

Exploring the effect of educational video on the level of anxiety in patients undergoing dental extraction: Randomized controlled trial

Introduction

Anxiety is a future-oriented mood state where individuals prepare for anticipated negative events (Barlow, 2002). Research indicates that, according to the WHO, anxiety and fear affect between 15-20% of the global population (Torriani et al., 2014). A common definition of dental anxiety describes it as a blend of discomfort, apprehension, and fear felt by patients undergoing dental treatment (Dereci et al., 2021). Dental anxiety is a common widespread emotional reaction impacting many people worldwide, posing significant global complications. It frequently leads to postponing dental visits, which, in turn, negatively affects one's oral health related quality of life. It is not restricted to a specific city or country and is considered a form of iatrogenic stress resulting from dental treatment. Triggers of dental anxiety can range from clearly identifiable causes to more vague or even unknown origins (Saatchi et al., 2015). A study revealed significant correlations between dental anxiety and factors like gender, educational attainment, and socioeconomic status. Notably, anxiety levels are higher among women and individuals from lower socioeconomic backgrounds, though it is also prevalent among those with higher education. Dental professionals must understand these relationships to develop targeted strategies for managing dental anxiety, ultimately improving patient care and outcomes (Muneer et al., 2022). Dental anxiety varies between children and adults regarding its causes, effects, and the psychological mechanisms involved. Children often experience anxiety related to fear of the unknown and unfamiliar situations, while adults typically develop anxiety based on negative previous experiences with dental care (Gao et al., 2013, Armfield, 2010). Furthermore, children rely more heavily on reassurance from parents and healthcare providers, while adults often seek more detailed information about procedures to help alleviate their anxiety (Coyne, 2006). Dental extractions are commonly performed interventional procedures, carried out in

high volumes globally each day. The complexity of a tooth extraction varies depending on the type and related factors (Gadhia & Pepper, 2023). Tooth extraction, being an invasive procedure in dentistry, is recognized as one of the top five most frightening dental treatments (Oosterink et al., 2008). A study found that a notable portion of patients scored highly on various dental anxiety factors, while others scored moderately. Patients with higher education levels appeared to be less concerned about tooth extraction, and females exhibited greater fear of injections compared to males (Nair et al., 2009). Verbal information proved more effective than visual information in reducing anxiety among dental implant patients. It was found that spoken explanations and reassurances had a greater calming effect on their anxiety levels compared to visual aids (Sghaireen, 2020). On the other hand, several studies found that patients undergoing dental surgery for third molar extraction who watched an educational video about dental extraction experienced significantly reduced anxiety levels and improvements compared to those who did not receive any visual information. This highlights the effectiveness of preoperative educational videos in alleviating both mental and physical stress for patients (Toledano-Serrabona et al., 2020, Kazancioglu et al., 2015, Dereci et al., 2021). A study from Saudi Arabia focused on the effects of preoperative educational videos on dental fear and anxiety in patients undergoing simple extractions. A notable difference was found in the average dental fear and anxiety scores between the two groups after the extraction. Patients who watched the tooth extraction video reported feeling more comfortable after the procedure than those who received verbal information. The video group experienced considerable reductions in dental anxiety scores when comparing their preoperative scores to either their post-video information scores or their postoperative scores. Additionally, younger patients demonstrated higher levels of dental fear and anxiety than their older counterparts (Gazal et al., 2015). Considering the high anxiety levels in such patients, developing effective, evidence-based treatments is crucial for managing these debilitating conditions and alleviating some of the stress on dentists themselves (Appukuttan, 2016).

Aim

This study aims to Exploring the effect of educational video on level of anxiety in patients undergoing dental extraction.

Methodology

This is a randomized controlled trial that will be conducted in the dental clinics of the dental hospital- at Umm Al-Qura University (UQU), Makkah city. Approval of the study will be obtained from The Biomedical Research Ethics Committee at Umm Al-Qura University. Patients visiting dental clinics of dental teaching hospital at UQU for the purpose of tooth extraction will be recruited to participate in the study. Data collection will take place between December 2024 and February 2025. Informed consent will be obtained for each participant. Inclusion criteria: (1) male and female above 18 years of age. (2) patients undergoing simple dental extraction. Exclusion criteria: (1) pediatric patients. (2) patients with visual, hearing or mental disabilities. (3) patients can't understand Arabic or English language. (4) Patients undergoing procedures other than teeth extraction. (5) Patients undergoing surgical extraction.

Study Sample:

Eighty patients will be divided using simple randomization technique into two groups, control group and intervention group, with an allocation ratio 1:1. Each patient will draw a paper randomly from a group of papers that contain two options: (1) control group. (2) intervention group. In The control group, patients will be given standard verbal instructions regarding tooth extraction before the procedure. In the intervention Group patients will receive the same verbal instructions in addition to an educational video about dental extraction.

Instruments:

The video will demonstrate the method of extraction to the patient and will be one minute duration.

The anxiety level will be recorded twice for each patient: pre-operatively and after verbal instructions or watching the educational video. Two anxiety scales will be used:

(1) The shortened version of Dental Anxiety Inventory (SDAI).

It is composed of 9 questions. using a 5-point Likert scale (Stouthard et al., 1993). with total scores ranging from 9 to 45 points. The interpretation of SDAI scores is as follows:

- (1) 9 to 10 indicates minimal dental anxiety.
- (2) 11 to 19 suggests mild anxiety in specific situations.
- (3) 20 to 27 implies moderate anxiety with some self-control.
- (4) 28 to 36 indicates severe dental anxiety, making routine treatment more difficult.

(2) Visual Analogue Scale for dental anxiety (VAS) (Iuyk et al., 1988).

The patient will be asked to identify their level of anxiety, tagged at the endpoints with “no anxiety” (0) and “severe anxiety” (100).

Statistical analysis:

Data will be entered into excel and will be analyzed using SPSS software (version20). Descriptive statistics with paired and unpaired t-test will be used to assess differences between and within groups. The significance level will be set at $p = 0.05$.

Funding

This project will be self-funded

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