



Correspondence

The medical care network for facial and dental traumas of the outlying island students: A case study of Kinmen County Jin-Hu Junior High School



KEYWORDS

Facial and dental traumas;
Medical care network;
Outlying island students;
Oral and maxillofacial surgeons

The facial and dental traumas are common in children and adolescents, usually at home or at the school. The main causes are accidental falls and collisions during play or sports, or traffic accidents on the way to and from the school. Severe facial trauma is often accompanied by the dental trauma. The dental trauma may not only cause the tooth crown fracture, affecting the appearance and even the pronunciation, but also cause damage to the dental pulp and tooth supporting tissues, leading to inflammation, necrosis, and infection of the dental pulp, and even the formation of gingival abscesses or fistulae, the loosening, displacement, and avulsion of the teeth, and the laceration of facial or oral soft tissues. In severe cases, there may also be fractures of the alveolar bones, jaw bones or facial bones.¹ If the dental trauma in children and adolescents is not promptly and appropriately treated, it may result in tooth loss or extraction and malocclusion, which in turn may affect their future physical and mental development. Due to the limited medical resources on the outlying islands, it is crucial to establish an effective and timely medical care network for the students' facial and dental injuries by integrating the parent, school, and medical systems. This article reported the medical care network for

facial and dental traumas of the outlying island students using Kinmen County Jin-Hu Junior High School as an example.

Under this medical care network, there are five roles in the medical care systems for the facial and dental traumas of the outlying island students. These five roles include the school nurses, the parents, the dental clinics, the Kinmen Hospital, and the responsible hospitals in Taiwan (Fig. 1). At Kinmen County Jin-Hu Junior High School, there is a full-time school nurse responsible for the emergency care of the students injured in accidents on and around the campus. In terms of the facial and dental traumas, the school nurse needs to firstly determine the severity of the students' injuries and provide the necessary initial care. For those with the minor injuries without the dental trauma, the school nurse may provide the facial trauma care, explain the condition to the parents, and provide the necessary trauma care knowledge. Then, the parents can take their children to a local dental clinic or the Kinmen Hospital for seeking the further medical advice. For those who have obvious or suspected dental trauma, in addition to the facial trauma care, the school nurse must assist with the medical visit in a timely manner. Generally, the

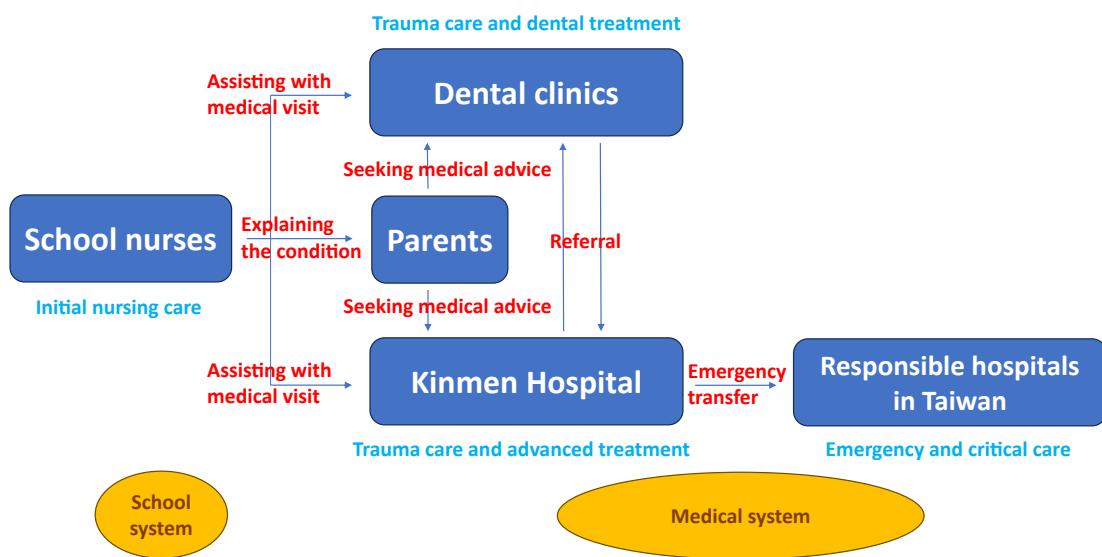


Figure 1 The medical care network for the facial and dental traumas of the outlying island students using Kinmen County Jin-Hu Junior High School as an example.

accidental dental trauma that occurs to the students on campus are mostly the tooth fracture and occasionally the tooth avulsion. The dental clinics are the priority for the immediate dental and medical treatments. In the case of tooth avulsion, the school nurse may properly clean and preserve the avulsed tooth as soon as possible, and hand it over to the dentist to insert the avulsed tooth into the original socket in time, which usually leads to a good prognosis.² For those with the particularly severe facial injuries involving possible facial bone fractures, the students are usually taken to the Kinmen Hospital emergency department for the trauma care and advanced treatment as soon as possible. Moreover, the trauma care and dental treatment each belongs to the different specialties. Therefore, for the subsequent treatment, the referrals may be made between the Kinmen Hospital and the dental clinics. However, for those extremely serious and difficult cases that exceed Kinmen's medical capabilities, the only option is to activate the emergency medical transfer mechanism for the critical illnesses and transport the injured by the helicopter to a responsible hospital in Taiwan for further treatment. Fortunately, we have not encountered such serious situations in the campus accidental injuries.

There were only 20 dentists in Kinmen County in 2023, accounting for only 0.12 % of the 16,285 dentists in Taiwan. This means that Kinmen is facing the problems and challenges related to the improvement of shortage of dental resources and the promotion of the localized medical care.^{3,4} The facial and dental traumas involve the destruction of the hard and soft tissues in the oral and maxillofacial region. The severe cases may also involve the fracture of the facial bones, jaw bones, alveolar bones, and teeth. In addition to the trauma care and fracture repair, the treatment also needs to consider the subsequent restoration of the stable occlusion. The treatment of complex facial and dental traumas requires someone with both surgical and dental expertise, such as an oral and maxillofacial surgeon. Currently, Kinmen is also short of the

dental specialists. It is looked forward to having the oral and maxillofacial surgeons engaged in the medical services in Kinmen in the future. This will complete the medical care network for the facial and dental traumas of the Kinmen students. It also contributes to the development of the localized dental services.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Acknowledgments

We are grateful to the school nurse of Kinmen County Jin-Hu Junior High School, Registered Nurse Ya-Hui Wu, for her assistance during the writing of this article.

References

1. Reddy LV, Bhattacharjee R, Misch E, Sokoya M, Ducic Y. Dental injuries and management. *Facial Plast Surg* 2019;35:607–13.
2. Huang R, Zhou C, Zhan L, et al. Experts consensus on management of tooth luxation and avulsion. *Int J Oral Sci* 2024;16:57.
3. Cheng FC, Chen CH, Lee MC, Chiang CP. Analysis of spatial accessibility of dental institutions in Taiwan: the application of a geographical information system software. *J Dent Sci* 2025;20:707–9.
4. Cheng FC, Chen CH, Lee MC, Chiang CP. Analysis of spatial accessibility of dental emergency hospitals in Taiwan: the application of a geographical information system software. *J Dent Sci* 2025;20:1358–60.

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Received 10 May 2025
Available online 21 May 2025

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