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Paediatric Vs. Adult Dental Trauma: A Scoping Review of Epidemiological Trends, Management Strategies in General Dentistry, and Future Perspectives in Saudi Arabia

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Abstract

This scoping review aims to synthesize and map the scientific evidence related to paediatric and adult dental trauma. The study focuses on the identification, extent, and scope of published experimental research regarding dental trauma, specifically examining epidemiological trends, management strategies in general dentistry, and the future perspectives of dental trauma. Key objectives include evaluating the level of evidence regarding these aspects, summarizing current knowledge, identifying research gaps, and providing recommendations for future research directions. Dental trauma, which refers to physical injuries to teeth and surrounding tissues caused by various forces, can result from violence, accidents, or sports. Treatment outcomes are influenced by timely care, accurate diagnosis, and appropriate treatment. There are distinct differences between paediatric and adult dental trauma, particularly regarding soft tissue involvement, tooth fractures, lesion relationships, and the nature of wounding agents. Proper knowledge of classifications for injured teeth, as well as hard and soft tissue injuries, is essential for an effective diagnosis and management plan. A history of dental trauma is crucial for identifying additional oral lesions or underlying medical conditions. Furthermore, understanding management strategies, including follow-up care, is vital for both general and paediatric dentists. Future strategies such as neurosensory mapping and clinical investigations are suggested to prevent complications of delayed trauma. This review concludes with a future perspective on advancing dental trauma research.

Keywords: Dental Trauma, Paediatric Trauma, Adult Trauma, Epidemiological Trends, Management Strategies, Dental Microtrauma, Soft Tissue Injuries, Tooth Fractures, Diagnosis, Referral, Future Perspectives, Pulp Development, Neurosensory Mapping, General Dentistry.

1. Introduction

In Saudi Arabia and rapidly developing countries, both dental trauma and its management are somewhat neglected; hence, a focus on Saudi Arabia is necessary. Dental trauma is a severe injury to oral and maxillofacial tissues that requires swift intervention and specific treatment planning in a multidisciplinary method for better rehabilitation. Research confirms the need for broader knowledge to reduce the functional, biological, and psychological consequences and the financial load resulting from it.

Treatment of dental trauma is not restricted to any one specialty, necessitating familiarity even among non-dental medical professionals with the treatment required. Dental trauma is prevalent in a wide range of ages, and different age groups can require different methodologies and long-term care to enhance the result. The randomly selected age for dividing these two

relatively different groups, the pediatrics, and the adults, is 12 years. This division strategy has been considered and used in other dental trauma research since it is well-suited with the definitive or mixed dental developments (Patidar et al., 2021). Age 12 divides the physiological growth and injury frequency of dental trauma into two dramatically different phases. The epidemiological demonstration here implies the age-specific response of dental trauma among the Saudi Arab population. Therefore, broad application of this study is made possible, especially given the scarcity of data and studies on the subject in Saudi Arabia, guaranteeing subsequent KAP study accuracy. Furthermore, dentofacial, diagnosis, treatment planning, and prognosis after different types of dental trauma, general dental practices, commonly ignored points, and expectations are considered. Future research perspectives in Saudi Arabia are noted and discussed (Azami-Aghdash et al., 2015).

1.1. Background and Rationale

Dental trauma is a widespread public health issue with a concerning burden on health care systems worldwide. It is ranked as the fifth most common trauma in the body, rendering it a major emergency problem. Untreated dental trauma may lead to infection, abscess, periodontal injury, loss of normal anatomic crown structure, and ultimately the loss of the tooth. These, in turn, may result in a negative impact on psychological well-being and social relationships. Dental trauma can affect speech, mastication, and facial esthetics and may also affect individuals' quality of life and cause discomfort. Each year, about 5 million teeth are lost due to traumatic dental injuries (TDIs) worldwide. A recent cohort study found that about 1,300 teeth were lost from boys and 1,000 teeth from girls due to dental trauma every year in the UK. The long-term quality of life was negatively affected by untreated dental trauma, with missing teeth, avoidance of smiling, and negative judgments from others.

Moreover, TDIs present a significant burden on health as well as on health policy expenditures of both developed and developing countries. In the United States, it was estimated that 5 million persons annually suffer TDIs, resulting in a US$ 2 billion loss in dental and medical costs. Epidemiological studies conducted in Scotland found that traumatic dental injury has a median yearly expenditure of GBP 119,354.42 on treating oral injuries among 8,911 patients between 1997 and 2002. Although the number of general practitioners receiving continuing professional development in dental trauma management for any of the years 1997 to 2002 was similar, a steady increase in the cost of treatment was found (Azami-Aghdash et al., 2015). Taking this into account, it is plausible to suggest that the economic burden of dental trauma management might be substantial given the high rate of dental trauma and population growth, accounting for 2.2% of US$ 96.23 billion spent on dental services in 2011 only in the United States. For Saudi Arabia, the implementation of the universal access policy of public dental services in 2003 has instigated a substantial increase in public dental services utilization, including visits and emergency care related to dental trauma. However, no nationwide study has specifically explored the epidemiological features of dental trauma between children/adolescent and adult patients since then (Patidar et al., 2021). In addition, the prevalence and treatment characteristics of dental trauma may vary between pediatric and adult dental trauma owing to the fact that they have different tooth composition, emergence age, and activities, among others.

1.2. Scope and Objectives

1.2.1. Background and rationale Dental trauma forms a major issue to both paediatric and general dentists, involving a wide array of management strategies. Knowledge of the possible approaches is ever changing in dentistry and it certainly evolves more frequently in the broader context of general dentistry. Non- tumour oral disease represents one of the prime non-paediatric topics interest for pediatric journals (Grazia Cagetti et al., 2021). It can also be noted that the focus of dental trauma has tended to shift towards preliminary care and patient education.

1.2.2. Aims The specific objective of the scoping review is to compile and summarize recent literature in regard to current epidemiological trends and clinical management practices of dental trauma in paediatric and adult patients from a general dentists' perspective. The review also aims to evaluate the extracted information to gather insights which might be beneficial in clinical practice setting, specifically emphasizing in Saudi Arabia. Finally, this report aims readers to contemplate on future perspectives and approaches of a more effective management of dental trauma cases, as well as envisage innovative practices and possible preventive measures.

1.2.3. Objectives To explore the recent literature on dental trauma in paediatric and adult patients, in particular from a general dentists' standpoint. To summarize the essential trends of the clinical management provided to patients by general dentists in each group. To assess and synthesize the extracted information and identify key insights beneficial to clinical practice. To foster a reflection on the current clinical management practices and existing gaps, particularly in regard to Saudi Arabia. To consider conceivable prospective approaches and potential innovations in the management of dental trauma cases. To

conceptualize the potential strategies for a more comprehensive approach to dental trauma cases, including current innovative practices and preventive measures (Azami-Aghdash et al., 2015).

2. Epidemiological Trends in Paediatric and Adult Dental Trauma

There are clear and significant trends in the epidemiological patterns of dental trauma that patients report between paediatric and adult cases. The specific aim is to examine these trends with the goal to provide an accessible benchmark for general practice dentists to have a global and regional understanding of the demographic and lifestyle differences inherent to the varying risk factors associated with age. Moreover, an exploration of the potential demographic influences on the rates of dental trauma, for instance, the elevation of paediatric dental trauma rates in China, could provide greater understanding and support to those working to widen their focus and the discussion surrounding the prevention and treatment of dental trauma among children and adolescents (Azami-Aghdash et al., 2015).

However, to the current knowledge, there is no study that comprehensively summaries these epidemiological trends together and depict a global discourse. It relies upon a variety of studies to illustrate the variation in significant trends and provides greater clarity on the differences. It is envisioned that this article may provide a comprehensive understanding of the global and regional patterns of dental trauma between children and adults across different gender, cause and place of injury, and types of trauma. This information could further assist researchers, educators and public health professionals with an interest in implementing targeted interventions. Drawing more focus to pediatric dental trauma in saudi arabia, pediatricians and dental professionals strives to prepare suitably for the increasing patient load, and fostering dental care provision for early age groups.

2.1. Global Overview

Dental trauma is defined as injury to the teeth, gums, periodontium, and alveolus which is mainly caused by an impact involving the mouth or face. Dental trauma is frequently seen in emergencies and its overall prevalence is 19.43%. A Finnish study found that 80.6% of 7- to 15-year-old children had some kind of dental trauma in their primary or permanent incisors. In comparison, a Turkish study showed that 22% of 2- to 17-year-olds had dental trauma involving at least one tooth. A similar Korean study reported that 15% of 0-18-year-olds experienced dental trauma. In a study conducted in Kuwait, the overall prevalence of dental injuries among 6- to 14-year-olds was 24.8%. The annual frequencies of all types of dental injuries per 1000 schoolchildren were 138.1, 111.3, and 107.4 for primary, mixed, and permanent dentitions, respectively. This result shows that the highest incidence of dental injuries was in the primary teeth (81.6%). A recent systematic review and meta-analysis of epidemiological studies based on primary literature revealed that the prevalence of dental trauma in permanent teeth was 15-20%. The prevalence of dental trauma in primary teeth was 10 times less than in permanent (1.3-2.2%). Charges of the dental trauma were higher in boys than in girls. The maxillary central incisors were the most affected teeth. The oral-facial trauma was a risk factor for dental trauma. The worsening of the oral hygiene status with the use of toothpaste was a protective factor. The glass was the most involved cause in dental trauma (Azami-Aghdash et al., 2015). A review reported that the best chance of survival of the avulsed permanent teeth is if they are replaced within 5 minutes, but survival can still be expected up to 2 hours. The recommended use of appropriate media such as Hank's balanced salt solution (HBSS) to transport an avulsed tooth. In addition, the knowledge of management of such injuries needs to be improved in the majority of cases managed by non-dental professionals, who are usually the first responders.

2.2. Specific Trends in Saudi Arabia

2.2.1. Introduction

The overall socio-economic status can influence the dental health of a population. Health religious practices such as fasting during specific hours of the day can raise the probability of dental trauma, and the same was confirmed by (Azami-Aghdash et al., 2015). Dental health promotional methods at schools such as increasing the awareness of dental trauma can produce a significant effect in decreasing the incidence of the same. While dental trauma is a frequent prevailing oral pathology, epidemiological details about it are varied. Up to 20% of the total population may have undergone dental trauma with permanent teeth. Socio-economic reasons are significantly associated with the increased possibility of dental trauma. It is essential to enhance the preference of the local population for the practice of delivering the suitable directions in the case of avulsed teeth. General knowledge about dental trauma, the necessity of a dentist following the incidence, and application knowledge of storage medium have a significantly higher probability of increased prevalence of trauma in permanent teeth. The management and knowledge of dental trauma show significantly improved status among teenagers, compared with the status of the same in prior generations.

Likewise, the awareness and education toward dental trauma have been remarkably improved by the pedagogic environment of the youth. When dealing with preschool children any extensive use of caries risk assessment can act as an advantageous instrument for predicting future caries; then, preventive methods can be proposed. Because of this, dental trauma epidemiological features in regions and particular populations need to be elaborated on through individual study. On the other hand, the identification of the particular epidemiological features of dental trauma could also generate special management, the general method should be to conduct a therapist examination within 1 month. Postactivation mixing had a significant impact on the flexibility.

3. Management Strategies in General Dentistry

Dental trauma is a common accident that can be easily sustained during leisure activities or professional sports. The consequences of either are distressing for the patient, particularly in cases of anterior tooth displacement or avulsion. In adults, the peak prevalence age for dental trauma is between 19 and 29 years. This may contribute to an age-related accumulation of risk. Studies on schoolchildren and university students demonstrated that the majority of dental trauma occurred at school. An educational program has the potential to increase children and young people's problem-solving abilities in the event of multiple trauma types. Nonetheless, people suffering trauma do not always seek medical assistance, so education campaigns should focus on caretakers (Grazia Cagetti et al., 2019). At the same time, it is crucial to spread information to the public and to stakeholders, as well as to provide guidelines and recommendations, in order to curb trauma and limit related consequences. This scoping review also analysed treatment modalities, suitable for general dentists to better manage patients in the event of dental trauma. The guidelines produced will suggest appropriate treatment strategies for general dentists managing different trauma scenarios according to their level of experience and access to specialist support.

Prompt interventions after dental trauma are critical for improving prognosis. This is particularly the case for avulsed teeth, where success is highly time-dependent. Despite appropriate professional action, healing is often compromised by ankylosis, inflammatory resorption, root resorption, or replacement resorption. Ankylosed enamel has been reported as a positive predictor for external cervical resorption. The classification system is valuable in monitoring teeth at risk for external inflammatory resorption development. It is important to closely monitor these teeth and to begin treatment at the earliest possible stage. Dental trauma implies various levels of dental and periodontal involvement, and more complex cases require specialist care. Dental care after traditional focus is very limited. In fact, there has only been limited research on the knowledge and practice of dental trauma management amongst specialist practitioners. Hence, the objectives of this scoping review are a qualitative assessment of the current understanding of dental trauma amongst general dental practitioners and an analysis of the recommendations and currently available evidence for treatment modalities that could inform general dentists in managing more complicated cases.

3.1. Immediate Management Protocols

Dental trauma affects millions of patients worldwide every year, with significant variation between populations. Immediate and appropriate patient management may be helpful in both paediatric and adult cases. It should start with assessing the patient and defining the trauma, followed by knowledge of simple techniques as initial emergency consultation, as time is critical in such emergencies. Timely treatment is of utmost importance to reduce complications and increase the possibility of dental survival. It has been demonstrated that there are a number of misconceptions about tooth avulsion, several of which are common in dental practices. Since long term success of tooth avulsion is enhanced by first-aid intervention, general dental practitioners and those in related health fields are encouraged to become knowledgeable about first-aid management of avulsed teeth in relation to their training level. The aim of this study was to review the guidelines for the first-aid management of tooth avulsion.

Prior to describing epidemiological considerations, immediate management strategies and overall management considerations, the principal terms must first be defined. An orofacial injury is defined as an injury to any part of the face, lips, teeth, or mucosa in and around the mouth. Dental trauma is defined as an injury to one or more teeth resulting in a complex of disorders involving nerves, blood vessels, or supporting structures. Prevalence of dental trauma is higher than the prevalence of overall orofacial trauma (Grazia Cagetti et al., 2019). A dental professional should evaluate any patient that has experienced an orofacial injury to ascertain if there has been concomitant dental trauma. More than 50% of dental trauma occurs during participation in sports activities as well as during fights, and the severity of dental trauma is high enough to warrant immediate dental care.

3.2. Long-term Treatment Approaches

Restorative treatment for dental trauma does not guarantee long-term results. As time goes by, restoring teeth affected by trauma requires comprehensive knowledge regarding materials and their usage. More than 75% of all traumatic oral injuries involve the upper incisors, and such injuries are quite common in young children and adolescents, accounting for 14% of dental injuries (Asnaashari et al., 2006). From a population perspective, a child is fifty times more likely to suffer an injury to the upper incisors than an adult. Traumatic injuries can disrupt the formation of enamel and dentine, render the tooth luxated or avulsed, and also damage the pulp, leading to a narrowing of the pulp space in later years. In general, restorative treatment is aimed at returning a tooth to its form, function, and aesthetics (T Felt & Soolari, 2014). Indirect restorations can cover at-risk, traumatized teeth, offering superior mechanical properties, as well as a better marginal adaptation, and being less susceptible to leakage in comparison to direct composite restorations. However, little is known about the long-term outcomes of traumatized permanent teeth, especially in those cases treated with onlays.

Second to adequate trauma diagnosis and acute management, follow-up and long-term control of the cases are also critical ingredients that may hugely affect patients' prognosis. There is clear evidence that the course of treatment of traumatized permanent teeth deserves awareness. Delayed action, inadequate therapy, or nonobservance of treatment guidelines may translate into a chain of events that might eventually compel the tooth to be extracted. Trauma-induced changes that extend beyond enamel are related to the depth and site of the injury. Consequently, unless for some specific, external factors, common enamel fractures are predictable, and in most of the cases, pulp is not affected. Given this treatment scenario and provided that the patient remains compliant, favorable prognosis is indeed foreseen. However, expanded sort of damages regarding enamel, affecting dentin as well, have to be complemented with comprehensive restorative care. On such occasions, the introduction of indirect onlays (involving the replacement of the fractured angle of the tooth) presents itself as a judicious treatment strategy. Crucially, a protracted view that goes beyond the provision of treatment must involve a comprehensive longitudinal examination. Importantly, dental records must include all existing and complication records that, albeit not immediately obvious, result from the initial accident.

4. Future Perspectives and Innovations

1. Introduction Dental trauma of paediatric patients in comparison to adult patients has been investigated over the last twenty years. This scoping review aims to summarise the evidence that has been published for both paediatric and adult dental trauma in comparison. The epidemiological trends of paediatric and adult dental trauma will be addressed, considering the anatomical difference and the unique morphology of permanent teeth. The main injury types experienced differ between the two age groups. In terms of the developmental stage of dentition, one notable feature is the increased risk for dental trauma when the first permanent molars erupt. The reasons for this increased risk, which is not found in any adult teeth, will be discussed.

2. Management Strategies in General Dentistry Tooth fractures are among the most common traumatic injuries to primary and permanent dentition in children. Generally, very young children have appearance-related traumas to the primary incisors, whereas for children and young adolescents, traumas to crown and root fractures of the permanent incisors and first permanent molars are common. Variables such as coronal pulp involvement, when and how the injury occurred, and the existence of other concomitant injuries are considered circumstances which frequently increase the complexity of management of tooth fractures. After its occurrence, the first issue to keep in mind is whether the tooth fragment is available and in proper conditions for its bonding to the tooth, which would be the best method to be carried out for restoration. Otherwise, the restoration method option chosen should have a reasonable prognosis, regarding the absence of sensitivity, promoting aesthetics coverage, shaping and alignment.

3. Future Perspectives and Innovations Splitting of tooth roots has been a fatal injury in treating permanent teeth, but not for primary teeth, because primary teeth naturally exfoliate during physiological root resorption. Direction of communication of root fractures can be placed palatally, mesially, distally, or even to the facial aspect of the tooth, depending on the side of impact. As regarding the latter two, there are case reports about external and internal root resorption affecting primary teeth following comminuted fractures. The extent of hard tissue injury is enough to cause mechanical strangulation of pulp tissues in permanent teeth, possibly causing irreversible pulpits or necrosis.

There were no available guidelines for dental trauma prevention and treatment tailored to the medical professional, nor was there a document that could be used for uniform coding of such injuries in children. A fuller understanding of the mechanisms contributing to dental wounds would help identify groups at risk, leading to the implementation of environmental modifications aimed to improve dental safety. Effectiveness of preventative strategies has by and large been judged on the

results of widespread community-based public health dental programs which have a scope significantly broader. On the contrary, what has been lacking in the field of dental trauma is an approach akin to the epidemiological analysis of more severe injuries, such as spinal cord or head trauma. Further systematic clinical studies are necessary to determine guidelines for therapy. Miscellaneous extra- or intra-oral protective devices, such as mouthguards, have been demonstrated to offer protection from dental trauma, whether by preventing or by mitigating the sequelae of such injury. Mouthguards are defined as protective devices for the mouth that cover the teeth and gingiva. (Bastani et al.2021)(Tewari et al.2021)

4.1. Technological Advances

Dental traumas are among one of the most common oral diseases, and their frequency tends to increase with age. Hence, the occurrence of a certain dental trauma in an adult may less probably be considered as related to sudden falls or impacts (Mordini et al., 2021). Severe dental traumas are mainly associated with sport and traffic accidents. Sports in young and adult males and traffic accidents in male drivers are two of the highest percentages of dental traumas. Professional workers, consumers, and industrial patients primarily are reported to have traumas in sport. The high prevalence of TDIs during sport activities can be a burden for professional and amateur athletes, who may have game related facial injuries and perform more violent sports such as boxing or ice hockey. Moreover, the increased practice of activities like skateboarding, mountaineering, and cycle-crossing have a relevant ratio of facial traumas. Successful treatments can be characterized by an adjusted timing, from the occurrence of the trauma, until a long-term follow up, from diagnosis to prevention, form therapy to disease. Nevertheless, the waiting time for receiving care may undergo the long queue of the hospital, thus delaying medical care assistance. Consequently, such cases are a burden for the NHS networks and hospitals, where other life-threatening emergencies should have more attention and contain resources utilization. (Patnana et al.2021)(Petti et al.2022)

The management of young TDI patients can be addressed when the minimum standard of surgical care is reached, by applying oral surgery principles also to the non-professionals. A scoping review of the literature was conducted on studies exploring the epidemiological trends and treatment strategies concerning dental trauma occurring in patients aged between 6 and 40 years. Thus, three key thematic areas were mined, which include epidemiological trends, management strategies and telemedicine applications. It is concluded that epidemiological trends nearing patients from 6 to 40 years were not reported, and this study outline future research perspectives.

4.2. Preventive Strategies

Dental trauma is a very common accidental injury in children and adolescents, with 18% of subjects experiencing some type of damage to the teeth or supporting tissues, either as a primary or secondary result. Despite the high frequency and frequency of dental trauma events, it is easy to avoid the associated damage by providing rapid and appropriate first aid treatments. Therefore, general dentists need to be ready and able to provide educational information on the prevention, emergency management, and possible sequelae of dental trauma events, although most children and parents ignore them. This document is a review of the literature on dental trauma contested in children and adolescents intended as a possible implementation of basic structured education modules that can be quickly shared by healthcare professionals for informative purposes. The discrepancies between national guidelines and literature and future research needs are highlighted (Grazia Cagetti et al., 2019).

Preventive strategies can significantly reduce the incidence of dental trauma therefore, healthcare professionals can play an important role in controlling the prevalence of dental trauma. Prevention includes the installation of appropriate preventive equipment, the adoption of rules of conduct during play activities, the use of appropriate protective elements, and knowledge of how to act in case of trauma. Preventive and educational efforts should be constantly oriented. First of all, it is important to increase social awareness through educational campaigns. All actors, schools, parents, sports organizations, and local health units should be involved. For this reason, starting from 2008 in the month of May, a preventive project has been established and supported by the region of Sicily in collaboration with the Italian Society of Pediatric Dentistry and the Department of Dentistry of the University of Catanzaro. The purpose of education is to provide the necessary theoretical and practical knowledge in the field of dental trauma to professionals who may come into the first and most frequent contact with this social condition. Adequate treatment in pediatric dentistry for oral-dental trauma should be rapid, immediate, and, most importantly, early. It should then be conducted efficiently and seriously to avoid complications from iatrogenic causes. Education can act to protect the public from irreversible damage caused by the possible negligence of healthcare professionals. Preventive programs for the treatment of extra and intra oral dental trauma, such as programs for the distribution of helmets, mouthguards, and information materials, labor law obligations for schools and sports clubs that deal with young people, can be programmed and organized by present local health companies on their respective territories. Moreover, the oral hygienists could draw up a

simple questionnaire, easily understandable for the general public, concerning the identification and evaluation of trauma risk factors. Therefore, it appears necessary to tailor specific and personalized preventive strategies according to the type of trauma lesions and the local or systemic health status of the pediatric patient. A group that includes trauma risk activities should be assumed to provide greater support for low-level certainty measures. Periodic counseling and assistance need to be provided, paying particular attention to the risk associated with deep wounds with exposure to the pulp and alveolar bone. Health initiatives should start from schools and local health companies health prevention interventions at pediatric level. Preventive initiatives against trauma could be included among the health interventions programmed in the curriculum of the school hygiene service, favoring the integration of health education guidelines for greater effectiveness. From the previous data, it appears that the scientific literature supports the effectiveness of health education as authoritative sources in trauma prevention, recommending periodic update courses on the management of dental trauma conditions with respect to a dentist. More studies are needed to generate actionable knowledge for the development of preventive models for various age groups with different predisposing health factors. It is believed that such studies can capitalize on the development of prevention methodologies for the school population with increased reference to specific guidelines outlined by the scientific literature. Instead of simply responding to traumatic events, the role of dentists could be much more active in promoting mandatory ongoing preliminary visits to schools for biomechanical risk assessment with respect to ipsilateral trauma. The evaluation considers the increased risk of injury in the maxillary incisor of the permanent dentate of orthodontic therapy and recommends promoting the distribution of mouthguards or helmets. Local health units should act as intermediaries for carrying out programs and agreements between dental professionals, public administrations, and schools. The project should provide for the methodical registration of trauma clinical episodes motivated by falls during school hours, with the aim of promoting knowledge of the susceptibility to risk on the part of operators and adherence to health prevention initiatives. Another project to improve oral health education levels for the prevention of dental diseases. School curricula that pay adequate attention to issues of preventive oral health education could be effective in significantly reducing the incidence of both caries and other dental injuries. Apart from traumatic injuries to extra and intra oral dental tissues, risk and prevention activities conducive to oral-facial trauma also include head and neck trauma. Clearly, it is necessary to strengthen the health education of the root of all detachable incisors that occurred in road vehicle incidents. As a result, students and family members will begin to consider a less “light” dental-trauma episode and there will be a lower level of drop-out from the diagnostic-therapeutic process. Therefore, it becomes necessary to create collaborative synergism with the hospital emergency services operating in the territory also stipulating the Protocol Agreement at a local level of urgent care and transport. Also the legal medicine and forensic odontology can collaborate to delineate a model of discipline and organization of the aid network to dental trauma that can configure a standard of professional diligence. The analysis of the literature on epidemiology and on possible default models for prevention and treatment of extra and intra oral dental trauma can prompt formulation of the hypothesis of the guidelines, useful for promoting the adoption of more correct preventive and/or treatment behaviors also as a model of professional best practice. Since accidental extra and intra oral injuries are the main cause of consultation in the dental body, they are in favor of the widespread diffusion of poste-virulent sequelae of a more or less serious nature, even if most of the traumas are simple dental factures and avulsions. The diffusion among the general population of the most correct behaviors to put into act in the event of the dental body is of primary importance for improving the outcomes of the therapy. Given these premises and in view of the positive validation of the present rules, including the proposals for preventive action pre and post trauma interactions, a technology transfer agent makes suitable the possibility of editing a brochure easy to consult by non-specialized subjects and containing the main indications on the management of dental trauma in agreement with the line laid down by the same guidelines. (Patnana et al.2021)(Lipsky et al.2021)(Jum’ah et al.2021)

5. Conclusion and Implications for Practice

After delineating the epidemiological trends on dental trauma, it was important to deliver general management strategies for pediatric and adult cases in the field of general dentistry. In this regard, the common and emergent approaches for both age groups have been better laid out. The necessity of a scoping review of dental trauma epidemiology and management was based upon scrutinizing various aspects of dental practice and the scarce research examining this issue. In line with this watch, the present scoping review presented comprehensive information about dental trauma, providing epidemiological data and general dentistry management strategies in three subareas. Recognizing that this will be beneficial in guiding dental practice and research, it is important that these issues be well understood. From this perspective, the findings of the dental trauma scoping review should be understood within their importance. Practical suggestions for dental practice are also provided here. Investigating dental trauma as a prevalent oral emergency in the context of global needs, an active response for the prevention and cure of these injuries should be raised. As the pandemic crisis educated all countries in the primary importance of primary

care and emergency preparedness, clear policies for dealing with oral traumas should be followed. In this regard, an enhanced future research agenda is proposed here. This would involve extensive investigation to find new insights on dental trauma for the benefit of people. Educational considerations are raised, as well as the necessity to offer advice to healthcare providers, particularly dentists.

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