

How should we manage severe anxiety towards dental treatment in UK service personnel?

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ABSTRACT

Anxiety towards dental treatment is a significant barrier towards care within the United Kingdom Armed Forces. Avoidance of dental treatment results in morbidity, and severe dental infections can lead to systemic disease, which in turn may require hospitalisation. Of greater concern are deployed phobic patients who may develop dental pathology or suffer dental trauma and will likely require evacuation to the UK or a suitable host nation. This has considerable financial implications and in a war setting may place everyone in the evacuation chain at greater risk especially considering that it is not possible to manage these patients in Role 1 or 2 environments. Managing anxiety using either sedation or a general anaesthetic as a long-term management strategy for anxious military patients is simply not practical. This is reflected by current Defence policy stating that service personnel who are unable to tolerate treatment under local anaesthetic (LA) alone should be medically downgraded. However, the situation should ideally be addressed at the time of first recruitment. Currently, despite regulations recommending that potential new military recruits who cannot tolerate routine dentistry under LA should be medically discharged, in reality the subjectivity of such an assessment means this rarely happens. We would instead recommend that following identification of dental phobic recruits in initial training, they be placed in a holding platoon while methods to address their anxiety are explored. This would potentially avoid them entering military service and ultimately being discharged.

INTRODUCTION

Anxiety towards dental assessment and treatment remains a significant barrier in modern healthcare.¹⁻³ Dental anxiety reduces attendance for check-ups as well

as presentations for emergencies.³ This translates to a reduction in the manner in which future dental problems can be identified and prevented. Avoidance of dental treatment results in morbidity, including persistent pain, reduced nutrition and low self-esteem. Dental infections can lead to systemic disease, which may require hospitalisation and still occasionally death.⁴ Dental diseases have a huge socioeconomic impact, both in terms of school and work attendance and the financial consequences of patients, parents or careers taking time off to manage such sequelae. In the UK, only 61% of adults report regular attendance for dental assessment, for which dental anxiety is the most common cause of non-attendance.¹ The prevalence of patients with dental anxiety has been described in the general population of being between 12% and 20%.^{1,5} The vast majority of such papers must be treated with caution as they only survey the patients that actually attend. Therefore, the prevalence of dental anxiety in the general population is likely higher.

Dental anxiety and military service

Dental disease and anxiety towards treatment is recognised to be a serious problem in military forces worldwide,^{4,6-8} including the UK,² but limited evidence exists to quantify it. Recently, in a survey of dentists responsible for treating UK military patients, 61% had encountered patients that could not be treated with local anaesthetic (LA) alone due to anxiety.⁹ A study of patients attending three UK military dental centres found severe dental anxiety in 27% of attendees.² However, the effect of such anxiety manifests differently to the civilian population, because all United Kingdom Armed Forces Service Personnel are required to attend regular dental inspections as a condition of their service. Compulsory attendance for military patients has been shown to result in reduced dental morbidity, reflected by a lowering in the disease and non-battle injury rate.^{4,5}

Causes of dental anxiety within the general population are widely recognised (Box 1), of which military patients have multiple risk factors, especially recruits.^{3,7}

Key messages

- ⇒ Long-term dental avoidance due to dental anxiety is not commensurate with a career in the armed forces and must be managed appropriately.
- ⇒ The current approach to managing individuals with dental anxiety is challenging and rarely implemented, requiring both medical officer and dental officer input.
- ⇒ It may be appropriate to identify individuals with significant dental anxiety during phase 1 training, with an opportunity to manage the anxiety here.
- ⇒ Failure of phase 1 recruits being able to tolerate routine dental care without sedation may mean they are unsuitable for military service.

Education levels are often lower than an age matched comparable civilian population. One study found that 39% of Army recruits at 18 years old had the literacy level of an 11-year-old,¹⁰ compared with 15% of adults in the general population.¹¹ Army recruits typically have poor previous dental attendance, with a recent internal report finding only 22% attended regularly prior to enlistment.¹²

Treatment options to manage anxiety

The management of patients who cannot tolerate routine treatment under LA alone is never a clear-cut situation. Avoidance of pain during procedures is essential to maintain patient trust.¹³ Interventions used in civilian practice include acupuncture and behavioural techniques.¹⁴ However, these may not be practical in an emergency setting and particularly in the deployed setting, where pharmacological methods of sedation may be the only realistic option. Nitrous oxide sedation is safe and can be extremely effective at managing patients with mild to moderate dental anxiety, particularly by raising the pain threshold.¹⁵ Recovery is rapid, and patients can be discharged without the need for a chaperone.

Midazolam is the most commonly used intravenous drug in dentistry for managing patients with moderate to severe anxiety. It can be titrated to clinical effect and, if required, is reversible using flumazenil. Midazolam helps control physiological parameters including blood pressure, heart rate and respiratory rate. Oral and transmucosal sedation can also be used in the dental setting, but most would be considered advanced techniques

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Box 1 Risk factors for the development of dental anxiety

- ⇒ Lower socioeconomic group.
- ⇒ Bad previous dental attendance.
- ⇒ Poor previous dental attendance.
- ⇒ Poor current dental health.
- ⇒ Lower education status.

as patient response is variable, leading to potential over, or under sedation.¹⁶ In any case, patients would still need to undergo cannulation to permit flumazenil administration if necessary.¹⁶ 'Premedications' should be considered separately to formal sedation and most commonly involve an oral anxiolytic taken by the patient independently at some point prior to the procedure (this commonly includes the night before or an hour before). Dental treatment under a general anaesthetic (GA) is used in civilian dental practice but strict guidance for its use exists.^{17 18} It is not used in the military, except following referral to secondary healthcare facilities to perform surgical procedures.

Guidelines for the management of dental anxiety in military patients

In civilian practice, the 'Index of Sedation Need' selects patients based on parameters in selecting patients for sedation.¹⁹ A score is given for each parameter, namely medical history, anxiety level and the complexity of the procedure being performed. Although pertinent to military practice to a degree, the employability of a service person would likely reflect more than just a risk assessment as to their likelihood of not tolerating dental treatment under LA alone if necessary.

Dental anxiety presenting in serving military personnel is considered within the 'Joint Service Publication (JSP) 950 Medical Policy Part 1'²⁰ and in 'Defence Primary Healthcare clinical guidelines Annex M' entitled 'Management of the Anxious Patient'.²¹ Standard operating procedures consider the clinical management of patients with dental anxiety, including the selection of patients for intravenous and inhalational sedation. JSP 950 discusses the grading and management of in-service personnel who cannot receive routine treatment under LA alone, as well as considering the impact of dental anxiety in selecting new military recruits.²⁰

The General Dental Council Standards for the Dental Team directs dental registrants that they 'should manage patient's anxiety appropriately'.²² JSP 950 considers that for the majority of service personnel

desensitisation, behavioural strategies and pain control can facilitate effective treatment within primary dental care. Conscious sedation should be considered when behavioural strategies are contraindicated due to surgical complexity or have failed.²⁰ In addition, we would recommend sedation for patients with a significant gag reflex. Referrals for sedation must be carefully managed, with over referral resulting in dependence and an inability to be treated in any other way. Underutilisation, in particular for challenging interventions such as third molar extractions, may result in future dental anxiety in patients who were previously normal.

What do military dentists think about the need for sedation in the armed forces?

A recent survey has demonstrated general consensus among dentists responsible for treating military personnel that there is a requirement for sedation in the armed forces.⁹ Variations were found between services though, with 100% of civilian dental practitioner's stating sedation is required, 93% of RAF dentists, 90% of army dentists but only 72% of navy dentists.¹⁰ Sixty-eight per cent of surveyed military dentists stated they routinely refer patients for intravenous sedation to avoid general anaesthesia due to concerns about potential risks.⁹ This aligns with current best practice,¹⁶ although the overall safety of general anaesthesia is incredibly high when performed in a well-controlled environment.

What are the risks if we just ignore the problem of dental anxiety in the military?

Managing anxiety using either sedation or a GA as a long-term management strategy for anxious military patients is simply not practical. According to policy described in the JSP, anxious patients who are unable to tolerate treatment under LA should be medically downgraded.²⁰ Despite this, 26% of surveyed dentists responsible for treating military patients did not agree that such patients should be downgraded. This must be seen as a considerable risk, as such patients who develop dental pathology will likely require evacuation to the UK or a suitable host nation. In a war setting, this places everyone in the evacuation chain at greater risk and has considerable financial implications. In those patients unlikely to deploy then not medically downgrading anxious patients could be considered temporarily, and treatment strategies using

conscious sedation can be attempted. However, this runs the risk of dependence on sedation. An internal study completed in 2014 found that up to 40% of patients treated under intravenous sedation in the UK military were considered to be dependent on it for further treatment, and 44% had received at least two previous treatment sessions under IVS.⁹ While midazolam in particular has predictable and reliable anterograde amnesic effects,²³ this property does not lend itself to re-establishing confidence. Only when a range of anxiety management techniques are used in combination is it likely that dependence on sedation for dental treatment is likely to be reduced.⁷

How should we manage new military recruits with dental anxiety?

One potential way of reducing the prevalence of military patients with dental anxiety is to select them out at recruitment. Military personnel exhibit high disease levels on enlistment. In 2014, 64% of recruits at the Infantry Training Centre Catterick were found to have active caries compared with a prevalence of 30% of the general population.^{1 12} A survey of dentists treating military patients found that 62% believe that new recruits identified as suffering significant dental anxiety should not be allowed to join the armed forces.⁹ JSP 950 considers pre-entry medical grading in relation to dental phobia. It is states that potential recruits who cannot tolerate routine dentistry under LA should be medically graded P8 (discharge).

However, currently this assessment is undertaken by a Medical Officer in a subjective manner, with dental input only being required if specifically requested. This has resulted in the acceptance of recruits with dental anxiety, who have been ultimately discharged. One way of potentially overcoming this is to identify dental phobic recruits in Phase 1 training and place them in a holding platoon while methods to address their anxiety are explored. Where this cannot be achieved, discharging these individuals, thereby preventing them from entering regular service, would seem sensible.

CONCLUSION

Dental anxiety may present at any point during a service person's career and may be associated with a wider anxiety disorder. Intravenous sedation remains a useful tool to manage such anxiety in the short-term, but its dependence is to be avoided at all costs. A coordinated approach between the Dental Officer, the

Medical Officer and the Mental Health team may be required, and ultimately a service person may be considered unsuitable for future service in the UK armed forces where their dental anxiety is such that it could pose a risk on deployment.

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