(RESEARCH ARTICLE)

The differences patient anxiety level based on age, sex, education level and extraction experience in tooth extraction treatment at dental hospital IIK Bhakti Wiyata

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Abstract

Background: Dental anxiety is a significant concern in dental practice, impacting both patients and dentists. Patients experiencing anxiety and fear often exhibit heightened stress levels, which can complicate treatment procedures and negatively impact the overall patient experience. This anxiety, in turn, creates a considerable source of stress for dentists. Managing anxious patients requires additional time, patience, and communication skills, potentially increasing the emotional and psychological burden on dental professionals.Tooth extraction is also the biggest cause of dental anxiety.

Purpose: This study aims to determine differences in patient anxiety levels based on gender, age, education level and experience of extraction using the Modified Dental Fear Survey (MDFS) method in tooth extraction treatment at RSGM IIK Bhakti Wiyata.

Methods: This study used an analytic observational design with a cross sectional approach. The population of this study were all patients who had their teeth extracted at RSGM IIK Bhakti Wiyata. The sample were all patients who had their teeth extracted at RSGM IIK Bhakti Wiyata who met the criteria. The level of anxiety in the sample was measured using the Modified Dental Fear Survey (MDFS) questionnaire prior to tooth extraction.

Results: There were differences in patient anxiety levels based on gender and extraction experience (P=0.00) and patient anxiety levels based on age (P=0.017) but there were no differences in patient anxiety levels based on education level in dental extraction treatment (P=0.122).

Conclusion: Gender plays a crucial role, with women typically experiencing higher anxiety levels compared to men. Interestingly, age and educational background did not significantly influence anxiety.

Keywords: Tooth extraction; Dental anxiety; Level of anxiety; Modified Dental Fear Survey

1. Introduction

A significant portion of the Indonesian population faces oral health challenges. The results of the National Basic Health Research (RISKESDAS) in 2018 indicated that 57.6% of the Indonesian population experienced dental and oral

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problems in the past 12 months (potential demand). Among them, 10.2% received care and treatment from healthcare professionals, while 89.8% did not receive any treatment [1]. In the field of dentistry, one of the treatments is tooth extraction [2]. Tooth extraction is the most common procedure performed by dentists. Tooth extraction is an act of removing a tooth from its alveolar bone socket [3]. Tooth extraction is also the highest cause of dental anxiety [4]. Patients with high levels of dental anxiety often avoid anything related to teeth. This is the reason why the prevalence of dental anxiety is categorized as high [5]. The prevalence of dental anxiety worldwide ranges from 6-15% and in Indonesia reaches 22% [6].

There are several methods used to measure dental anxiety and fear, but the most commonly used is the Dental Fear Survey (DFS) [2]. In this study, the researchers used a modified version of the Dental Fear Survey (DFS) adapted for the specific research. Several factors can influence dental anxiety, including gender, age, education level, and extraction experience. Based on the background above, the author is interested in determining the differences in anxiety levels of patients based on gender, age, education level, and extraction experience using the Modified Dental Fear Survey (MDFS) in tooth extraction treatment at RSGM (Dental Hospital) IIK Bhakti Wiyata.

2. Material and methods

2.1. Research Methods

This study use an analytical observational design with a cross-sectional approach. The study population comprised all patients undergoing tooth extraction at RSGM IIK Bhakti Wiyata. The study sample consisted of all patients undergoing tooth extraction at RSGM IIK Bhakti Wiyata who met the inclusion criteria. The inclusion criteria for this study were patients with indications for tooth extraction, patients who were willing to participate in the study, and patients who were cooperative. The exclusion criteria were patients with systemic diseases that precluded tooth extraction. Consecutive sampling was used, along with the Lemeshow formula, resulting in a sample size of 67 respondents. Anxiety levels in the sample were measured using the Modified Dental Fear Survey (MDFS) questionnaire prior to the tooth extraction procedure.

2.1.1. Materials and Equipment

The materials and equipment employed in this study included an informed consent form, which was provided to participants to ascertain their willingness to complete the questionnaire. Additionally, a modified version of the Dental Fear Survey (MDFS), adapted from the original Dental Fear Survey (DFS) to suit the specific aims of this research, was utilized. Writing instruments were also provided for participants to record their responses.

2.2. Research procedure

Prior to data collection, participants were provided with a detailed explanation of the study's objectives. An informed consent form was then presented to participants, which outlined the study's procedures and assured them of the confidentiality of their responses. Following this, participants were asked to complete the Modified Dental Fear Survey (MDFS), a modified version of the Dental Fear Survey (DFS) designed to assess dental anxiety. The MDFS was administered prior to the dental extraction procedure and consisted of a five-point Likert scale ranging from 'not at all anxious' (score 1) to 'extremely anxious' (score 5). Based on the total score obtained, participants were categorized into three levels of dental anxiety: low (17-40), moderate (41-63), and high (>64). Upon completion of data collection, the data were subjected to rigorous analysis.The research data obtained was analyzed using Statistical Product and Service Solutions (SPSS). Data analysis in this study used comparative tests in the form of the Mann Whitney test and the Kruskall Wallis test. The Mann Whitney test was carried out to determine differences in anxiety levels during tooth extraction treatment based on gender and extraction experience. The Kruskall Wallis test was carried out to determine differences in anxiety levels regarding tooth extraction treatment based on age and level of education

3. Results and discussion

This research, which aims to determine differences in patient anxiety levels based on gender, age, education level and extraction experience using the Modified Dental Fear Survey (MDFS) method in tooth extraction treatment carried out at RSGM IIK Bhakti Wiyata in March-April 2023.

Table 1 Frequency distribution of anxiety levels of patients undergoing tooth extraction at RSGM IIK Bhakti Wiyata

Anxiety Levels	Frequency	Percentage %
High	43	64.2
Moderate	22	32.8
Low	2	3
Total	67	100

Table 1 shows that the majority of patients who underwent tooth extraction at RSGM IIK Bhakti Wiyata had a low level of anxiety, namely 43 patients (64.2%). Apart from that, the remainder had a low level of anxiety with 22 patients (32.8%) and a high level of anxiety with 2 patients (3%). This is in line with previous research conducted at RSGM Indonesian Muslim University, namely that the majority of respondents had low levels of anxiety [5].

Table 2 SPSS result about dental anxiety level based on gender, experience during tooth extraction, age and level education

Mann Whitney Test	N	Sig.
Patient anxiety levels based on gender during dental extraction treatment	67	0.000
Patient anxiety level based on extraction experience during tooth extraction treatment	67	0.000
Kruskall Wallis Test	N	Sig.
Patient anxiety levels based on age during tooth extraction treatment	67	0.017
The patient's anxiety level is based on the level of education regarding tooth extraction treatment	67	0.122

In research conducted at RSGM IIK Bhakti Wiyata, it was discovered that the anxiety level of male patients was lower than the anxiety level of female patients with a p= 0.000 (table 2). The results of this research are in line with the research of Bachri, et.al. (2017) which shows that the average anxiety level of men is lower than women [2]. In addition, the results of this study are also supported by previous research conducted at the Bahu Community Health Center, Malalayang District, Manado City, namely that female respondents had a higher level of anxiety. higher compared to male respondents. Women tend to have a higher level of anxiety than men because women are physically weaker, which makes women respond excessively to things that are considered dangerous [7]. Meanwhile, men generally have a stronger mentality towards various things that are considered dangerous and threatening to themselves compared to female [8]

The difference in patient anxiety levels based on age using the Modified Dental Fear Survey (MDFS) method for tooth extraction treatment carried out at RSGM IIK Bhakti Wiyata shows that there is no significant difference between patient anxiety levels based on age and those in the early adolescent category (12-16 years). , late adolescents (17-25 years), early adults (26-35 years), late adults (36-45 years), early elderly (46-55 years), late elderly (56-65 years) and seniors (>65 years) with p= 0.017 (table 2). The results of this study are in line with research conducted at Isfahan University of Medical Sciences which found that there was no significant difference between patient anxiety levels based on age. In this research conducted at a university in Iran, the youngest respondent was 18 years old and the average age was 36-45 years. Therefore, the researcher believes that it is reasonable if the age group does not show any significant differences [9].

In general, a person's level of education influences the anxiety they experience. When someone has a high level of education, that person also has a high level of awareness and understanding of the stimulus. This is in accordance with research by Bachri, et.al. (2017) which shows that there is a significant difference between patient anxiety levels based on education level [2]. This is also in accordance with Siagian's (2000) opinion, namely that when someone has a high level of education, the higher their hopes and desires, so that patients who have a higher level of education high tend to be more critical and sensitive to situations they experience, such as dental care. Meanwhile, patients who have a low level of education are usually more resigned when it comes to dental treatment [10]. Although it is generally known that the anxiety level of patients who have a low level of education is higher than patients with a high level of education, based on the results of the Kruskall Wallis test in research conducted in RSGM IIK Bhakti Wiyata with p= 0.122 (table 2) which means that there is no significant difference between the patient's anxiety level based on level of education in

the categories of no school, primary education (elementary school and junior high school), secondary education (Senior High School/ Vocational School) and higher education (diploma, bachelor, master and doctor) in dental extraction treatment. This research is in line with research conducted at Isfahan University of Medical Sciences which found that there was no significant difference between patient anxiety levels based on education level [9].

The extraction experience is one of the things that influences the patient's anxiety level. From the results of research conducted at RSGM IIK Bhakti Wiyata, it was found that there was a significant difference between the patient's anxiety level based on the experience of extraction, namely having and never having had an extraction with p = 0.000 (table 2). This is in accordance with the statement by Hmud and Walsh (2009) that patients who have extraction experience or have had tooth extraction have knowledge and information about tooth extraction procedures so that patients feel more calm and cooperative in undergoing dental treatment procedures. On the other hand, patients who have no extraction experience or have never had a tooth extracted will feel more anxious due to a lack of knowledge and information about dental care procedures [11].

The level of anxiety in carrying out dental treatment is not only influenced by gender, age, education level and extraction experience, but can also be influenced by socio-economic status factors. People with low socioeconomic status tend to be more anxious about dental care than people with middle to upper economic status. This is because dental care is considered less common for people with low economic conditions [11]. Apart from that, communication between dentists and patients also influences the patient's level of anxiety in carrying out dental care. When the dentist and patient have good communication, it can build a sense of trust between the two so that this can reduce the anxiety level of patients who will undergo dental treatment. Dentists must not only have a communicative attitude, but also have a confident and calm attitude when dealing with patients because this can also affect the patient's anxiety level [2].

4. Conclusion

At RSGM IIK Bhakti Wiyata, this study examined what factors contribute to patient anxiety during tooth extractions. Its revealed that gender plays a crucial role, with women typically experiencing higher anxiety levels compared to men. Interestingly, age and educational background did not significantly influence anxiety. However, the study highlighted that patients with previous tooth extraction experiences tended to exhibit different levels of anxiety compared to those without.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors of this manuscript do not have any financial or personal conflicts of interest.

Statement of ethical approval

The study received ethical approval by Health Research Ethics Commission of the Faculty of Dentistry, Bhakti Wiyata Institute of Health Sciences, Kediri 163/FKG/EP/II/2023

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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