

## **Young Adults' Perceptions of Dental Procedures**

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### **Abstract**

*Information about young adults' perceptions of dental procedures is needed. This study investigated factors related to fear of three common dental procedures: drilling, getting a shot, and getting one's teeth cleaned. Four hundred and seventy-six college students completed a survey assessing dental fears. Most of the participants (73%) were fearful of dental visits in general. Of the three dental procedures, participants were most fearful of drilling. Participants reporting they were more afraid of going to the dentist also reported higher levels of fear for the specific dental procedures. Further, females reported greater fear for all of the procedures compared to males. Findings suggest that having a fearful attitude about going to the dentist may increase fear of specific procedures. Future research should examine relations among dental fears and observable behaviors during dental procedures.*

A person's fear of the dentist can influence his or her satisfaction with the dental visit and in turn, the patient's regularity of seeing the dentist (1). Dental fear and the resulting avoidance of the dentist can have serious consequences for oral health (2). With an estimated 35 million Americans suffering from dental fear (3), it is important to investigate factors related to this fear. While the preponderance of the literature is based on adults' and children's dental habits and fears (4-5), less is known about the dental practices of college-age students. Thus, the focus of this study was to examine the specific fears of college students.

Persons who have a general impression that going to the dentist is a fear-provoking experience may view specific procedures, such as getting a shot or drilling, with more fear than persons reporting lower general fears of going to the dentist (6). Results of several research studies have demonstrated that persons of all ages report being "afraid" of going to the dentist (3, 5). Additionally, research has shown that many are afraid of specific dental procedures including the site of an anesthetic needle, the feeling of an injection, and the sight, sound, and feeling of a drill (3). Studies investigating fears of different dental procedures are needed to determine whether general fears are related to fears of specific dental experiences. One aim for the current study was to investigate the relationship between reports of fear of the dentist and impressions of fear related to specific dental procedures, including getting one's teeth cleaned, drilling, and getting a shot.

Gender also is related to dental fear. Among adults, the preponderance of research studies has indicated that females have higher dental fear than males (4, 7). However, one study found that adult males expressed higher levels of dental fear than adult females (3). Thus, this remains an area for investigation. Other researchers (8) investigated dental fear in a population of 20-year-olds and found that females were more likely to endorse multiple dental fears than males. These researchers examined multiple fears as an aggregate variable as opposed to examining each fear separately. The current study extends their research by investigating undergraduates' perceptions of fear when undergoing three dental procedures: drilling, getting a shot, and getting one's teeth cleaned.

Three hypotheses guided the current study. First, it was hypothesized that gender would be related to respondents' ratings about fear of drilling, fear of cleaning, and getting shots at the dentist's office. Specifically, it was expected that females would report higher levels of fear for both procedures compared to males.

Second, it was hypothesized that undergraduates who reported being more fearful of dental visits in general would report greater fear of the specific dental procedures. Third, gender was expected to moderate the relationship between general and specific fears, such that females would be more likely than males to report higher levels of dental fear, which would be related to higher fears of specific procedures.

## Method

### Participants

Participants were recruited from a university in the Midwest. Two hundred and twenty-eight females and 248 males between the ages of 18 and 27 years ( $M = 18$  years, 9 months,  $SD = 1$  year) participated. Eighty-six percent of participants were Caucasian, 9% were African American, and 4% reported “other” for their ethnicity. Fifty percent were enrolled in the college of Arts and Sciences, 20% were enrolled in the college of Business and 13% were in Education. Seventy percent reported their parents were “married,” while 22% said their parents were “divorced” and 8% said their parents were “single,” “separated,” or “widowed.” Ninety-five percent of participants reported having siblings. Only 5% of participants indicated that their family income was “low.” Consent was required and students received credit in psychology classes for their participation. The study was approved by a university-based institutional review board.

### Procedures

Participants completed questions on a paper and pencil survey developed for a project assessing young adults’ perceptions of their medical and dental care (9). Several questions addressed demographic information, such as age, parents’ marital status, and family income level. Another set of questions assessed participants’ reports of frequency of dental visits, fear of going to the dentist, and fear of different dental procedures. Participants rated their level of fear of shots, drilling, and cleaning on 6-point Likert scales from “no fear” to the “highest fear possible.” Participants also answered other questions about who accompanied them to the dentist, “yes” or “no” questions about whether they were afraid to go to the dentist, and a question about whether they visited their dentist on a regular basis.

### Results

Sixty-six percent of the college students indicated that they went “alone” to see the dentist, 26% went with a parent, and 8% went with another family member or with a friend. Most (73%) reported that they were afraid of going to the dentist. Three linear regression models were used to examine the relationship between gender, age, and reports of fear of the dentist and the outcome variables (fear of getting teeth cleaned, drilling, and shots). Table I presents the Beta coefficients, standard errors,  $t$  scores, and  $p$  values for the three regression models.

**Table I: Regression Models for College Students**

Dependent Variable	Predictor	Beta	Standard Error	$t$	$p$
Cleaning	Gender	.388	.235	2.905	.004
	Age	-.017	.039	-.379	.705
	Fear of Dentist	-.021	.264	-.087	.93
	Gender X Fear of Dentist	-.344	.174	-1.959	.05
Drilling	Gender	.248	.385	2.351	.019
	Age	.043	.064	1.229	.220
	Fear of Dentist	-.497	.433	-4.691	.001
	Gender X Fear of Dentist	-.204	.286	-1.469	.143
Shots	Gender	.333	.423	2.904	.004
	Age	-.051	.070	-1.338	.182
	Fear of Dentist	-.343	.475	-2.984	.003
	Gender X Fear of Dentist	-.278	.313	-1.85	.065

*Fear of Cleaning.* Sixty-nine percent of the participants reported no fear of cleaning, 27% reported very little or little fear, 2% reported some fear, 2% reported high fear, and none of the participants endorsed the highest level of fear. The regression model for fear of getting one's teeth cleaned was significant,  $F(4, 471) = 13.57, p < .001$ , and predicted 10% of the variance in the dependent variable (see Table I). Results indicated that females reported higher levels of fear for getting their teeth cleaned compared to males. The interaction of gender and fear of the dentist also was significant. A follow-up regression model showed that females who indicated having higher levels of fear about going to the dentist reported relatively higher levels of fear of getting their teeth cleaned compared to males who reported higher levels of fear about going to the dentist,  $F(1, 343) = 11.19, p < .001$ , Beta = .178, Standard Error = .104,  $t = 3.35$ ).

*Fear of Drilling.* Thirty-six percent of the participants indicated no fear of drilling, 17% endorsed very low or a little fear, and 22%, 13%, and 12% reported some, high, and a very high level of fear of drilling. The final regression model showed that the predictors accounted for 44% of the variance in the dependent variable,  $F(4, 471) = 92.19, p < .001$ . Gender and fear of the dentist were significant predictors. Females reported higher levels of fear of drilling compared to males and those participants reporting higher levels of fear about going to the dentist were apt to report higher levels of fear of drilling (see Table I).

*Fear of Shots.* Forty-three percent of the college students were not afraid of getting a shot, 17% reported very low or low fear, 16% reported some fear, 13% indicated high fear, and 11% reported the highest possible level of fear. The final regression model was significant,  $F(4, 471) = 60.46, p < .001$  and the model predicted 34% of the variance in the dependent variable. Gender and fear of the dentist were significant predictors (see Table I). Females reported higher levels of dental fear than males. Students who were fearful of going to the dentist's office were apt to report higher levels of fear of when getting a shot than those reporting lower levels of fear of the dentist. There was a trend ( $p = .065$ ) for the interaction of gender and fear of the dentist. A follow-up regression model indicated that when reporting fear of going to the dentist, females tended to report higher levels of fear of shots compared to males,  $F(1, 343) = 13.53, p < .001$  (Beta = -1.95, Standard Error = .187,  $t = 3.68$ ).

## Discussion

Results of the current study demonstrated that college-age students indicated fears about going to the dentist that were consistent with those reported in other studies investigating dental fears in adults (3). As expected, young adults reporting higher general fear of going to the dentist reported higher levels of fear for three specific procedures – having one's teeth cleaned, getting a shot, and needing to undergo drilling. Thus, having a negative appraisal of going to a dental visit may heighten stress related to undergoing dental procedures. In addition, consistent with other studies (4, 8), findings suggested that females reported higher levels of fears of different dental procedures than males did. Age was not related to fears for specific procedures. This was not surprising, given that the age range for this study was restricted to college-age adults.

Surprisingly, the interaction of gender and reports of fear of dental visits did not consistently predict fears of the different dental procedures. Gender did moderate the relationship between fear of the dentist and fear of getting one's teeth cleaned and there was a trend for this interaction for getting shots. In both cases, females who reported high levels of fear for dental visits were more fearful of the procedures than males reporting high levels of fear for dental visits. This supports literature demonstrating that females may report higher levels of fear for medical procedures performed by physicians compared to males (10) and extends these findings in a new area. It may also be the case that females are at greater risk for experiencing fear, but not for avoidance behaviors that would negatively impact their oral health care. This may occur because it is more socially acceptable for females to report fear (11). However, on the other hand, gender did not interact with reports of general dental fear to influence reports of fear of drilling. It may be that drilling is the most stressful dental experience, eliciting high levels of fear from both males and females.

Several factors limit the generalizability of findings for this study. For example, participants were limited to college-students, and results may have been different if young adults who did not attend college, or who were from low-income families, were recruited. In addition, a self-report measure was used to analyze dental fear, and therefore participants may have underreported fear levels due to a social desirability bias. Further, females are typically more likely to endorse fear in self-report measures than males (11); thus, the questions utilized in this study might not have accurately captured men's fear.

Therefore, it may be advantageous to use behavioral observations in conjunction with self-report measures in order to gain a clearer understanding of men's dental fears. Finally, no objective measure of general anxiety was utilized in the study. Assessing participants' views of their general levels of anxiety using a measure such as the State-Trait Anxiety Inventory (12) and their anxiety during specific dental procedures would help clarify results gleaned from this study.

Future research should examine other factors related to adults' perceptions of dental fear that may impact fear of specific procedures. One factor to consider is the participant's history of painful dental experiences, as previous research has documented an association between these experiences and fear of the dentist (13). Because there is an association between negative past experiences and fear, this relationship could affect findings. Further, because research has shown that highly fearful dental patients expect to experience more pain than they actually do (14), future research should clarify the relationship.

This study highlighted the fact that gender is related to both general dental fear and fear of specific dental procedures. Specifically, college-aged women were more fearful of going to the dentist and were more fearful of having their teeth cleaned and getting a shot at the dentist than were college-aged men. Because fear of drilling was not moderated by gender, it is believed that this experience could be highly fearful for both men and women. Results of this study indicate that perhaps college-aged women would benefit from relaxation or some other intervention before visiting the dentist in order to alleviate their dental fear. A next step in this area of research would be to inquire about what would help decrease dental fear for college-aged women.

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