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Planning the content of a brief educational course in maxillofacial emergencies for staff in accident and emergency departments: a modified Delphi study

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Abstract

It is well known that staff in accident and emergency (A&E) departments lack the knowledge and confidence needed to deal with maxillofacial emergencies, and that it is related to limited education at undergraduate and postgraduate levels. We therefore aimed to design a syllabus for a short course to educate staff about the most common emergencies. To find out which learning outcomes should be included and to reach a consensus, we did a 3-stage modified Delphi study of the opinions of members of the British Association of Oral and Maxillofacial Surgeons (BAOMS). Of a possible 890 members, 188 responded (21%) in the second round and 105 in the third (12%). Eighteen (37%) of the 49 proposed learning outcomes were rated very important and all of them were retained in the syllabus after the third round. Thirty (61%) items were retained with a consensus of 51% or above in the final round. The Delphi technique is a useful addition to the armamentarium of those involved in education, and has been used effectively in syllabus design. We achieved good consensus on the items to be included and the syllabus will be piloted locally.

Keywords: Delphi technique; Medical education; Emergency medicine; Maxillofacial emergencies

Introduction

It is well known that staff in accident and emergency departments (A&E) in the United Kingdom lack the knowledge and confidence to deal with common maxillofacial surgical emergencies. Trivedy et al.[1] reported that over three-quarters of the staff in their survey had no formal training in their management despite the fact that facial injuries secondary to interpersonal violence account for a disproportionate percentage of attendances at A&E across the country.[2] It is also widely recognised that undergraduate education in oral and maxillofacial surgery is poor.[3]

Work done in otorhinolaryngology has shown the value of training to improve immediate management by staff in A&E before referral to the specialty. Agrawal and Brayley[4] showed improved outcomes in initial assessment and management of nasal fractures after education and the introduction of a departmental protocol, and Evans et al.[5] highlighted suboptimal outcomes for the immediate management of epistaxis. Looking more widely, education in areas as diverse as the use of blood products and the management of acutely poisoned patients has resulted in considerable improvements in immediate care.[6,7]

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We therefore aimed to develop a curriculum for a brief educational course on the diagnosis and immediate management of common maxillofacial emergencies for staff in A&E.

Methods

We used a modified Delphi technique. The Delphi method, which channels expert opinion to achieve consensus on contentious issues, has been used in a wide variety of settings. The modified technique uses successive questionnaires to harness opinion from a wide audience to shape an educational curriculum. We chose it because it has been used successfully to design curricula in other specialties.[8–10]

For each stage we used an online electronic survey tool (SurveyMonkey®).[11]

Stage 1

The initial questionnaire was sent to staff in the oral and maxillofacial, and A&E departments ($n = 34$) at Worcestershire Royal Hospital. Respondents were asked to make suggestions for key learning outcomes in free-text boxes. There were 11 domains: examination and initial assessment, airway management and surgical airways, requests for imaging and interpretation, orbital trauma and complications; and hard tissue, soft tissue, and dental injuries, orofacial infections, oral medicine, practical skills, and any other learning outcomes not covered elsewhere. Respondents were told that these learning outcomes would be put forward nationally in successive rounds of a Delphi process to shape a brief educational course on common maxillofacial emergencies for staff in A&E.

Stage 2

The learning outcomes obtained from the first stage were used to inform the second round of the survey, which was sent to all members of the Association of Oral and Maxillofacial Surgeons (BAOMS) except those studying for their first degree ($n = 890$). The 11 domains were merged to create 6 areas: examination and initial assessment, clinical skills, maxillofacial trauma, imaging, orbital trauma, and orofacial infections and oral medicine. Respondents were invited to rate each one using a 5-point Likert scale (1: not important at all to 5: very important).

Stage 3

The learning outcomes, along with a mode score and percentage agreement with the mode from the previous round, were returned to the people surveyed in the second round. Respondents were then asked whether they would retain or discard a learning outcome, or were unsure. Outcomes with consensus of more than 51% were included in the final draft of the syllabus.

Results

Stage 1

There were 15 responses from staff in the oral and maxillofacial, and A&E departments at Worcestershire Royal Hospital in the first round (response 44%). A total of 49 learning outcomes were suggested and they were merged into 6 areas (Tables 1–6).

Table 1
Examination and initial assessment. In each table, the modal score from the second round is given with the percentage of respondents that agreed with it and the percentage of respondents that voted to retain it in the third round.

Learning outcome	Mode	Agree (%)	Retain (%)
Sound understanding of applied anatomy of the head and neck	4	38	58
Ability to assess airways and involve specialist help early	5	86	97
Confidence to identify a compromised airway early	5	86	97
Ability to assess head injuries and request timely imaging	5	62	91
Ability to assess and clear injuries of the cervical spine	5	63	92
Knowledge of applied anatomy of the facial nerve	4	38	57
Knowledge of applied anatomy of the parotid duct	3	39	42
Knowledge of applied anatomy of the nasolacrimal duct	3	42	31
Ability to detect step defects and suspected facial fractures	4	39	73
Evaluate the occlusion and recognise an altered occlusion	4	40	86

Table 2
Clinical skills.

Learning outcome	Mode	Agree (%)	Retain (%)
Ability to provide a surgical airway	5	46	78
Ability to use a bridle-wire to stabilise a fractured mandible	3	33	15
Competence in suturing lacerations of the scalp	4	43	83
Competence suturing simple facial lacerations	4	40	74
Ability to manage emergencies pertaining to tracheostomies	5	47	80
Ability to give local anaesthetic blocks	3	31	19
Complex closure with placing of deep sutures and a layered repair to wounds	3	30	28
Competence in replanting avulsed teeth and splinting	4	29	42
Ability to take an impression	1	55	10