Patient Fear, Myth , Knowledge and Awareness about Dental Treatment:A Cross-sectional Survey Study

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Abstract

Background: Dental anxiety and cultural myths significantly impede oral health maintenance and treatment compliance. Understanding the prevalence of these factors is crucial for improving clinical outcomes.

Objective: This study aimed to assess the levels of dental fear, identify common misconceptions, and evaluate the relationship between past dental visits and anxiety.

Methods: A cross-sectional survey was conducted among 150 participants using a structured questionnaire. Data on dental visitation, fear triggers, and oral health myths were collected. Statistical analysis was performed using Chi-square tests ($p < 0.05$).

Results: The majority of participants (92.7%) had previously visited a dentist. Bad past experiences were the primary reason for fear in 50.0% of respondents. Tooth extractions were identified as the most anxiety-inducing procedure by 58.0% of the sample. A significant myth regarding dental scaling ("scrapes and chips away tooth enamel") was believed by 71.3% of participants. Chi-square analysis revealed a significant association between dental visitation and the level of fear regarding future treatment (\chi^2 = 18.83, p = 0.0003), as well as between visitation and beliefs about scaling myths (\chi^2 = 7.86, p = 0.049). Conclusion: High levels of dental anxiety and deep-seated myths persist despite clinical exposure. Targeted patient education is necessary to dispel misconceptions and manage fear effectively.

Keywords: Dental Anxiety; Oral Health Myths; Scaling; Patient Education; Dental Fear.

Introduction

Dental anxiety is a global challenge that affects patient attendance and oral health status [1, 2]. It is defined as a state of apprehension or dread in anticipation of dental treatment, often leading to the avoidance of necessary care [3, 4]. Research indicates that fear levels vary significantly across different demographics, influenced by age, gender, and education[7, 10] Age: Different age groups experience varying levels of anxiety. Gender: Fear levels often differ between men and women. Education: A patient's educational background can influence their

perception of dental procedures. . In many cases, this anxiety is exacerbated by physiological triggers such as the sound of the dental drill or the sensation of local anesthesia injections [5, 6, 9]

Beyond psychological barriers, cultural myths and misconceptions play a detrimental role in oral health behavior [11, 12, 13]. The Power of Cultural Myths: Beyond individual psychology, the paper argues that deep-seated cultural misconceptions are "detrimental" to oral health behavior . In various populations, especially in rural and developing regions, beliefs regarding the harmful effects of professional cleaning (scaling) or the necessity of tooth extraction over restorative treatments remain prevalent [14, 17, 19].

These misconceptions often result in delayed treatment seeking, leading to advanced periodontal disease and tooth loss [18, 20]. This study explores these themes by analyzing patient responses to identify the intersection of anxiety and misinformation.This study concludes its introduction by stating its goal is to analyze the intersection of these two areas anxiety and misinformation to understand how they influence patient responses.

Materials and Methods

A cross-sectional study was performed involving 150 individuals. Data were collected using a validated questionnaire covering three domains: demographic/visitation history, dental fear/anxiety triggers, and dental myths. Anxiety was assessed through questions regarding future treatment feelings, specific procedural fears (e.g., extractions, root canals), and physical sensations (vibration, pressure). Myths were evaluated through multiple-choice questions regarding toothbrushing, scaling, and tooth sensitivity.

Statistical analysis was conducted using Python (Pandas and SciPy libraries). Descriptive statistics provided frequencies and percentages. Chi-square tests were employed to determine associations between categorical variables, specifically comparing those who had visited a dentist versus those who had not, in relation to their fear levels and belief in myths. The significance level was set at $p < 0.05$.

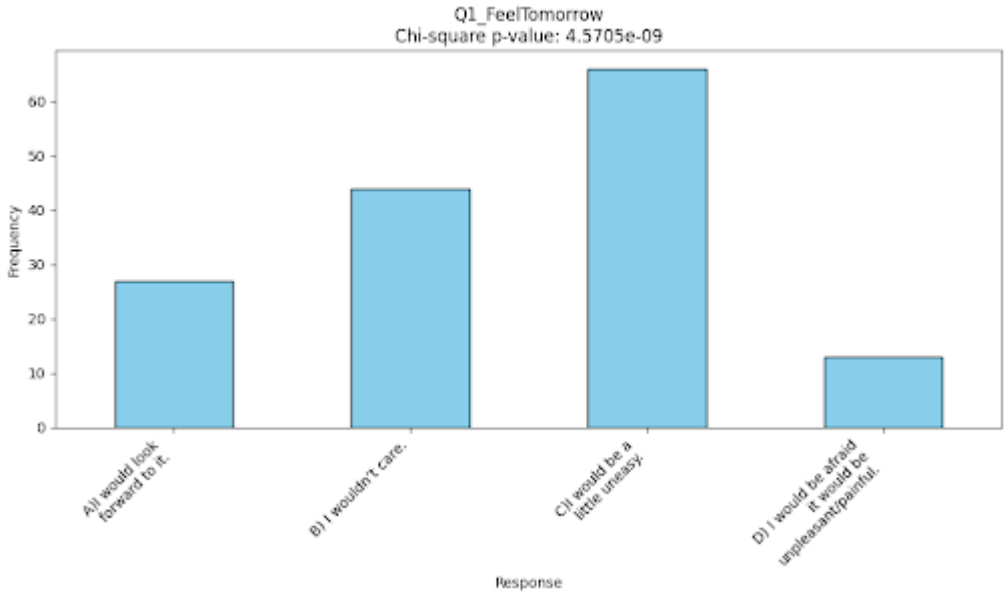


Figure 1

(p = 0.0003) Significant

This anxiety level is strongly influenced by whether the individual has a history of visiting the dentist.

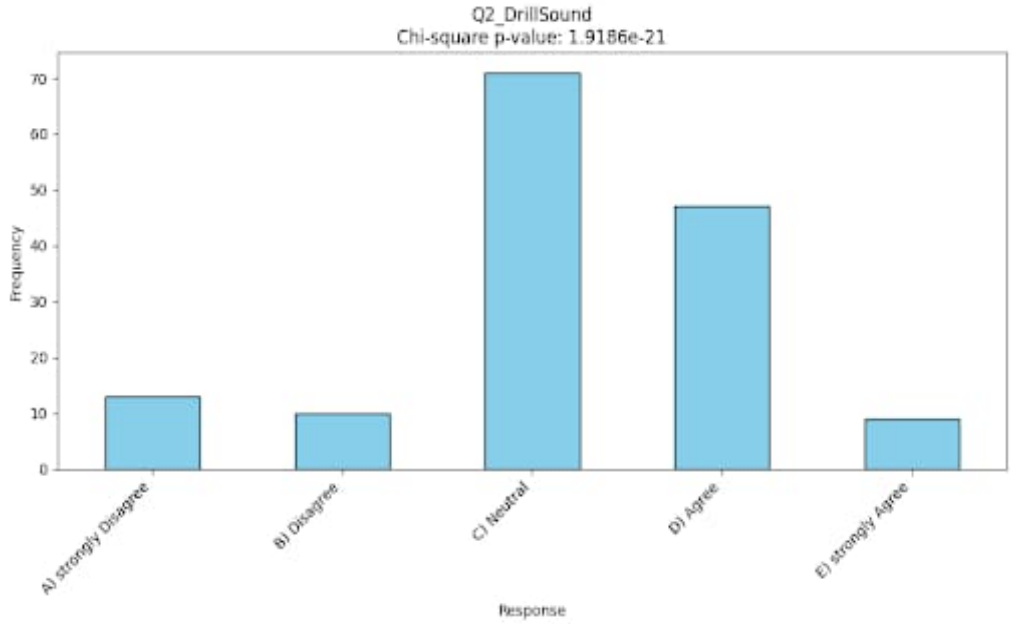


Figure 2

(p = 0.4554) Not Significant

The sound of the drill is a near-universal trigger for discomfort across all respondents. This fear is a consistent psychological trait in the population, regardless of prior dental experience.

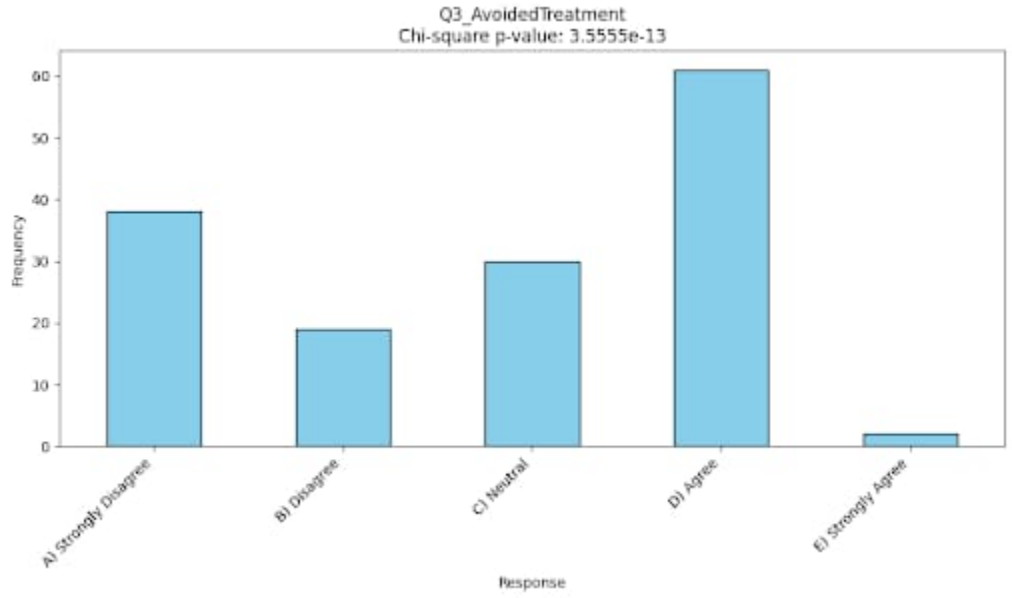


Figure 3

(p = 0.0718)Not Significant

A significant majority of the group admits to delaying care due to fear, showing that anxiety directly affects health behavior. However, this tendency to avoid care does not differ significantly between those who have and haven't visited a dentist.

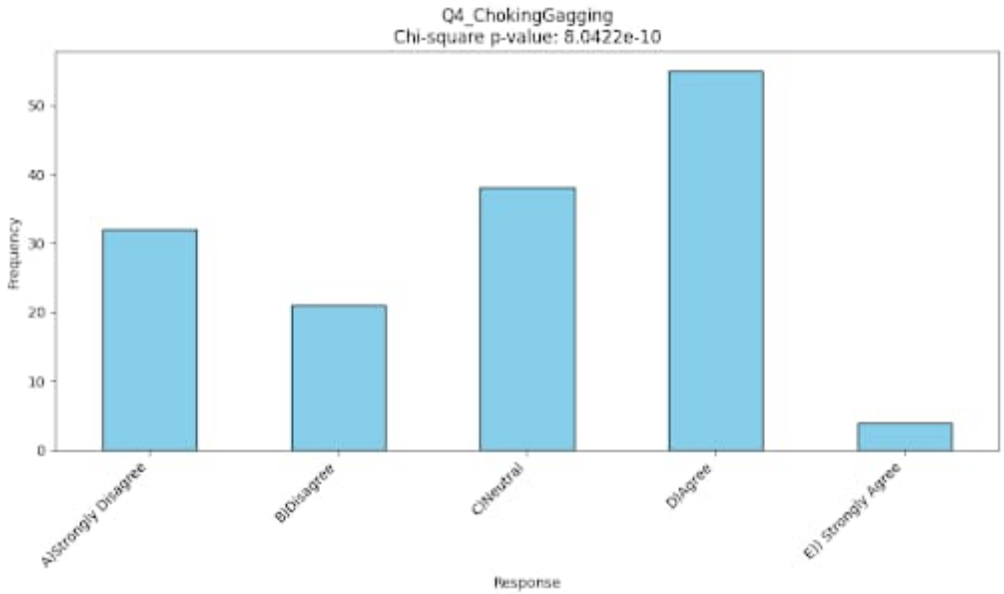


Figure 4

(p = 0.1396)Not Significant

Choking or gagging is a specific, significant source of stress for many participants during procedures. This fear appears to be a personal sensory concern that is not significantly linked to dental visit history.

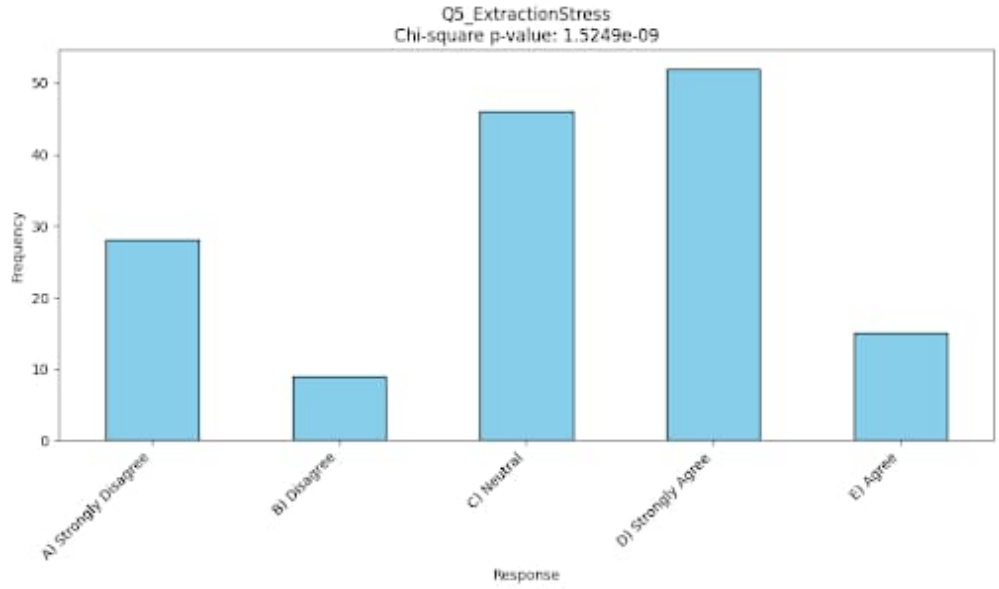


Figure 5

(p = 0.0056) Significant

Tooth extraction is viewed as a peak stressor, with a clear majority expressing significant stress. Interestingly, the level of this stress is significantly associated with the participant's prior dental experience.

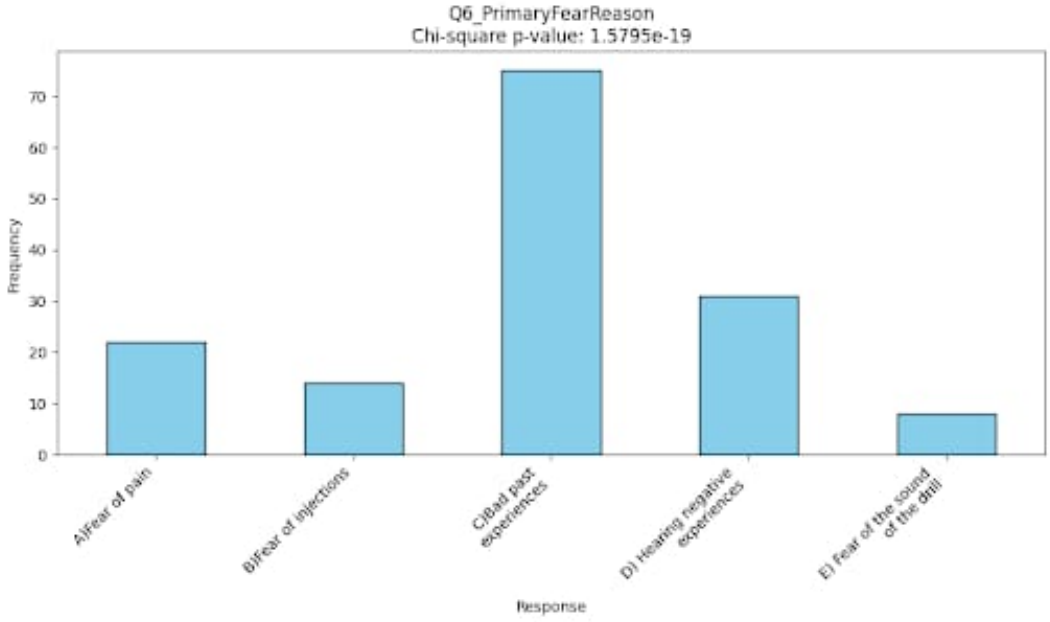
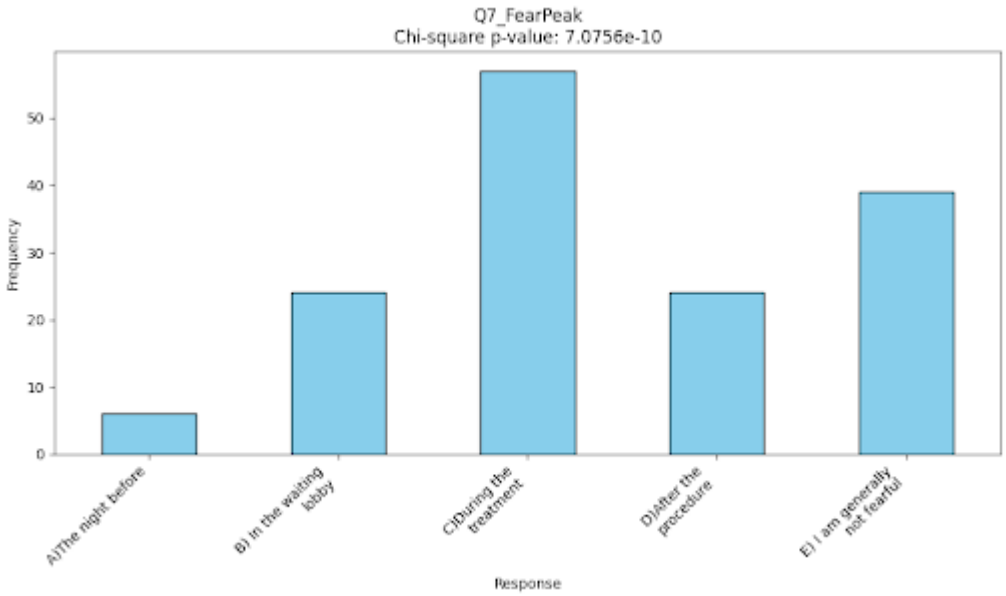


Figure 6

(p = 0.0019) Significant

Fear of pain and hearing negative stories are the primary causes of dental phobia. The specific reason for fear is significantly linked to whether a person has actually visited a dentist.

Figure 7



(p = 0.0172) Significant

Fear of pain and hearing negative stories are the primary causes of dental phobia. The specific reason for fear is significantly linked to whether a person has actually visited a dentist.

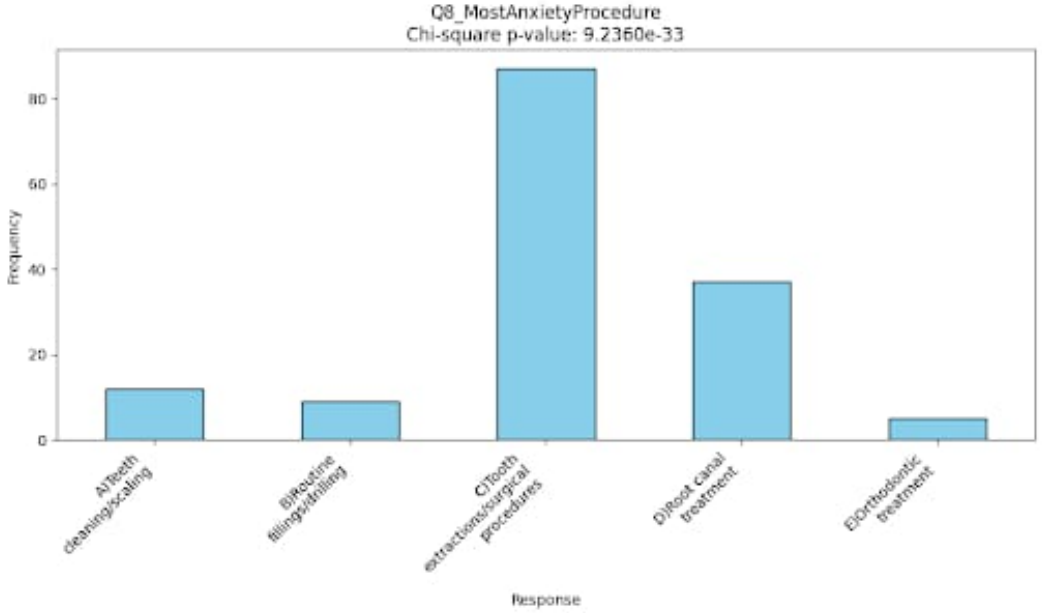


Figure 8

(p = 0.6717)Not Significant

Surgical procedures and extractions are overwhelmingly voted as the most anxiety-inducing tasks. This ranking is a common consensus and does not depend on past dental experience.

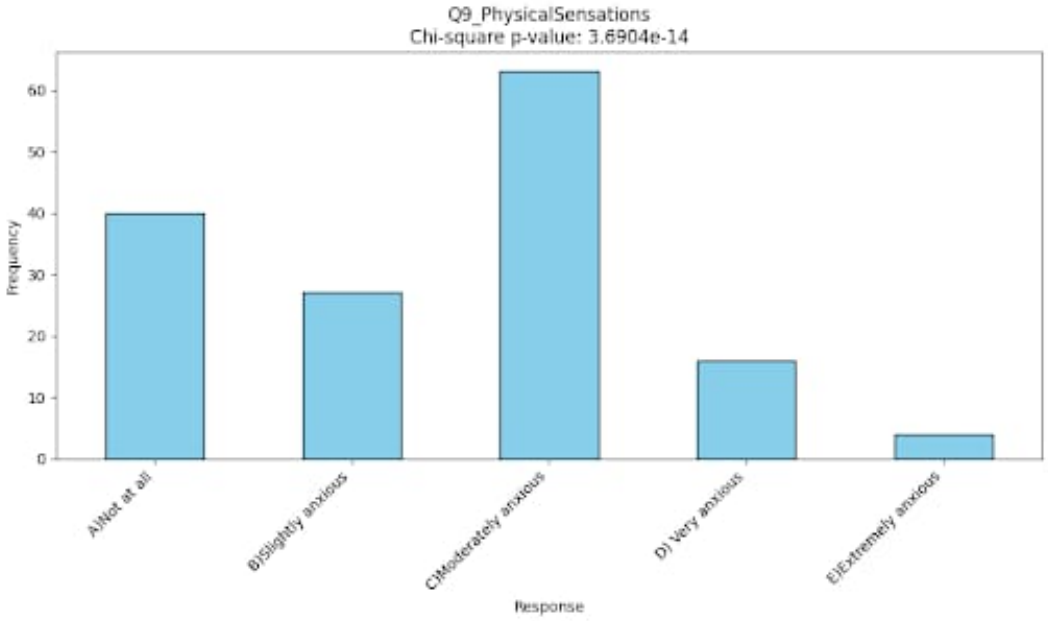


Figure 9

(p = 0.0389) Significant

Sensations like vibration and pressure cause anxiety even without pain, acting as a major psychological trigger. Sensitivity to these sensations differs significantly between those who visit the dentist and those who don't.

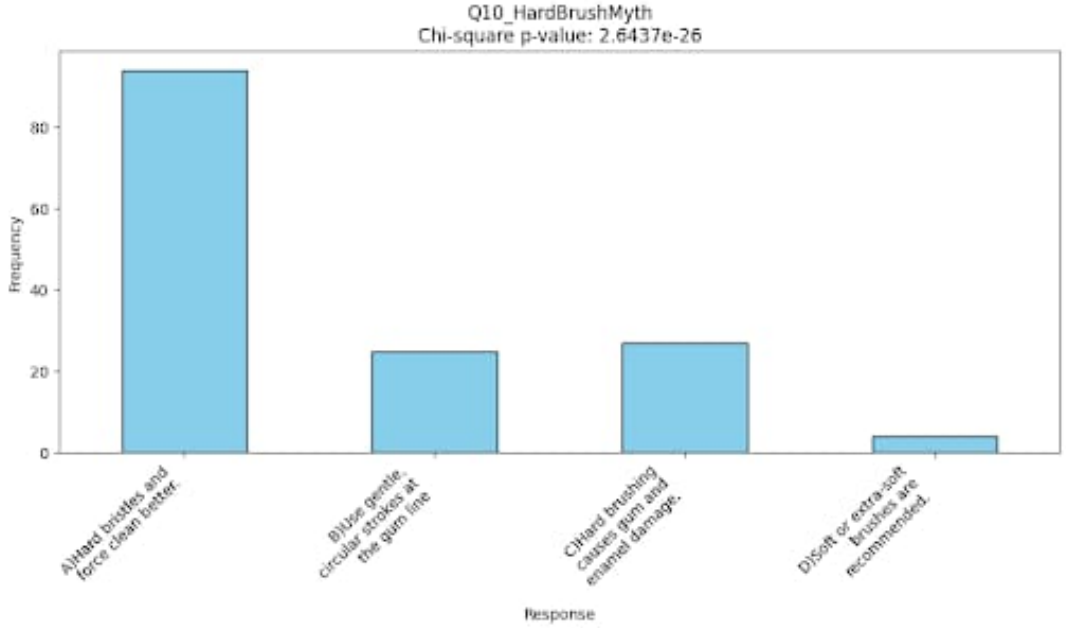


Figure 10

(p = 0.7305)Not Significant

There is broad awareness that hard brushing is harmful rather than helpful. This correct health belief is uniform across the sample group.

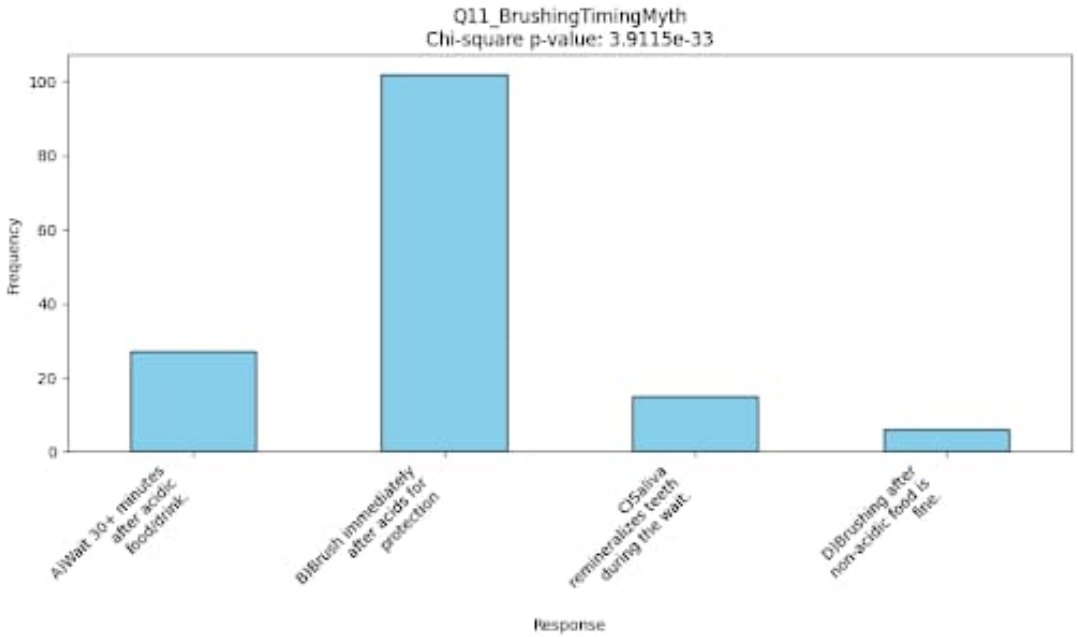


Figure 11

(p = 0.0003) Significant

Many respondents believe the myth that you should brush immediately after acids. This misconception is significantly more prevalent in certain groups based on their dental visit history.

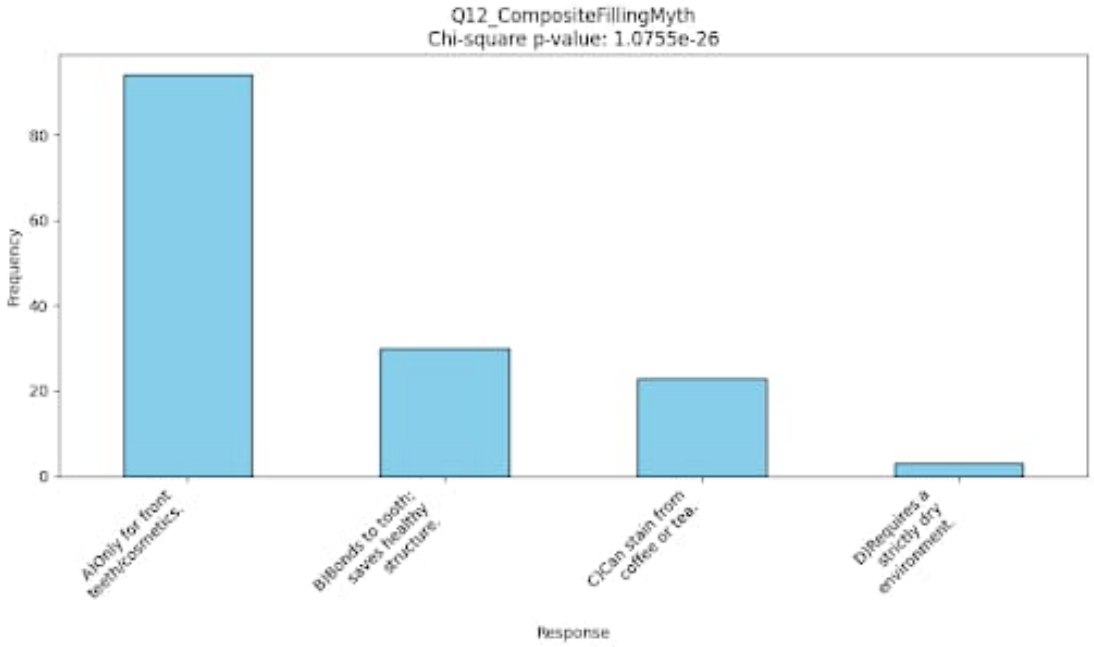


Figure 12

(p = 0.1413) Not Significant

Respondents generally understand the staining risks and cosmetic uses of white fillings. This knowledge is consistent regardless of their history with dental professionals.

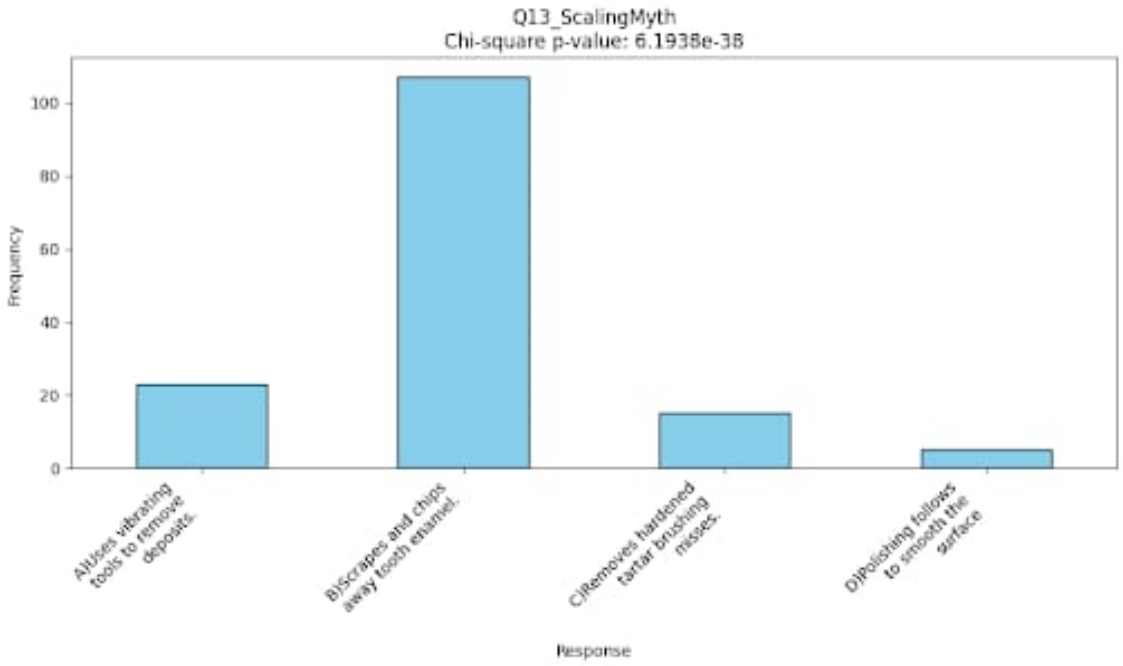


Figure 13

(p = 0.0490) Significant

A strong belief exists that scaling "scrapes away" enamel, showing a common gap in dental education. This myth is significantly associated with whether a person has had professional cleanings.

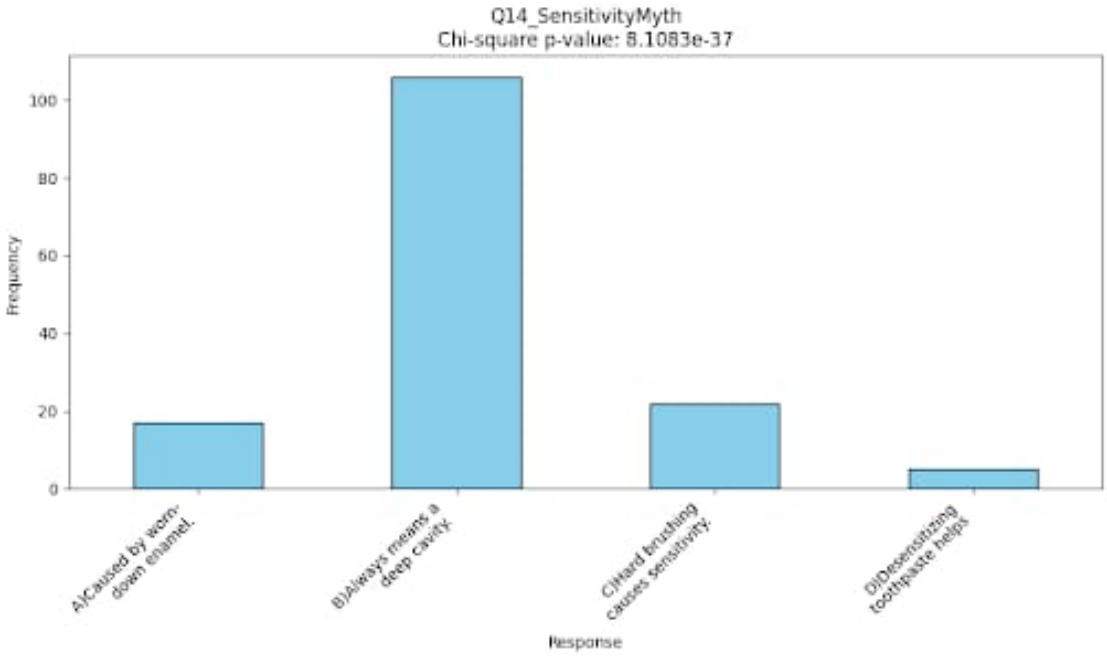


Figure 14

(P = 0.5303)Not Significant

Most participants correctly identify that sensitivity is not always caused by a cavity. This dental literacy is common across all participants.

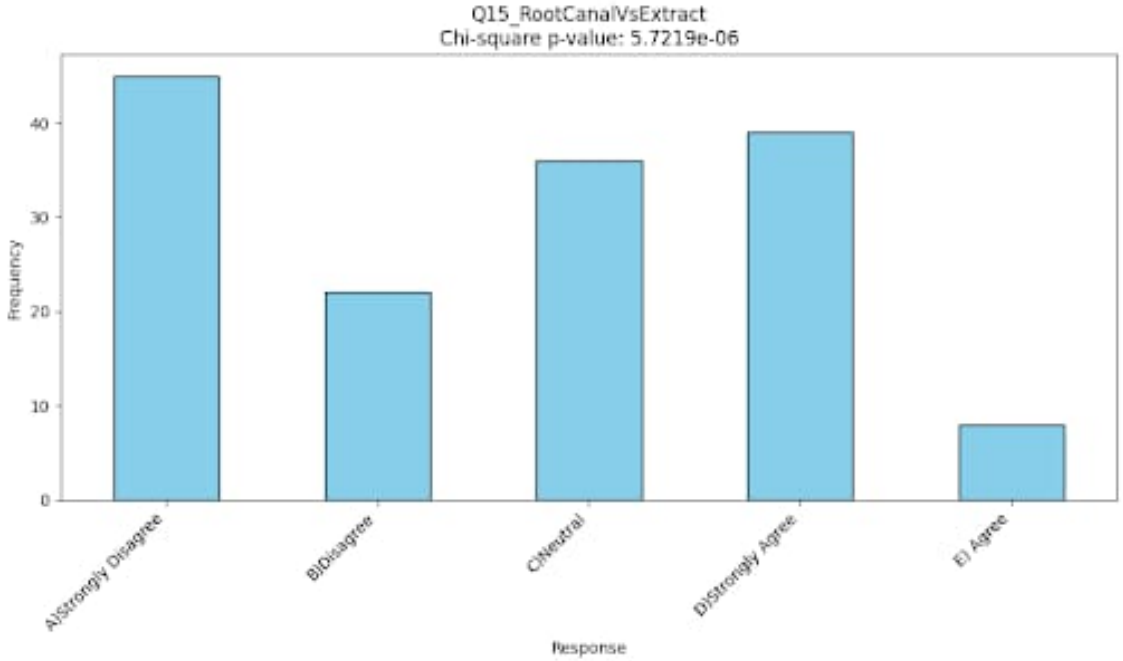


Figure15

(p = 0.9417)Not Significant

There is a clear preference for saving natural teeth over pulling them. This preference for tooth preservation is a consensus among all respondents.

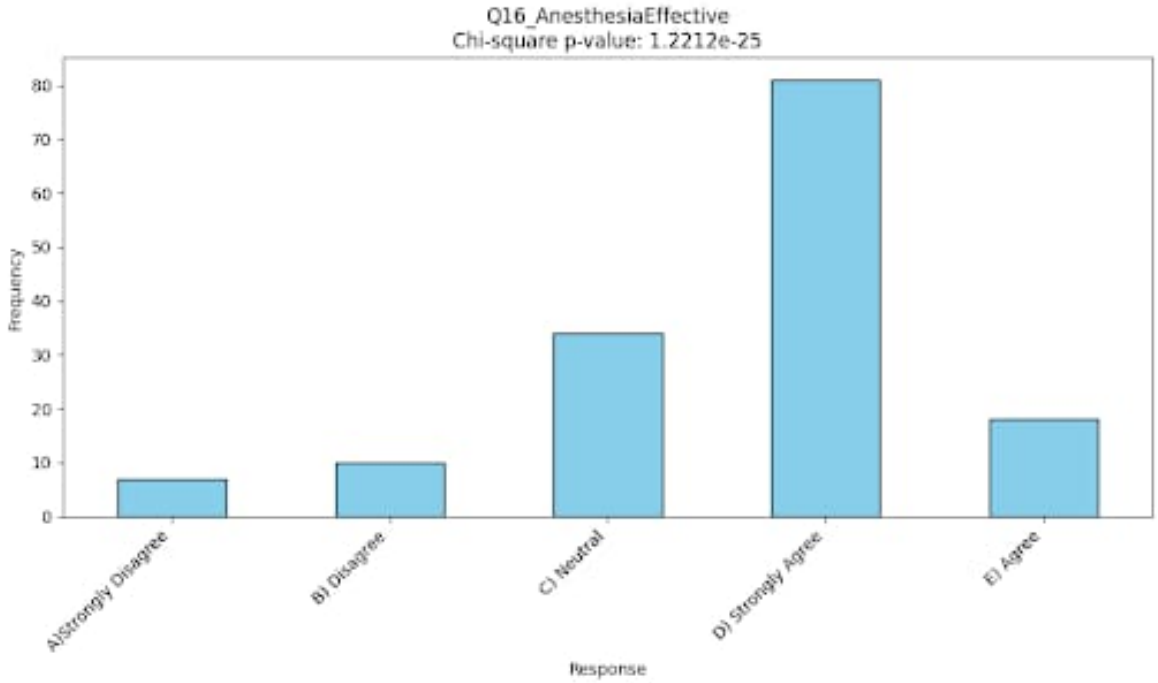


Figure 16

(p = 0.0816)Not Significant

Trust in local anesthesia to prevent pain is very high. This positive expectation for pain management is consistent regardless of prior experience.

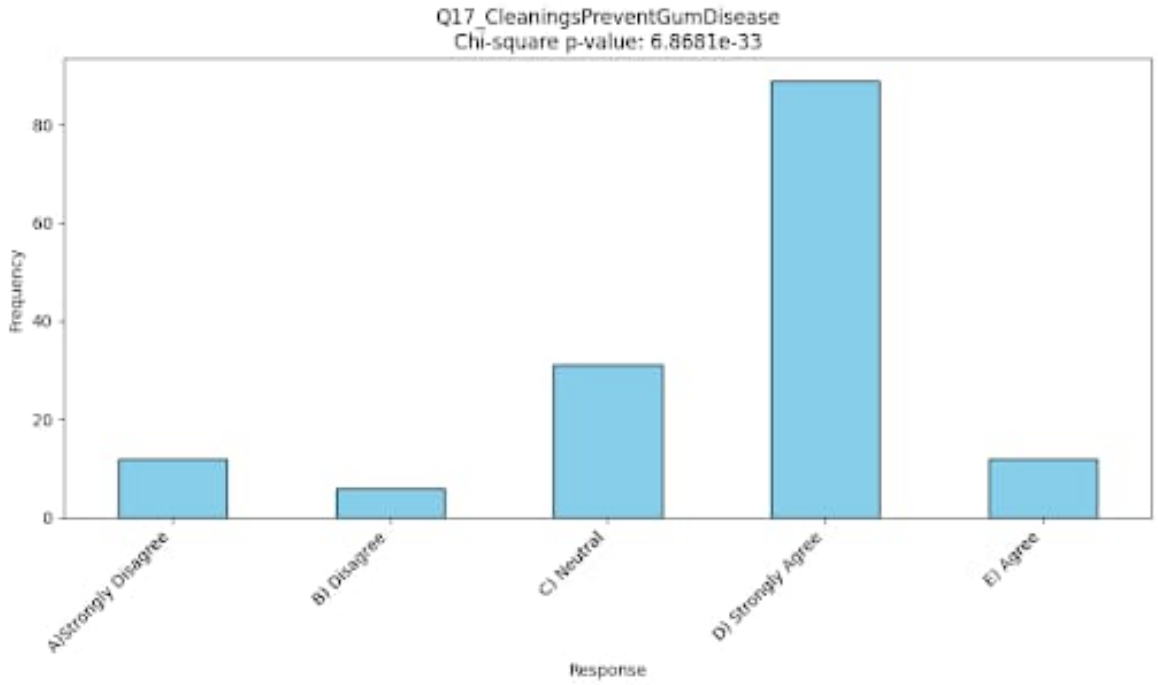


Figure 17

(p = 0.1457)Not Significant

There is near-unanimous awareness of the benefits of professional cleanings for gum health. This knowledge is firmly established across the entire sample.

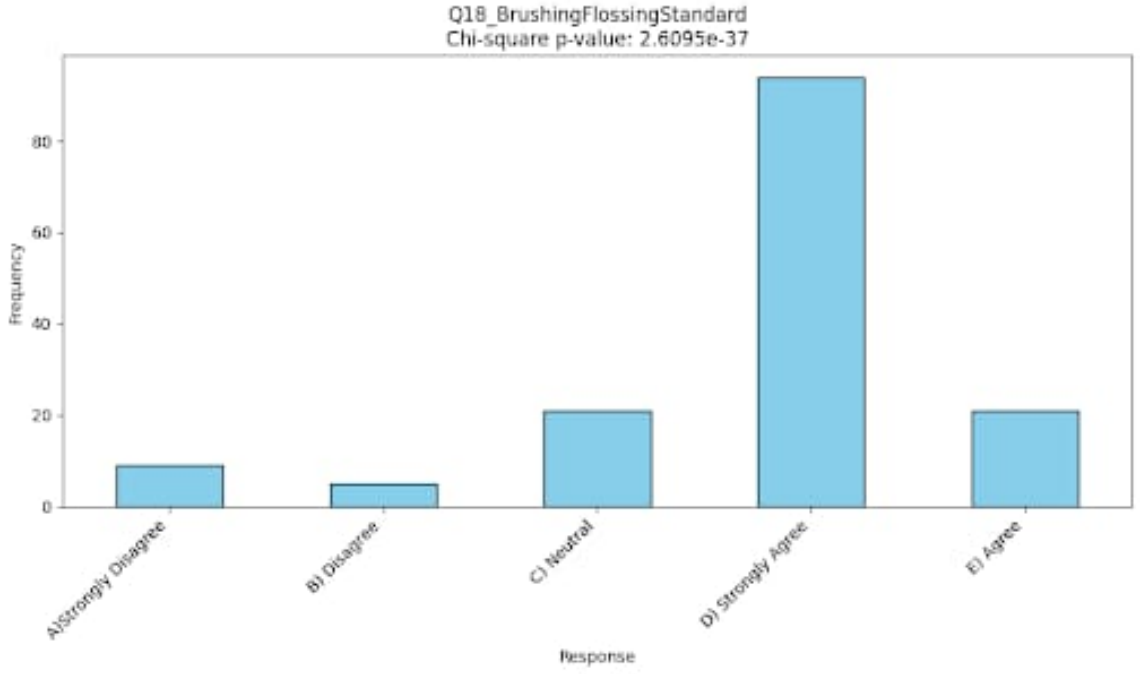


Figure 18

(p = 0.2245) Not Significant

Almost all respondents correctly identify the daily standard for oral hygiene. This fundamental knowledge is shared by all, regardless of dental visit frequency.

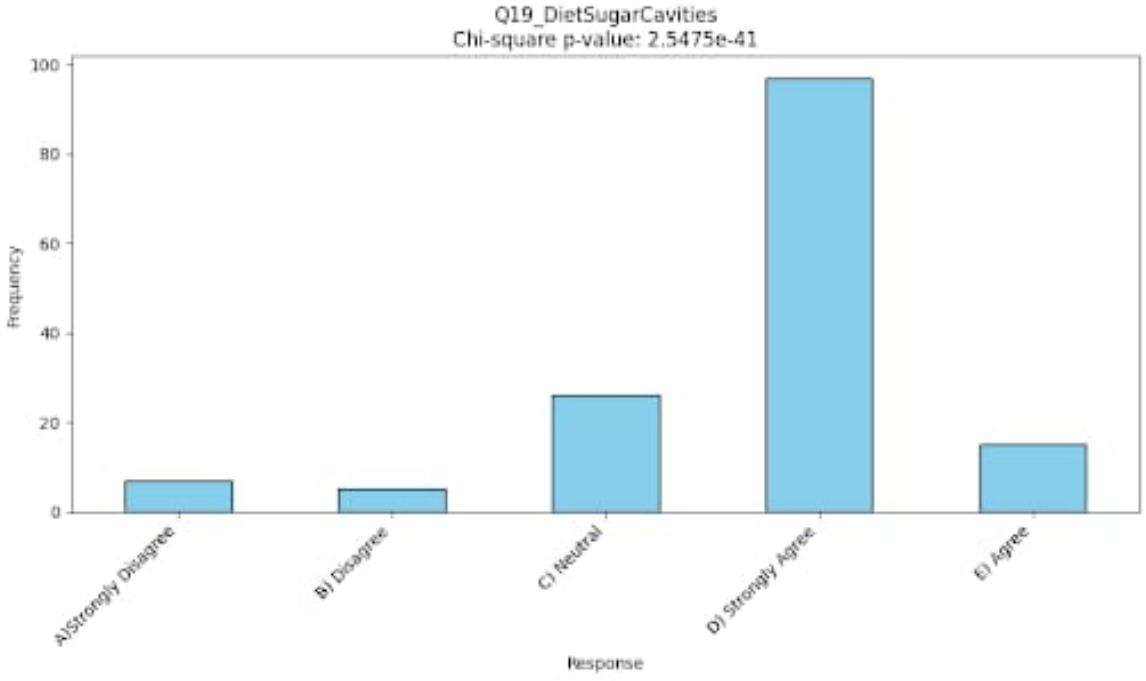


Figure 19

(p = 0.5321) Not Significant

Participants strongly agree that sugar consumption is a primary cause of cavities. This is the most consistent and agreed-upon belief in the entire dataset.

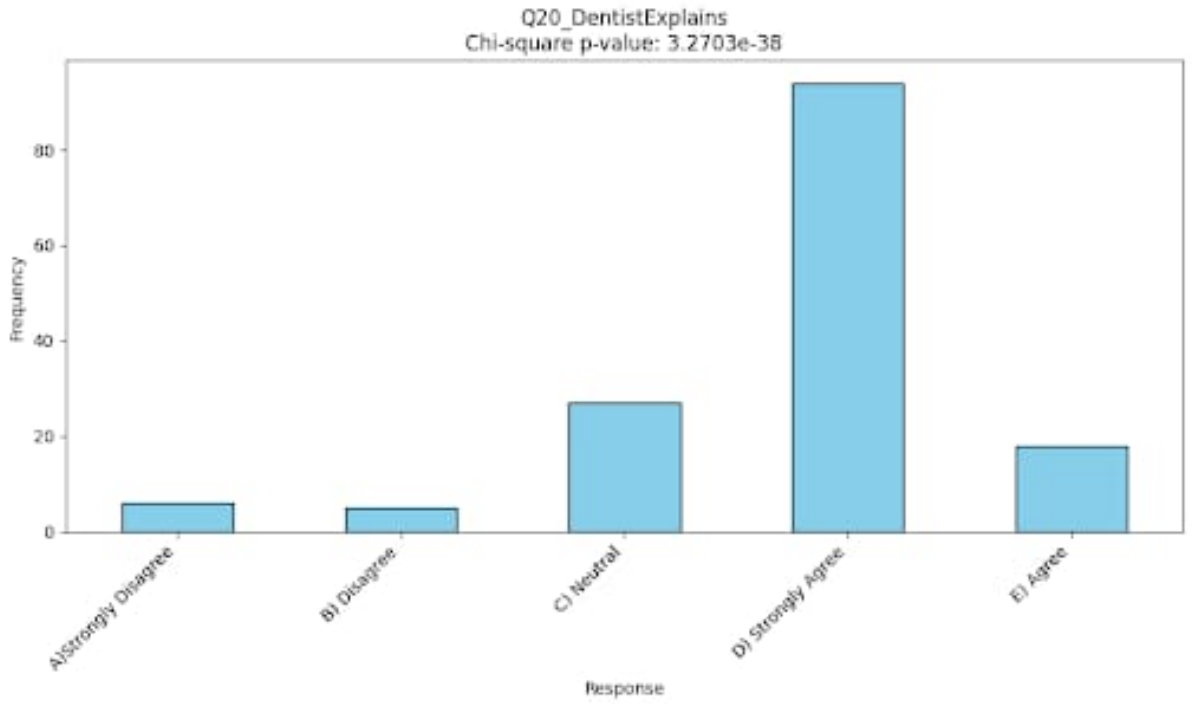


Figure 20

(p = 0.3296)Not Significant

Most participants report that their dental professionals explain treatments clearly. This positive perception of communication is shared across the group.

Results

The study included 150 respondents, of whom 139 (92.7%) had visited a dentist previously.

Dental Anxiety and Triggers

Primary Reason for Fear: The leading cause of dental fear was “Bad past experiences” (50.0%), followed by “Hearing negative experiences” from others (20.7%) and “Fear of pain” (14.7%).(Figure 6)

Procedure-Specific Anxiety: Tooth extractions and surgical procedures were the most feared (58.0%), followed by root canal treatments (24.7%).(Figure 8)

Fear Peak: A significant portion of the sample felt their fear peaked “During the treatment” or “The night before.”(Figure 7)

Prevalence of Myths

Scaling Myth: 71.3% of participants believed the misconception that professional scaling "scrapes and chips away tooth enamel," while only 15.3% correctly identified it as using vibrating tools to remove deposits.(Figure 13)

Brushing Myth: 42% of respondents believed that "hard bristles and force clean better," reflecting a common misconception about oral hygiene practices.(Figure 10)

Discussion

The results of this study align with existing literature suggesting that past experiences are a primary driver of dental fear [1, 8]. The sound of the dental drill is a "near-universal trigger" for discomfort. This fear is a consistent psychological trait across the population, regardless of whether a person has visited a dentist before. The high prevalence of fear associated with extractions (58%) is consistent with findings by Beaton et al. [3] and Madan et al. [7], who highlighted surgical procedures as major stressors. The significant association between previous visits and feeling "uneasy" suggests that while exposure to the dentist might reduce "terror," it often leaves a lingering sense of apprehension due to the clinical environment [22, 27]

The widespread belief in the scaling myth (71.3%) is particularly concerning. This mirrors findings by Sarmah et al. [18] and Raina et al. [17], who noted that the fear of enamel damage often prevents patients from seeking preventive cleanings. The fact that even those who have visited a dentist hold these myths indicates a gap in chairside education.

Trust in Anesthesia: There is a high and consistent level of trust in local anesthesia's ability to prevent pain, which serves as a positive expectation for management regardless of prior experience.

Effective communication and the use of modern, less invasive techniques could improve treatment compliance and reduce the "avoidance cycle" often seen in anxious patients [21, 26, 30].Despite high anxiety, most participants reported that their dental professionals explain treatments clearly. This positive perception of communication is shared across the entire group, regardless of their fear levels.

Conclusions

Dental anxiety remains a significant barrier to oral health, primarily rooted in negative past experiences. Furthermore, misconceptions regarding professional scaling and oral hygiene are remarkably persistent, even among regular dental attendees. This study underscores the need for:

Enhanced Patient Communication: Dentists should actively explain the mechanics of procedures like scaling to dispel myths [20, 25].

Anxiety Management: Clinicians should adopt behavioral management strategies for patients reporting moderate to high anxiety levels [2, 5].

Public Awareness: Educational campaigns are needed to correct the "hard brushing" and "enamel scraping" myths that dominate public perception [15, 23].