses to questions regarding dental trauma.

	Frequency	Percentage
Do you think you have sufficient knowledge about dental trauma?		
Yes, I do	60	20.2
No, I do not	237	79.8
If your answer is yes, what is the source of your knowledge?		
Dentists	8	13.1
Educational programs	9	14.8
Faculty courses	11	18
Previous dental trauma experiences	9	14.8
Internet/TV	24	39.3
Have you ever encountered a case of avulsed tooth due to trauma?		
Yes, I have	57	19.3
No, I have not	239	80.7
What would your approach be when encountering someone with an avulsed tooth?		
I would refer them to a dentist immediately	145	48.8
I do not have knowledge on this matter	80	26.9
I would reinsert the tooth and refer them to a dentist	4	1.3
I would rinse the patient's mouth and place the tooth in a moist cloth	68	22.9
Do you think that a dentist should be consulted in cases of emergency dental injuries?		
I do not have knowledge on this matter	11	3.7
Yes, I do	280	94.3
No, I do not	6	2
If your answer to the previous question is yes, when would you consult a dentist in cases of emergency dental injuries?		
Within a week	15	5.1
Within 1–2h	31	10.4
Within 24h	15	5.1
I do not have knowledge on this matter	22	7.4
Immediately	159	53.5
Within the first half hour	55	18.5
Do you think that a patient should see a dentist even if there is no pain, fracture, or avulsion following a dental injury?		
I do not have knowledge on this matter	13	4.4
Yes, I do	261	87.9
No, I do not	23	7.7
Do you think it is necessary to find the fractured piece in cases of a tooth fracture?		
I do not have knowledge on this matter	82	27.6
Yes, I do	124	41.8
No, I do not	91	30.6
What would you do if an avulsed tooth is fractured during a dental trauma?		
I do not have knowledge on this matter	54	18.2

(Continues)

TABLE 1 | (Continued)

	Frequency	Percentage
I would reinsert the tooth	6	2
I would give the fractured tooth to the patient and refer them to a dentist	215	72.4
I would not deal with the fractured piece	22	7.4
What would you do with a tooth that falls out and gets dirty after trauma?		
I do not have knowledge on this matter	116	39.1
I would clean it with a brush	18	6.1
I would wash it with hydrogen peroxide	9	3
I would wash it with tap water	46	15.5
I would wash it with sterile saline	82	27.6
I would wipe it with a dry cloth without washing	26	8.8
In what conditions would you recommend storing an avulsed tooth?		
In alcohol	17	5.7
I do not have knowledge on this matter	85	28.6
In iced water	34	11.4
In tap water	14	4.7
In cotton or tissue	75	25.3
In sterile saline solution	50	16.8
In milk	16	5.4
In saliva	6	2
What do you think about administering a tetanus vaccine after dental trauma?		
I do not have knowledge on this matter	164	55.2
Yes, it should be administered	124	41.8
No, it is not necessary to administer it	9	3
Would you like to attend an educational program on dental trauma?		
Yes	208	70
No	89	30

the tooth with cotton, while 43.9% would wash it with an anti-septic solution [16]. In our study, 27.6% of participants responded that they would “wash the tooth with sterile saline” if it was avulsed, fell to the ground, and became dirty.

The time taken to reach a dentist and the storage medium for an avulsed tooth are also crucial factors. In a survey conducted with non-dentists at emergency department, 9.8% of participants stated that the tooth should be transported inside the mouth, while in Lin et al.'s study, 13.2% of participants indicated that saliva is the best transport medium for a tooth [16, 27]. In our study, the percentage of responses indicating saliva (2%) and milk (5.4%) as transport media was also quite low. A review of the literature revealed that non-dentist healthcare professionals do not have sufficient and accurate knowledge regarding avulsed teeth. It was suggested by McIntyre et al. that brochures are an effective resource for training non-professionals on dental trauma [28].

Moran [24] and Fouad [29] reported in their studies that tetanus vaccination should be administered to patients in cases of avulsion. It was revealed in the study conducted by Özmen et al. [19] that only 34.3% of dental students stated that a tetanus vaccine should be administered. This percentage was found to be 41.8% in our study.

The number of patients presenting to emergency departments due to traumatic dental injuries is quite high, and having knowledge of emergency treatment is crucial in these cases. The lack of training for non-dentist healthcare professionals, including in faculty courses, highlights their shortcomings in managing dental trauma [16, 30]. At the end of the survey, participants were asked if they were willing to attend an educational program on dental trauma, and indicated that they would like to participate. The percentage found in our study is higher than that in the study by Gaffar et al. [5] (52.8%) but lower than that in the study by Awad et al. [31] (82%). According to the findings of our study and another study,

TABLE 2 | Comparison of categorical variables by year of study.

	Year of study				Test statistics	<i>p</i>
	1st year	2nd year	3rd year	4th year		
Gender					11.230	0.011*
Male	16 (15.2) ^{ab}	9 (10.6) ^a	9 (19.6) ^{ab}	13 (21.3) ^b		
Female	89 (84.8)	76 (89.4)	37 (80.4)	48 (78.7)		
Do you think you have sufficient knowledge about dental trauma?					11.230	0.011*
Yes, I do	14 (13.3) ^a	16 (18.8) ^{ab}	17 (37) ^b	13 (21.3) ^{ab}		
No, I do not	91 (86.7)	69 (81.2)	29 (63)	48 (78.7)		
If your answer is yes, what is the source of your knowledge?					10.131	0.613**
Dentists	1 (7.1)	3 (18.8)	1 (5.9)	3 (21.4)		
Educational programs	4 (28.6)	1 (6.3)	3 (17.6)	1 (7.1)		
Faculty courses	1 (7.1)	3 (18.8)	5 (29.4)	2 (14.3)		
Previous dental trauma experiences	4 (28.6)	2 (12.5)	2 (11.8)	1 (7.1)		
Internet/TV	4 (28.6)	7 (43.8)	6 (35.3)	7 (50)		
Have you ever encountered a case of avulsed tooth due to trauma?					1.608	0.657*
Yes, I have	19 (18.3)	14 (16.5)	9 (19.6)	15 (24.6)		
No, I have not	85 (81.7)	71 (83.5)	37 (80.4)	46 (75.4)		
What would your approach be when encountering someone with an avulsed tooth?					9.364	0.349**
I would refer them to a dentist immediately.	57 (54.3)	39 (45.9)	26 (56.5)	23 (37.7)		
I do not have knowledge on this matter.	27 (25.7)	23 (27.1)	10 (21.7)	20 (32.8)		
I would reinsert the tooth and refer them to a dentist.	3 (2.9)	1 (1.2)	0 (0)	0 (0)		
I would rinse the patient's mouth and place the tooth in a moist cloth.	18 (17.1)	22 (25.9)	10 (21.7)	18 (29.5)		
Do you think that a dentist should be consulted in cases of emergency dental injuries?					5.923	0.374**
I do not have knowledge on this matter.	5 (4.8)	4 (4.7)	0 (0)	2 (3.3)		
Yes, I do	98 (93.3)	81 (95.3)	44 (95.7)	57 (93.4)		
No, I do not	2 (1.9)	0 (0)	2 (4.3)	2 (3.3)		
If your answer to the previous question is yes, when would you consult a dentist in cases of emergency dental injuries?					15.294	0.404**
Within a week	4 (3.8)	8 (9.4)	2 (4.3)	1 (1.6)		
Within 1-2 hours	10 (9.5)	11 (12.9)	4 (8.7)	6 (9.8)		
Within 24 hours	4 (3.8)	5 (5.9)	2 (4.3)	4 (6.6)		
I do not have knowledge on this matter.	12 (11.4)	5 (5.9)	2 (4.3)	3 (4.9)		
Immediately	50 (47.6)	44 (51.8)	31 (67.4)	34 (55.7)		
Within the first half hour	25 (23.8)	12 (14.1)	5 (10.9)	13 (21.3)		

(Continues)

TABLE 2 | (Continued)

	Year of study				Test statistics	p
	1st year	2nd year	3rd year	4th year		
Do you think that a patient should see a dentist even if there is no pain, fracture, or avulsion following a dental injury?					2.931	0.835**
I do not have knowledge on this matter.	5 (4.8)	4 (4.7)	3 (6.5)	1 (1.6)		
Yes, I do	90 (85.7)	76 (89.4)	39 (84.8)	56 (91.8)		
No, I do not	10 (9.5)	5 (5.9)	4 (8.7)	4 (6.6)		
Do you think it is necessary to find the fractured piece in cases of a tooth fracture?					4.147	0.657*
I do not have knowledge on this matter.	35 (33.3)	19 (22.4)	11 (23.9)	17 (27.9)		
Yes, I do	40 (38.1)	36 (42.4)	20 (43.5)	28 (45.9)		
No, I do not	30 (28.6)	30 (35.3)	15 (32.6)	16 (26.2)		
What would you do if an avulsed tooth is fractured during a dental trauma?					13.507	0.100**
I do not have knowledge on this matter.	26 (24.8)	15 (17.6)	5 (10.9)	8 (13.1)		
I would reinsert the tooth.	2 (1.9)	1 (1.2)	3 (6.5)	0 (0)		
I would give the fractured tooth to the patient and refer them to a dentist.	66 (62.9)	65 (76.5)	36 (78.3)	48 (78.7)		
I would not deal with the fractured piece.	11 (10.5)	4 (4.7)	2 (4.3)	5 (8.2)		
What would you do with a tooth that falls out and gets dirty after trauma?					21.124	0.104**
I do not have knowledge on this matter.	43 (41)	37 (43.5)	10 (21.7)	26 (42.6)		
I would clean it with a brush.	6 (5.7)	6 (7.1)	5 (10.9)	1 (1.6)		
I would wash it with hydrogen peroxide.	2 (1.9)	3 (3.5)	2 (4.3)	2 (3.3)		
I would wash it with tap water.	18 (17.1)	14 (16.5)	8 (17.4)	6 (9.8)		
I would wash it with sterile saline.	29 (27.6)	14 (16.5)	17 (37)	22 (36.1)		
I would wipe it with a dry cloth without washing.	7 (6.7)	11 (12.9)	4 (8.7)	4 (6.6)		
In what conditions would you recommend storing an avulsed tooth?					20.239	0.467**
In alcohol	8 (7.6)	3 (3.5)	4 (8.7)	2 (3.3)		
I do not have knowledge on this matter.	36 (34.3)	25 (29.4)	5 (10.9)	19 (31.1)		
In iced water	12 (11.4)	9 (10.6)	5 (10.9)	8 (13.1)		
In tap water	7 (6.7)	2 (2.4)	3 (6.5)	2 (3.3)		
In cotton or tissue	23 (21.9)	22 (25.9)	15 (32.6)	15 (24.6)		
In sterile saline solution	13 (12.4)	17 (20)	9 (19.6)	11 (18)		
In milk	3 (2.9)	6 (7.1)	4 (8.7)	3 (4.9)		
In saliva	3 (2.9)	1 (1.2)	1 (2.2)	1 (1.6)		

(Continues)

TABLE 2 | (Continued)

	Year of study				Test statistics	p
	1st year	2nd year	3rd year	4th year		
What do you think about administering a tetanus vaccine after dental trauma?					15.535	0.010**
I do not have knowledge on this matter.	64 (61) ^a	44 (51.8) ^{ab}	16 (34.8) ^b	40 (65.6) ^a		
Yes, it should be administered.	38 (36.2) ^a	37 (43.5) ^{ab}	30 (65.2) ^b	19 (31.1) ^{ab}		
No, it is not necessary to administer it.	3 (2.9)	4 (4.7)	0 (0)	2 (3.3)		
Would you like to attend an educational program on dental trauma?					4.636	0.200*
Yes	73 (69.5)	53 (62.4)	35 (76.1)	47 (77)		
No	32 (30.5)	32 (37.6)	11 (23.9)	14 (23)		

Note: a-b, No difference available between classes with the same letter. The level of significance was set at $p < 0.05$.

*Pearson Chi-Square Test.

**Fisher Freeman Halton Test.

dental trauma should be prioritized in the curriculum. If appropriate training is not provided to nursing students, nurses will not have sufficient knowledge about dental trauma in the future [18].

5 | Conclusion

In the population of nursing students at Pamukkale University in Denizli, Türkiye, it was found that they lacked sufficient knowledge about dental trauma; however, the students agreed that patients should be referred to a dentist in cases of avulsion and fractured teeth. Additional training is also needed regarding transport and cleaning procedures in cases of avulsion. Through an educational program that can be provided by dentists, the knowledge of nursing students and nurses willing to work at emergency departments after graduation can be enhanced regarding the management of dental injuries. The survey study can be repeated in more centers and with more participants by educating students about dental trauma.

Author Contributions

Conceptualization, N.A. and E.Y.; methodology, N.A.; data collection, E.Y. and O.A.; writing, E.Y. and O.A.; review and editing, N.A., E.Y., and O.A.

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Ethics Statement

This article presents the results of a questionnaire approved by the ethics committee of pamukkale university and presents the results of the knowledge and awareness levels of the nursing department students of the faculty of health sciences regarding dental injuries. (E-60116787-020-562,700).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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