

Assessing Continuing Education Needs in Alveolar Dental Traumatology for Dental Interns

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Abstract

Objective: In the Emergency Department of the dental consultation and treatment center of the university hospital IBN ROCHD in Casablanca, the management of oral trauma is mainly carried out by dental interns. In view of the difficulties observed and reported by them concerning certain traumas, it seemed necessary to set up a training course in traumatology to optimize the management of patients consulting the emergency department. The objective of this study was to draw up a preliminary analysis of the dental trauma training needs of interns working at our university hospital.

Methodology: Two methods were utilized, individual interviews and a questionnaire, to gather information about training needs. The responses were then prioritized using the FGP (Frequency, Severity, Problem) grid.

Results: Following the initial meeting with dental interns, three key areas were identified: root fractures, complete dental dislocation, and alveolar fractures. Responses were collected from all 29 interns, who expressed a requirement for acquiring knowledge, expertise, and interpersonal skills regarding these three areas. For Knowledge Problems, interns indicated a necessity for theoretical understanding in handling alveolar fractures (1.45±1.183), with root fractures scoring lower (1.03±1.017), and total dislocation being the lowest priority (0.34±0.769). In terms of know-how problems, alveolar fractures had the highest score (2.34±1.317), followed by root fractures (1.72±1.032), and total dislocation ranked last with an average of (1.03±1.149). Regarding interpersonal skills problems, practitioners mainly experienced problems related to total tooth dislocation (1.17±1.365), followed by alveolar fractures (1.03±1.375), and lastly, root fractures (0.97±1.267).

Conclusion: The present study demonstrated a clear requirement for ongoing education in alveolar-dental traumatology among the interns at university hospital.

Keywords: Continuing Medical Education, Alveolar-Dental Traumatology, Dental Interns.

Introduction

Dental Traumatology refers to the field of dentistry that deals with the examination and management of dental and alveolar injuries, with a focus on prevention and treatment.¹ It represents a significant challenge in both clinical dentistry and public health. Accidents, falls, sports-related injuries, and interpersonal violence are common causes of dental trauma, affecting individuals across all age groups. The consequences of dental trauma extend beyond mere physical discomfort, often leading to aesthetic concerns, functional impairments, and psychological distress. Understanding the nature of dental trauma, its prevalence, risk factors, and potential consequences

is essential for effective prevention, timely intervention, and optimal management.² Although not a standalone discipline, several scholarly and scientific associations addressed the subject and strived to standardize treatment methods. Among them is the International Association of Dental Traumatology (IADT), which unites multiple clinicians, educators, and researchers in the field and has published guidelines.³ Numerous studies have evaluated the understanding of emergency teeth trauma management among diverse populations, including dentists, schoolteachers, and physicians. Many of these studies have highlighted the necessity for enhanced communication between dental professionals and the community to raise awareness.² The diagnostics and treatments within traumatology have grown significantly since the 1970s due to the work of Jens-Ove Andreasen and his team. Oral trauma has taken many forms and can vary greatly in severity, sometimes resulting in the loss of a tooth.

Optimizing treatment and preventing post-traumatic complications required urgent and prompt management of dental trauma. In the Emergency Department of the dental consultation and treatment center at UH IBN ROCHD in Casablanca, oral trauma management is primarily conducted by interns and residents from various specialties. It has observed diagnostic and decision-making challenges reported by interns in certain traumatic cases. Training dental interns in trauma management is essential for optimizing patient care in emergency departments. The hospital serves as a hub for training, assessment, and research, and has undergone significant development in recent years.⁴ Nonetheless, it is imperative to meticulously supervise the continuing education of healthcare professionals, especially interns. The Pedagogy Units must persistently offer practitioners with support as they practice, facilitating exchanges between the diverse academic structures in a welcoming environment.⁵ This analysis will aid in identifying the cognitive, psychomotor, and affective domains that must be developed in this dental consultation and treatment center.

Given the prevalence of dental trauma incidents and their potential long-term effects, training

dental interns in trauma management is paramount.⁶ By equipping dental interns with trauma management skills, we can address a crucial aspect of public health. Timely and appropriate management of dental trauma not only improves individual patient outcomes but also reduces the burden on healthcare systems and society as a whole.⁷

Training dental interns in trauma management is essential for providing timely, comprehensive, and compassionate care to patients affected by dental trauma. By investing in such training, we empower future dental professionals to make a significant impact on the well-being of individuals and communities alike. The aim of the current work is to report on an exploratory approach aimed at identifying training needs in dental traumatology, adapted to intern doctors practicing at dental consultation and treatment center within the UH, with reference to the professional skills targeted.

Methodology

The present study is part of a pilot exploratory approach within the Emergency Department of UH IBN ROCHD in Casablanca. It is a cross-sectional study conducted between July 15, 2022, and July 30, 2022. This pilot study is a small-scale preliminary investigation conducted prior to the main research project. Its purpose is to test the feasibility, methods, and procedures of the larger study, as well as to identify and address any potential issues or limitations that may arise.

Participants

This cross-sectional study involved all 29 interns at the Casablanca dental consultation and treatment center, representing the entire intern population during the study period. The focus was on interns because they handle dental trauma cases in the Emergency Department. The study excluded subjective evaluations, maintaining formal, objective language with standard formatting and citation guidelines. Technical terms were clarified, and colloquialisms were avoided. The text was grammatically correct, with no spelling or punctuation errors. Interns rotated weekly through the emergency department and were on-call once a month.

Data collection

The method for identifying training needs relied on two means: individual interviews and an open-ended study. The prioritization of responses was based on the FGP grid (Frequency, Gravity, Problem).⁸ Individual interviews were conducted to ascertain the interns' views on challenges faced while handling traumatic emergencies during their daily practice; and areas requiring additional training in dental traumatology. We conducted individual interviews aimed at gathering interns' perceptions regarding the difficulties encountered in managing traumatic emergencies during their daily practice, and perceived training needs in the field of dental trauma.

The training needed an assessment project, the purpose of the questionnaire and grid were presented and explained to all par-

ticipants. The FGP grid is widely used in the context of continuing medical education in several countries around the world, and the present aim was to identify topics that could be the subject of a trauma training program. For each topic, each participant was asked to rate the frequency (F), gravity (G) and problems (P), according to his or her personal experience. Each item (F, G and P) was rated according to the participant's own assessment of it in terms of professional practice: Frequency (F): 0: rare; 1: moderately frequent; 2: very frequent. gravity (G): 0: 0: mild; 1: moderately severe; 2: very severe. Problems (P): 0: no problems, 2: average problems, 4: many problems. This last item is subdivided into 3 subgroups, depending on whether the problems concerned theoretical knowledge and reasoning [knowledge] technical or psychomotor skills [know-how] or psycho-affective and relational aptitudes [interpersonal skills]. The numbers assigned to the three FGP columns for each subject were then added together to the questionnaire.

Data analysis

Data were inserted into Excel and assessed utilizing SPSS software. Objective variables consisting of frequency (F), gravity (G), and problems (P) were reported as the average and standard deviation.

Frequency-Gravity-Problems (FGP) grid was used for this assessment needs analysis, where frequency (F) was graded as 0: rare; 1: moderately frequent; 2: very frequent; Gravity (S) was graded as 0: mild; 1: moderately severe; 2: very severe; Problems (P) was graded as Problems of knowledge (Knowledge), manual dexterity (Know-how), interpersonal skills, 0: no problems, 2: average problems, 4: many problems

Results

The individual interviews highlighted the training needs felt by all the doctors interviewed. As for the questionnaires, following our initial meeting with the intern doctors, three main topics were identified: root fractures, total dental luxation (Expulsion), and alveolar fractures. We were able to collect responses from all 29 participants. The results are detailed in Tables 1,2,3.

The management of total dental luxation saw the highest average frequency (1.45 ± 0.686), followed by root fractures (0.86 ± 0.516), whereas alveolar fractures had the lowest frequency (0.72 ± 0.751). In terms of gravity, alveolar fractures obtained the highest score (1.45 ± 0.686), followed by total dental luxation (1.34 ± 0.553) and root fractures (1.07 ± 0.593). For Knowledge Problems, interns indicated a necessity for theoretical understanding in handling alveolar fractures (1.45 ± 1.183), with root fractures scoring lower (1.03 ± 1.017), and total dislocation being the lowest priority (0.34 ± 0.769).

In terms of know-how problems, alveolar fractures had the highest score (2.34 ± 1.317), followed by root fractures (1.72 ± 1.032), and total dislocation ranked last with an average of (1.03 ± 1.149). Regarding interpersonal skills problems, practitioners mainly experienced problems related to total tooth dislocation (1.17 ± 1.365), followed by alveolar fractures (1.03 ± 1.375), and

Table 1: Findings for Root Fracture Management

Values	Average	Standard Deviation	Minimum	Maximum
Frequency	0,86	0.516	0	2
Gravity	1,07	0.593	0	2
Problems	Knowledge 1,03	1.017	0	2
	Know-how 1,72	1.032	0	4
	interpersonal 0,97	1.267	0	4

Table 2: Findings for Total Dental Dislocation Management

Values	Average	Standard Deviation	Minimum	Maximum
Frequency	145	0.686	0	2
Gravity	134	0.553	0	2
Problems	Knowledge 034	0.769	0	2
	Know-how 103	1.149	0	4
	Interpersonal 117	1.365	0	4

Table 3: Findings for Alveolar Fractures Management

Values	Average	Standard Deviation	Minimum	Maximum
Frequency	072	0751	0	2
Gravity	145	0686	0	2
Problems	Knowledge 145	1183	0	2
	Know-how 234	1317	0	4
	interpersonal 103	1375	0	4

Discussion

In our study, we employed diverse assessment tools, including questionnaires, interviews, and scenario-based assessments.^{9,10,11} Medical interns unanimously recognized the need for training, with dental interns expressing challenges in handling specific dental traumas. To prioritize educational goals, we used the FGP grid, effectively identifying predominant needs.¹² This assessment identifies training needs for university hospital dentists, emphasizing the necessity of trauma training for interns. Data show gaps in knowledge, skills, and interpersonal skills, crucial for on-call duty in the emergency department. Dental injuries are often underestimated due to patients not seeking consultation. These injuries are commonly overlooked among polytrauma

patients unless they pose a risk to vital prognosis, such as inhaling teeth.^{13,14,15} Tooth expulsion, a common emergency, requires immediate intervention for optimal prognosis, typically within an hour.^{16,17} Familiarity with emergency procedures and transportation of expelled tooth is crucial.^{14,18} Most expulsions affect central or lateral incisors, and management protocols are well-defined, including recommendations from dental associations covering patient evaluation, x-rays, preoperative instructions, reimplantation, postoperative care, and follow-up.¹⁹ Scores for alveolar fractures were higher due to their complexity. Total tooth dislocation led to interpersonal skills problems, requiring interns to use psycho-affective skills to comfort patients and clarify treatment plans.²⁰ Dental interns faced challenges with root fractures in knowledge, know-how, and interpersonal skills.²¹

Limitations

Limited number of interns were present in our hospital that year, so we could not expand the sample size further.

Conclusion

The study emphasizes the need for continuous education in alveolar-dental traumatology for dental interns at the university hospital. A training plan was proposed to align with institutional goals and enhance skills for optimal trauma patient management. It underscores the importance of conducting a needs analysis before planning any training, covering cognitive, psychomotor, and affective domains.

Recommendations

This assessment identified key subjects for an ongoing education program aimed at improving dental interns' traumatology training. The objective is to enhance their ability to handle dental trauma cases effectively at the emergency department of IBN-ROCHD hospital in Casablanca.

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