Dental Anxiety: A Paper-Based Instructional Module
for Dental Practitioners on Management and Prevention of Dental Anxiety

Plan B

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Abstract

A number of dental practitioners lack the management and preventive skills needed to decrease dental anxiety and as a result, do not dedicate the adequate resources to do so. Many individuals are so afraid of the dentist that some of them avoid visiting the dentist altogether. This can lead to many oral health problems such as dental caries, gingivitis, periodontitis, and tooth loss. In order to address this problem, a paper-based instructional module was designed to provide dental practitioners in the State of Hawaii with management and preventive skills to help decrease dental anxiety.

There were nine dentists who participated in this instructional design project. All dentists were licensed in the State of Hawaii, owned their own office, and had been practicing for more than five years. According to the data that were collected, all of the dentists improved their knowledge on dental anxiety management and prevention.
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Table of Contents

Abstract ........................................................................................................................ 2
Acknowledgements ...................................................................................................... 3
Chapter I: INTRODUCTION ..................................................................................... 9
   Needs Statement .............................................................................................. 10
   Problem Statement .......................................................................................... 10
Chapter II: LITERATURE REVIEW ......................................................................... 12
   Dental Anxiety ................................................................................................. 13
      Causes of Dental Anxiety .............................................................................. 14
      Advances in Treating Patients with Dental Anxiety .................................. 15
      Management of Dental Anxiety ................................................................. 17
      What Dentists are doing about Dental Anxiety? ........................................ 19
      Conclusion ................................................................................................... 20
Chapter III: METHODOLOGY .................................................................................. 22
   Goals ................................................................................................................. 22
   Objectives ......................................................................................................... 22
   Systems Analysis .............................................................................................. 28
      Subsystem .................................................................................................... 30
      System .......................................................................................................... 31
      Suprasystem .................................................................................................. 32
   Design of the Instructional Module ................................................................... 32
   Systems Approach Model ............................................................................... 33
   Software and Hardware Requirements ............................................................. 36
Reflections ........................................................................................................ 54
Future Developments .......................................................................................... 54
Summary ................................................................................................................ 55
  What Worked ........................................................................................................ 55
  What Did Not Work .............................................................................................. 55
  What Went Well .................................................................................................... 55
  What Went Wrong ............................................................................................... 56
Next Time .................................................................................................................. 56
  What To Continue ................................................................................................. 57
REFERENCES .......................................................................................................... 58
APPENDICES ........................................................................................................... 62
  Appendix A – Instructional Strategy ...................................................................... 62
  Appendix B – Objectives Sequenced and Clustered ............................................... 63
  Appendix C – Human Subjects Application .......................................................... 64
  Appendix D – Approval of a Study Involving Human Subjects .............................. 68
  Appendix E – Demographic Survey ....................................................................... 71
  Appendix F – Attitudinal Survey .......................................................................... 72
  Appendix G – Project Timeline ............................................................................ 73
  Appendix H – Agreement to Participate Consent Form ......................................... 74
  Appendix I – Pre-Test and Post-Test .................................................................... 76
  Appendix J – Dental anxiety Instructional Module ................................................. 86
LIST OF TABLES

Table 1: Demographic Survey Data ................................................................. 43
Table 2: Demographic Survey Data ................................................................. 44
LIST OF FIGURES

Figure 1: Instructional Hierarchy Chart ................................................................. 24
Figure 2: Instructional Hierarchy Chart Continued................................................ 25
Figure 3: Characteristics of patients with dental anxiety ................................. 26
Figure 4: Factors that help manage dental anxiety............................................. 26
Figure 5: Terminal Objective ............................................................................. 28
Figure 6: Systems Analysis Chart ................................................................. 29
Figure 7: Comparison of Pre- and Post-Test by Objectives Bar Chart ............. 47
Figure 8: Comparison of Pre- and Post-Test by Objectives Bar Chart cont ...... 47
Figure 9: Comparison of Pre- and Post Test by Objectives Line Chart............. 48
Figure 10: Comparison of Pre- and Post-Test by Objectives Line Chart cont..... 48
Figure 11: Comparison of Pre- and Post-Test Scores by Participants Bar Chart ... 50
Figure 12: Comparison of Pre- and Post-Test Scores by Participants Line Chart ... 50
Figure 13: Results of Attitudinal Survey .......................................................... 51
CHAPTER I

INTRODUCTION

Have you heard of anyone with dental anxiety or have you experienced it yourself? You are not alone. Dental anxiety affects many children and adults. According to Dr. Michael Krochak, who is Chief of Staff at 29 West Dental Associates and Founder and Director of the Dental Phobia Treatment Center of New York:

Dental phobia is the serious, often paralyzing fear of seeking dental care. It has been reliably reported that 50% of the American population does not seek regular dental care. An estimated 9-15% of all Americans avoid much needed care due to anxiety and fear surrounding the dental experience. This translates to some 30 - 40 million people so afraid of dental treatment that they avoid it altogether. (Dental Phobia Treatment Center, Introduction section, ¶ 1)

Individuals who have dental anxiety tend to require more time for treatment and often cancel or fail to show up for an appointment. It is important to treat every individual with special care and good communication because a bad experience is difficult to forget.

According to the article, “Trauma-Related Phenomena in Anxious Dental Patients,” dental anxiety is quite common in the general population. Therefore, dental patients have feared visiting their dentists for routine maintenance due to dental anxiety. “Although many dental fear individuals reported regular dental care, there was a clear difference in visiting habits between individuals with high and low dental fear” (Schuller, Willumsen & Holst, 2003, p.120 ). Therefore, dental anxiety prevents patients from visiting their dentist on a regular basis, thus leading to caries, gingivitis, periodontitis, tooth loss, decreased dentist-to-patient relationship, increased cost in treatment, and increased dental anxiety. “Among patients reporting severe
dental fear and avoidance behavior of dental care, there was a significant association and clear impact of psychological distress, as measured by means of mood, and general anxiety on dental anxiety” (Hakeberg, Hagglin, Berggren, & Carlsson, 2001, p. 102). Factors contributing to dental anxiety in patients include traumatic experiences with previous dental treatment, dentist’s behavior and attitude, atmosphere of the dental office, fear of being scolded for oral health neglect, fear of pain, and fear of cost for treatment.

Needs Statement

Patients who suffer from dental anxiety and avoid visiting their dentist on a routine basis tend to develop dental disease and poor oral health. The findings of the study in “The Impact of Dental Anxiety on Daily Living” show that “dental anxiety severely compromises ‘oral health’ since it has been found to impact upon social and psychological well being” (Cohen, Fiske, and Newton, 2000, p. 389). Many times, patients who visit the dentist for dental emergencies are the patients who do not visit the dentist regularly. Therefore, it is important for the dental offices to be involved in treating dentally anxious patients with compassion, understanding and care. “Many of the informants felt that their dentists lacked empathy and respect, and saw this as one of the most significant factors behind their dental fear” (Abrahamsson, Berggren, Hallberg, & Carlsson, 2002, p. 193). This demonstrated that dental practitioners need to have the knowledge and skills to help manage and prevent dental anxiety.

Problem Statement

The purpose of this project was to develop a paper-based instructional design module on dental anxiety to provide dental practitioners with the knowledge and skills they needed to help treat individuals with dental anxiety. Dental practitioners have identified different characteristics of patients with dental anxiety and factors that help manage patients with dental anxiety. The
desired outcome of this module was that dental practitioners could apply the knowledge and skills presented to their current practices to reduce dental anxiety, encouraging patients to visit the dentist on a routine basis and improving oral health.

Many patients fear the dental office and are highly influenced by the dental staff, friends, family, and past experiences in the dental environment. Although the social impact of dental disease is established, its relation to dental anxiety is not well documented. The studies discussed earlier demonstrated clearly that dental anxiety could affect people’s lives at work and also their personal relationships. At work, it affected relationships through the need to conceal the perceived weakness of anxiety: such as, avoiding colleagues because of irritability associated with dental appointments, or seeking peer group support. Oral pain and infection, as a consequence of the effects of dental anxiety on oral health, interfered with the ability to work. Similarly, poor dental appearance affected career prospects by creating a negative impression at interviews and lowering both self-esteem and self-confidence (Cohen et. al, 2000, p 389). Dental practitioners need to make every effort to minimize dental anxiety during a dental visit. The results of this project addressed whether or not a self-instructonal module helped in the management and prevention of dental anxiety.
Dental Anxiety

Chapter II

LITERATURE REVIEW

Have you ever had a bad experience at the dentist? Or, has anyone ever told you of his or her bad childhood experience at the dentist? Both questions are likely scenarios. Negative experiences leave many individuals fearful and anxious when the need to visit a dentist arises.

According to de Johgh, Aartman and Brand (2003), dental anxiety is quite common in the general population. “Many of the informants felt that their dentists lacked empathy and respect, and saw this as one of the most significant factors behind their dental fear” (as cited in Abrahamsson, Berggren, Hallberg & Carlsson, 2002, p. 193). Dental anxiety highly influences individuals and their routine dental care. Individuals who suffer from dental anxiety and avoid visiting their dentist on a routine basis, thus, tend to develop dental diseases including dental caries, gingivitis, periodontitis and tooth loss, resulting in further decrease in dentist to patient relationship and a possible increase in cost of treatment.

The instructional designer did some extensive research on dental anxiety. Databases such as ERIC and Academic Search Premier were searched for literature on dental anxiety. The search in ERIC resulted in over 2,000 citations, unlike the search in Academic Search Premier that resulted in only 184 citations. The research done in ERIC took much longer to review; however, many relevant articles were found in this section. Another resource the instructional designer used was the American Dental Association (ADA) Web site where there were 99 citations on “dental anxiety.” This was a much easier search because the instructional designer went straight to the ADA Web site and typed dental anxiety and all the articles were posted here; however, in order to view the article in full text, the instructional designer had to subscribe to
Dental Anxiety

Dental anxiety is when an individual has a fear of going to the dentist. The following articles and studies that have been published show that there is a link between dental anxiety and routine dental care. A study by Hagglin, Hakeberg, Ahlqwist, Sullivan, & Berggren (2000) analyzed the association between dental anxiety, dental attendance, health status and social factors among middle-aged and elderly women. The results from this study showed dental anxiety decreased with increase in age; however, there were still a high proportion of dentally anxious elderly women. This study also showed a correlation between higher levels of dental anxiety and irregular dental visits. Dental anxiety and attendance had only a limited connection with socio-economic, dental health and general health status. Factors contributing to dental anxiety in patients during childhood include: traumatic dental procedures, behavior and attitude of the dentist practitioner, dental office atmosphere, fear of reprimand for oral hygiene neglect, fear of the unexpected and cost for treatment and pain. According to Abrahamson, Berggren, Hakeberg, & Carlsson (2001), it was hypothesized that phobic avoidance is related to stress, anxiety reactions, negative oral health effects, psychological distress, and negative social consequences. Age, sex, education, dental attendance patterns, dental anxiety, general fears, general state and trait anxiety, mood states, depression and quality of life effects were analyzed and studied (p.273). Some of the studies showed that patients who avoided their dentist due to dental anxiety had more missing teeth. These studies showed how dental anxiety can have a great impact on a patient’s life and overall health. Patients with dental anxiety need to be
reassured of the improvements in technology and dentistry. In order to address the problem of
dental anxiety, one must find out what causes dental anxiety.

*Causes of Dental Anxiety*

One of the causes of dental anxiety is bad childhood dental experience. The study by de
Jongh, Aartman & Brand (2003) investigated whether dental anxiety was associated with the
occurrence of trauma-related symptoms associated with earlier traumatic dental experiences.
The results from this study showed that “dentally anxious patients suffer from a high level of
intrusive recollections of earlier dental experiences” (p. 57). In other words, patients who had
previous bad dental experiences had dental anxiety because they could remember their pain and
expected it.

Dental anxiety has also affected people’s daily lives. “The Impact of Dental Anxiety on
Daily Living” by Cohen, Fiske, & Newton, (2000) explored the physiological, cognitive and
behavioral impact of dental anxiety on people’s daily life. This study was more detailed and
explored the overall impact of dental anxiety. Some of the physiological impacts were dry
mouth, sweatiness, and increased heart rate prior to and on the day of the dental appointment.
Cognitive impacts were grouped into anticipations, beliefs, negative feelings, memory, stimulus
processing and blanking. The anticipations were fear of losing teeth, death, and catastrophic
thoughts of what might happen. Individuals suffering from dental anxiety were embarrassed
about their condition. They even believed pulling all their natural teeth would solve their
anxiety. Individuals experienced negative feelings such as loss of control and low self-esteem.
Some people could vividly remember their bad experiences at the dentist. Overall, people
disliked the sound and sight of dental equipment, the smell of the environment, and the drilling.
These feelings gave them an expectation of pain, being hurt, and choking. Some behavioral
impacts included avoidance of certain foods. This study found the main impact of dental anxiety was sleep disturbance. Generally, this article supports the impact dental anxiety has on daily lives. The articles mentioned above clearly state some of the causes of dental anxiety, but there are still dental practitioners who are unaware of the management techniques that help to reduce dental anxiety.

Advances in Treating Patients with Dental Anxiety

In recent years, there have been many improvements in equipment, techniques, treatment, and environmental factors to help combat dental anxiety. New techniques and treatments available to help reduce dental anxiety may include gel anesthetics, computerized injections and laser treatment. The gel anesthetics are a type of gel that is applied on the patient’s gum without any needle, discomfort or pain. Just the thought about a needle makes a lot of patients nervous before the procedure is even performed. Oraqix is a needle-free anesthetic and according to Magnusson et.al (2003), Oraqix may be a valuable alternative to conventional injection anesthesia. “The Wand” is a computerized controlled injection, which has a small pen device that is used to inject into the area to be numbed and has been proven to be more comfortable to patients (Tan et. al., 2001, p.1). The appearance of the conventional syringe is intimidating so the small pen is much more tolerable and less intimidating to an anxious patient. The computerized injection slowly releases the appropriate amount of anesthetic solution to minimize discomfort. Laser treatment is a less invasive method that can be used to make incisions of the gum with minimal discomfort.

A number of dental offices create a spa-like atmosphere to create a more positive, pleasant and relaxing environment. The availability of television, digital versatile disc (DVD) glasses, and music are all techniques to distract the anxious patient and minimize the high
pitched drilling sound. For example, in the “Austin Home and Living” magazine, there is an article by Taylor Bowles (2004) that discusses dental spas. According to North Gate News Online by Monica Metha (2004), the ADA surveyed 427 members asking if they offered amenities and found that only five percent did. It was also noted that the University of the Pacific Dental School attracted 90 students for a course on spa dentistry. Paraffin wax, hypnosis and massages are also methods of improving patient comfort while in the dental chair. Aromatherapy and air fresheners help to eliminate the chemical and disinfectant type dental office odors. Many dental advertisements on television, newspaper and the Internet share how dentists are currently creating a different atmosphere for the patient. Although improvements have been made, many patients who suffer from dental anxiety are unaware of the improvements available and not all dentists are using them. Additionally, there are dentists who are either unaware of or unwilling to address the needs of this patient population.

Dental practitioners, who are unaware of the needs of this patient population, require appropriate training to identify and manage patients with dental anxiety. Such training involves the techniques in identifying characteristics of patients with dental anxiety; communication skills, modified environment and patient management are necessary to help combat dental anxiety. Therefore, patients will be more at ease during their dental visit, by knowing what to expect and will more likely return for routine maintenance. Some patients may even be curious about the new techniques and will be willing to at least attempt visiting the dentist. Dentists will need to implement and practice these techniques in their practices.
Management of Dental Anxiety

Several articles showed how effective strategies help to reduce patient’s state anxiety, management and preventive techniques for dental anxiety. For example, Dailey, Humphris, & Lennon (2002) stated:

This study tested the hypothesis that informing dentists about patients’ dental anxiety prior to commencement of treatment reduces patients’ state anxiety. The outcome of this study showed that providing the dentist with information of the high level of a patient’s dental anxiety prior to treatment, and involving the patient in this, reduced the patient’s state anxiety. (p. 321)

In other words, if the dentist knew the patient’s anxiety level prior to their visit it helped the patient’s feel less apprehensive. Another study by Berggren (2001), discussed the long-term management of the fearful adult patient using behavior modification and other modalities. The study explained a number of behavioral and cognitive treatment methods available to dentists to help improve dental anxiety. Some examples of behavior modification were through systematic desensitization which included:

1) constructing an individual anxiety scale at each stage of treatment 2) constructing a hierarchy of situations progressively more threatening and anxiety provoking 3) training the patient in a relaxation technique as an antagonist to anxiety and tension 4) gradually exposing the patient during relaxation to the hierarchy starting with the least threatening situation. (p. 12)

In other words, if the dentist understands the level of anxiety of the patient, he or she can be more sensitive to his or her needs. Secondly, if the patient is more relaxed before treatment, it will help him or her to be more relaxed overall. Lastly, if the dentist slowly breaks the patient in
by starting with the least threatening situation, the patient will also be more at ease. This shows that behavior modification is effective in decreasing dental anxiety.

Distracters were effective in decreasing patient’s dental anxiety. Frere, Crout, Yorty & McNeil (2001) investigated the effects of a virtual image audio-visual (A/V) eyeglass system on patients’ anxiety and pain. Patients were given a pre and post treatment questionnaire and reported less anxiety and discomfort when using the A/V eyeglass system. Most subjects preferred using the system than traditional dental treatment. Overall, the study found that using an A/V device was beneficial to the dentally anxious patient.

Patients who had lower general anticipation anxiety were shown to have a greater reduction in dental anxiety than ones who had a high general anticipation. The study by Aartman, Ad., de Jongh, Makkes & Hoogstraten (2000) was done to assess treatment outcomes with dental anxiety reduction. This study was done to determine the outcome of behavioral management, nitrous oxide sedation and intravenous sedation in dental anxiety reduction and dental attendance one year later. The results from this study showed that patients generally benefit from treatment.

One of the management techniques for the dentists is having good communication skills and building a relationship with the patient. According to Moore, Brodsgaard & Abrahamsen (2002), many anxious patients successfully started and maintained regular dental treatment on their own even if they had extreme anxiety and dental avoidance. Moore et.al (2002) suggested dentists must provide trust, reassurance, obtain adequate anesthesia and encourage patient participation. Also, the dentist-to-patient trust should be the primary therapeutic goal. Trust also comes with past experience with the dentist and good communication skills. Molen, Klaver, & Duyx (2004) described an investigation into the effectiveness of the communication skills
training programme, ‘How to Deal with Anxious People,’ for graduate students in dentistry. The study consisted of 34 graduate students who took a knowledge test, behavioral role-play test and a learner report. The training covered several elements such as intake interview with the anxious patient, recognition of anxiety in the patient, different methods for the treatment of anxious patients and anxiety reduction, integrated use of the basic micro skills: active listening, non-verbal communication, asking questions, paraphrasing reflection of feeling, summarizing. The results of the behavioral test indicated students scored low on introduction and closure. The article stated that the introduction was significant in reducing anxiety. The recommendations from this study were to include the knowledge and behavioral test as a regular part of the exam and curricula for dental students.

All of the studies mentioned above discussed different management techniques to reduce dental anxiety. New technology, good communication skills, trust, distracters and knowledge prior to treatment were shown to be effective in reducing dental anxiety. It is clear that dentists need to implement these techniques into their practice. But how many dentists are actually implementing these things in practice?

What Dentists are doing about Dental Anxiety?

As mentioned above, the World Wide Web has provided many Web sites and information on dental anxiety. The ADA (2005) has provided a video on how to cope with dental anxiety. Dr. David M. Blende, Dr. Maria M. Majda and Dr. Melissa A. Maus (2004) are dedicated specialists who have a Web site addressing their approach to dentistry and sedation options depending on the needs of the patient to feel safe and free of stress. They also include a dental anxiety scale test questionnaire to understand the needs of an anxious patient. This test is taken by the patient and allows the dentist to have an idea prior to treatment the patient’s perception
and anxiety level. This test is a useful and simple tool for all dentists to use for their anxious patients. Dr. Marvin Mansky, DDS (2004) has a dental cyberweb which discusses, “A Simple Five Minute Cure for Dental Anxiety.” In this article, he provided some background on dental anxiety, cause of dental anxiety, and some ways to eliminate acute dental anxiety.

These are just a few examples of resources on the Web that featured dentists addressing dental anxiety in their practice. The Web also contained a variety of resources addressing the causes of dental anxiety. Dentists are providing a lot of information to the public on coping strategies for dental anxiety. They are also marketing their practices by making their Web sites attractive. For example, Dr. Blende, Dr. Majda, and Dr. Maus (2004) explained the different options available to reassure patients of their comfort and safety.

Conclusion

The results of many studies mentioned above support a need for management and prevention of dental anxiety. The studies also show a significant relationship between dental anxiety and routine dental visits. It seems like there are numerous resources on the Web on dental anxiety; however, it was difficult to find information in the form of paper-based modules. Although there are numerous resources available on describing dental anxiety, they were not practical and to the point. There were resources with too much information; a simple checklist would be more appropriate for the dentist. There were few resources that addressed immediate options for dentists to implement right away. Starting a behavior modification program may be difficult; however, it would be helpful if dentists are given information on identifying signs of dental anxiety.

The instructional designer decided on a paper-based format for the instructional module on dental anxiety for several reasons. First, a paper-based module would be convenient for busy
dentists, as it does not require any computer, computer software, or Internet connectivity, and can be easily transported and easily accessible, anywhere, anytime. Second, a paper-based module would be straightforward and uncomplicated, as it would not require any special computer skills for dentists who may not have them. Third, a paper-based module’s content is functional as it can easily be applied to a dentist’s office through the simple duplication of ready-to-use checklists. A paper-based module for dentists would be more useful for the ones who do not have good computer skills. A paper-based module would be advantageous for more dentists especially because they could use some of the checklists at chair side. A dentist would need a computer in each operatory to be able to access a multimedia module. A paper-based module would be convenient for dentists who currently do not have a computer in each operatory.

Although there are many advantages of having a multimedia module, the instructional designer has chosen to do a paper-based module for the convenience of the dentist.

There is evidence that dental anxiety highly impacts people’s daily lives, routine dental visits and oral health. Improvement in meeting the needs of the dentally anxious patient will result in more routine dental visits, which will result in better health, oral health, improved self-esteem and quality of life.
CHAPTER III

METHODOLOGY

Goals

The goal of this instructional module was to provide dental practitioners with management and preventive techniques for reducing dental anxiety. Dental anxiety is quite common among the general population and a number of people still fear the dentist because of bad childhood experiences, among other reasons. Individuals who suffer from dental anxiety and avoid visiting their dentist on a routine basis, tend to develop dental diseases including dental caries, gingivitis, periodontitis, and tooth loss, resulting in further deterioration of dentist to patient relations and possible increased in cost for treatment.

Objectives

Many patients who suffer from dental anxiety are unaware of the improvements available to them by some dentist practitioners. Additionally, there are dentists who are either unaware of or unwilling to address the needs of this patient population. For the dentist practitioners who are unaware of the needs of this patient population, appropriate training such as dental anxiety assessment, modified environment, and patient management are necessary to help combat dental anxiety. A need existed to provide dental practitioners with the knowledge to guide them in their private practices, enabling them to deliver appropriate patient care. To account for this need, an instructional module for dental practitioners was created to enhance their knowledge on patient management with dental anxiety.

There were no entry-level behaviors for any of the clusters. The first cluster of objectives as shown in Figure 1, are the characteristics of patients suffering from dental anxiety. The objectives in this cluster are for the dentist to define anxiety, identify the initial step of dental
anxiety assessment, identify a patient who may be anxious about dental treatment, identify a patient’s behavior who best expresses signs of fear, identify patients who exhibit white-coat syndrome, and identify five physiological responses evoked by dental treatment. Once the dentist can determine all these characteristics, the dentists should be able to determine factors that help to manage patients with dental anxiety that are illustrated in Figure 2.

The second clusters of objectives, as shown in Figure 2, are the factors that help to manage patients with dental anxiety. The objectives in this cluster are for the dentist to describe and identify the following; describe appealing office design, identify five distracters that can be used in the dental office for an anxious dental patient, describe four different types of aroma, describe five important factors to remember about dental equipment and chair positions, describe equipment which decreases stressors and increases comfort, describe dental stimuli that evoke fear, identify good communication skills, identify the four new patient questions the receptionist should ask on the phone, identify the four emergency patient questions the receptionist should ask on the phone, identify the four key points when addressing patients concerns, and identify the four techniques on attentiveness when communicating with a patient. The objectives in Figures 1 and 2 guided the dentist to have the knowledge and cognitive skills to be able to accomplish the terminal objective of the instructional module.

The terminal objective, as shown in Figure 1, is for the dentist to analyze any given situation in a dental setting and determine the factors necessary in addressing needs of a patient with dental anxiety. The terminal objective is the desired goal the dentist should reach after completing the paper-based instructional module.
Figure 1: Instructional hierarchy chart.
Figure 2  Instructional hierarchy chart continued.
Cluster 1: Characteristics of patients with dental anxiety

<table>
<thead>
<tr>
<th>Objective #</th>
<th>Behavior</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Define dental anxiety.</td>
<td>Given four statements, the dentist will choose the best statement that defines dental anxiety.</td>
</tr>
<tr>
<td>2</td>
<td>Identify the initial step of dental anxiety assessment.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies the initial step of dental anxiety assessment.</td>
</tr>
<tr>
<td>3</td>
<td>Identify a patient who may be anxious about dental treatment.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies a patient who may be anxious about dental treatment.</td>
</tr>
<tr>
<td>4</td>
<td>Identify a patient's behavior who best expresses signs of fear.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies a patient's behavior who best expresses signs of fear.</td>
</tr>
<tr>
<td>5</td>
<td>Identify patients who exhibit white-coat syndrome.</td>
<td>Given four descriptions, the dentist will choose the best statement that identifies a patient who exhibits white-coat syndrome.</td>
</tr>
<tr>
<td>6</td>
<td>Identify five physiological responses evoked by dental treatment.</td>
<td>Given an open-ended question, the dentist will list five physiological responses evoked by dental treatment.</td>
</tr>
</tbody>
</table>

Figure 3. Characteristics of patients with dental anxiety.

Cluster 2: Factors that help manage dental anxiety

<table>
<thead>
<tr>
<th>Objective #</th>
<th>Behavior</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Describe appealing office design.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies appealing office design.</td>
</tr>
<tr>
<td>8</td>
<td>Identify five distracters that can be used in the dental office for an anxious dental patient.</td>
<td>Given an open-ended question, the dentist will list five distracters that can be used in the dental office for an anxious dental patient.</td>
</tr>
<tr>
<td>9</td>
<td>Describe four different types of aroma.</td>
<td>Given an open-ended question, the dentist will list four different types of aroma.</td>
</tr>
<tr>
<td>10</td>
<td>Describe five important factors to remember about dental equipment and chair positions.</td>
<td>Given an open-ended question, the dentist will list five important factors about dental equipment and chair positions.</td>
</tr>
<tr>
<td></td>
<td>Task Description</td>
<td>Instructions</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>Describe equipment which decreases stressors and increases comfort.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies equipment that decrease stressors and increase comfort.</td>
</tr>
<tr>
<td>12</td>
<td>Describe dental stimuli that evoke fear.</td>
<td>Given four descriptions the dentist will choose the best description that describes dental stimuli that evoke fear.</td>
</tr>
<tr>
<td>13</td>
<td>Identify good communication skills.</td>
<td>Given four descriptions, the dentist will choose the best description that identifies good communication skills.</td>
</tr>
<tr>
<td>14</td>
<td>Identify the four new patient questions the receptionist should ask on the phone.</td>
<td>Given an open-ended question, the dentist will identify the four new patient questions the receptionist should ask on the phone.</td>
</tr>
<tr>
<td>15</td>
<td>Identify the four emergency patient questions the receptionist should ask on the phone.</td>
<td>Given an open-ended question, the dentist will identify the four emergency patient questions the receptionist should ask on the phone.</td>
</tr>
<tr>
<td>16</td>
<td>Identify the four key points when addressing patients concerns.</td>
<td>Given an open-ended question, the dentist will identify the four key points to remember when addressing patients concerns.</td>
</tr>
<tr>
<td>17</td>
<td>Identify the four techniques on attentiveness when communicating with a patient.</td>
<td>Given an open-ended question, the dentist will identify the four techniques on attentiveness when communicating with a patient.</td>
</tr>
<tr>
<td>18</td>
<td>Identify the six ways to address the concerns of a patient who is afraid of needles.</td>
<td>Given an open-ended question, the dentist will identify the six ways to address the concerns of a patient who is afraid of needles.</td>
</tr>
<tr>
<td>19</td>
<td>Identify the picture that shows appropriate tray set-up for dental anesthetic to help decrease patient anxiety.</td>
<td>Given an open-ended question, the dentist will identify the picture that shows appropriate tray set-up for dental anesthetic to help decrease patient anxiety.</td>
</tr>
<tr>
<td>20</td>
<td>Identify which chair position would not decrease a patient’s anxiety.</td>
<td>Given an open-ended question, the dentist will identify which chair position would not decrease a patient’s anxiety.</td>
</tr>
</tbody>
</table>

*Figure 4.* Factors that help manage dental anxiety.
Cluster 3: Terminal Objective

<table>
<thead>
<tr>
<th>Objective #</th>
<th>Behavior</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Analyze any given situation in a dental setting and determine the factors necessary in addressing needs of a patient with dental anxiety.</td>
<td>Given any situation, the dentist will be able identify the patient with dental anxiety and address the needs of each patient.</td>
</tr>
</tbody>
</table>

*Figure 5.* Terminal objective.

Systems Analysis

A systems analysis identified the dental practitioners and the components that affect their learning. The systems analysis consisted of (1) the subsystem, (2) the system, and (3) the suprasystem. Shown in Figure 6, the dentist illustrated in the circle, who was the targeted learner of the paper-based module, is the major component and the center of the system. The oval shapes comprise the subsystem that consists of the community, media, peers, and family. Another part of the subsystem is illustrated by the rectangular box, which represents the intrinsic factors such as the past experiences, values, beliefs, time, prior knowledge, cost, training, and years in practice. The octagon shapes represent all major components of the system that consist of the equipment, environment, office staff and techniques. The two rectangular shapes at the top of the figure consist of the suprasystem that is the professional organizations and dental schools. The analysis of the system allowed the instructional designer to visually recognize the factors that contribute to dental anxiety and the communication within the system.

The systems analysis chart illustrates the communication between the components in the system and is indicated by an arrow or line. The thickness of the arrows indicates the amount of information transferred. As noted in the lower left rectangle of Figure 6, one arrowhead indicates unidirectional communication whereas two arrowheads indicate a bi-directional communication. A line with no arrowhead indicates influence other than communication.
Figure 6. Systems analysis chart.
Subsystem

The subsystem consisted of the community, media, peers, family and the intrinsic factors of the dentist as shown in Figure 6. The intrinsic factors are the past experiences, values, beliefs, time, prior knowledge, cost, training, and years in practice. The community, media, peers, and family directly affect how the dentist will learn, act or feel. A thick line indicates the influence of the intrinsic factors that will directly affect the dentist and how he is able to address dental anxiety. For example, the dentist’s past experiences with dental anxiety will affect how he can identify those patients and the signs of dental anxiety. The values and beliefs of the dentist determine how sympathetic and important he or she feels it is to take care of all the patients’ needs. The amount of time the dentist has outside of work hours to improve the practice and the techniques affect how fast or if changes are made. The dentist’s prior knowledge, training and years in practice are important in influencing his or her ability to address dental anxiety. Lastly, the cost to make improvements and changes plays a considerable role in how much the dentist can do. For example, if the dentist needs to upgrade the dental equipment and materials to make it easier on the patient, he or she would need extra finances to do so. Many times, dentists start off on their own and are in debt because they need to pay for the office, supplies, equipment, patient records and staff just to run the business.

In Figure 6, the thin, unidirectional arrow indicates the influence of the community and media on the dentist. The community and media do not often address the topic of dental anxiety; however, they do cover more information on esthetic dentistry and the spa experience. The thick bi-directional arrow shows the relationship of peers and family on the dentist. The peers and family share their prior experiences at a dentist, which influence the dentist to think about how he or she would like to be perceived. For example, if a peer or family member has shared a
Dental Anxiety

horrible dental experience which caused dental anxiety, the dentist would probably not treat his or her patient the same way. Also, if a peer or family member shares a great experience, the dentist may remember it and implement it in his or her practice. The dentist’s values and beliefs affect how he or she interprets these experiences and how improvements can be made.

System

The system consisted of the factors that directly affect the dentist in the office. As seen in Figure 6, the dentist is the center of the system. Factors within the system that contribute to the dentist’s ability to provide pleasant dental experiences are the environment, equipment, office staff, and practice techniques. The unidirectional thick arrow indicates how the environment affects the dentist. The environment consists of the aroma and sound of the office; if these factors affect the patients’ feelings prior to treatment the dentist will have more difficulty implementing other improvements. For instance, many patients comment on the unpleasant scent of a dental office. In addition, hearing the sound of the drill while sitting in the waiting room will affect an anxious patient. The unidirectional thick arrow also shows how the equipment plays an important role in the dentist ability to minimize dental anxiety. For example, old equipment such as a hard chair and the bracket table right above the patient can already make an anxious patient uncomfortable before any treatment begins. The bi-directional thick arrow indicates how the office staff influences the way the patient perceive the office, which indirectly affects the dentist. In order for the dentist to be able to minimize dental anxiety, the patient must have a good relationship with and trust the office staff. If the office staff is rude or busy and does not treat the patient with undivided attention prior to entering the treatment room, this will impact the level of the patient’s anxiety. The unidirectional thick arrow specifies how the techniques affect the dentist’s ability to address dental anxiety. For example, with the older
techniques, pain management was not a technique that was taught. The quicker the dentist injects the anesthetic solution into the oral tissues, the more painful it will be. All parts of the system impact the dentists’ ability to address and manage a patient with dental anxiety.

Suprasystem

The suprasystem consists of two entities, the professional organizations and dental schools, as seen in Figure 6. The professional organizations keep the dentist updated with the current techniques, equipment, supplies and research methods. The main local organization is the Hawaii Dental Association (HDA). This organization holds annual meetings to allow dentists to keep current with continuing education. The other entity of the suprasystem is the dental school. The school the dentist has graduated from affects his or her knowledge, and ability to manage a patient with anxiety. For example, if the school teaches the current practices to help decrease dental anxiety, the dentist will have an easier time implementing strategies to reduce dental anxiety. However, if the dentists were not trained with the improved techniques, they may need to take more courses and time to make improvements to their practices. The thick unidirectional arrow indicates the strong influence the professional organizations and dental schools have on the system and the dentist.

Design of the Instructional Module

The module was created in paper-based format and consisted of three chapters that covered training dentist practitioners on characteristics of patients with dental anxiety and factors that help manage dental anxiety. The three chapters of the instructional module were dental anxiety assessment, modified environment and patient management. A pretest and posttest was developed and consisted of management and preventive techniques of dental anxiety.
Throughout the module, questions helped to reinforce learning for the dental practitioners. The instructional module also included a feedback section.

A paper-based module was chosen because the instructional designer felt it would be the most effective for dental practitioners who are not comfortable with computers. Dentists are usually very busy and the instructional designer wanted to deliver the module in the most convenient way for them. The dentists were able to complete the module at their convenience and could take it home if needed. Dentists are comfortable with paper-based texts because they often read professional journals to update their knowledge.

Systems Approach Model

The Dick and Carey Systems Approach Model was used as a framework for Instructional Design of this project (Dick, Carey, & Carey, 2001). The model for instructional design requires ten steps to follow.

The very first step in the Dick and Carey’s systematic design of instruction was to identify the goals. Identifying the goals was the most important part of the process because clearly written goals facilitate the writing of the specific objectives. The goals are a foundation to build on and work towards. Objectives make learning and content specific, and allow the instruction to stay focused.

The second step is the content analysis. It is important to look at the content and be able to match the items in the content with the goals and objectives so that they are parallel. When analyzing the content, it is important to define the domain of learning in order to know the strategies for instruction. The psychomotor, cognitive and affective domains all have different areas of focus. The psychomotor domain includes all physical skills. The affective domain is
important because it addresses the feelings, attitudes and values involved. The cognitive domain is the thinking portion of a task, such as the knowledge required.

The audience analysis is the third step; this was where the instructional designer should identify what the audience already knows. This helps to guide an instructional designer as to where to begin and how to design the instruction based on the needs of the audience. The audience and content should be parallel.

The fourth step is writing the objectives; the objectives needed to be parallel with the goals because they help to guide instruction and develop lesson plans for the intended audience. Performance objectives are important in the process because they are measurable and reflect the domain of learning. They basically list all the objectives that need to be met to reach the goal. They also need to be detailed so that they are measurable, replicable, specific and observable.

Developing the test is the fifth step of instruction and should be done prior to any lesson plans. It helps to determine what the learners need to learn. Developing the tests also helps to assess whether the tests measure what is intended to be measured. It is important to see whether the test matches the goals and objectives so a criterion can be established. Tests show progress, demonstrate if the system is working, provide accountability, improve instruction, and depict how the teacher and student are doing.

The sixth step is to develop the instructional strategy. After the test was developed, the instructional designer needs to develop a plan for the learners. It is important for the instructional designer to think about the strategies that are to be used. There are inductive and deductive strategies, examples and non-examples, and Gagne’s Nine Events of Instruction (Gagne, Briggs, & Wager 1992). Strategies are important in motivating the learners. One
should guide the learner to learn, and one wants to make sure the strategy ties directly into the domain targeted. The strategies also need to be effective for learning.

Developing materials is the seventh step, and this step requires a lot of time, money and effort from the instructional designer. It is critical to know how much time and money are available prior to the development of materials. The materials that were used in the instruction, such as printed materials and folders, were developed in this stage.

The eighth step is formative evaluation and generally it is a long process that requires a lot of patience. Feedback from peer reviews, one-on-one sessions and small group testing suggested needed revisions to the project. Reviewing the content, process, and format is essential for successful instructional design. Constant revisions in this process aid in pointing out detailed mistakes. Every step in the process is essential for the final product.

The second-to-the-last-step in this process is to revise. In order to make revisions, it was important to receive feedback from the formative evaluation to help improve the materials and instruction. Reviewers help to create a much more effective module. Revision is the most important piece of the formative evaluation. Revising allows the final product to be polished and to be the most effective.

Lastly, the summative evaluation is important because it allows analysis of instruction within the system. Careful analysis of the guidelines, standards, training, materials and courses helps to determine if the information is actually doing what the instructional designer intended it to do. Also, it helps to make sure the system matches what you are doing. However, due to time constraints, the summative evaluation was not done.
Software & Hardware Requirements

There were minimal software requirements for this project and no hardware requirements. A Sony digital camera was used to photograph the dental office, chair, and equipment. Infranview was the software that was downloaded to resize the photos. Since the module was paper-based, Microsoft Word and a color printer were used to prepare the module. No other software and hardware requirements were necessary.

Participants

Content Expert

Prior to creating the instructional module, the instructional designer asked one individual to be the content expert. The content expert in this project consisted of the dental hygiene chairperson at a local university for 15 years. She was also an instructor in the dental hygiene program for 28 years. She has taught numerous courses in Dental Hygiene such as Dental Hygiene 231 (Tooth Morphology and Head and Neck Anatomy), Dental Hygiene 240 (Basic Dental Hygiene), Dental Hygiene 361 which is cross listed with Nursing 361, Dental Hygiene 375 and 380 (Clinical Dental Hygiene and Patient Management), Dental Hygiene 473 (Community Health), Dental Hygiene 475 and 480 (Clinical Dental Hygiene). The content expert assisted the instructional designer in developing test questions for the instructional module. She reviewed all content and format in the instructional module and suggested revisions where needed. The instructional designer made all revisions recommended by the content expert. Her expertise in Dental Hygiene and Patient Management made her well qualified in helping to develop all content in the instructional module.
**Target Population**

The intended target population for this instructional module was a group of dental practitioners in the State of Hawaii who owned their own practice and had at least five years of working dental experience. Dental practitioners who owned their practice were able to implement more changes than those that did not because they had the freedom to make the changes. A dentist who has an associate would usually have to consult with the associate for approval of changes in the practice. Also, a dentist with an associate would probably have a larger staff so it would be more difficult to implement changes. Work experience of more than five years seems to be an adequate amount of time for dentists to establish themselves and a solid practice. In addition, the dentist has probably worked with a number of patients with dental anxiety at this stage in his or her career. According to the 2001 records of the Hawaii State Department of Commerce and Consumer Affairs Professional and Vocational Licensing Division licensing branch, 1,352 dentists were licensed in the State of Hawaii. There was a wide range of dental practitioners, consisting of males and females from various ethnic backgrounds.

**Sample Population**

The sample population consisted of nine dental practitioners who had practiced dentistry for at least five years. All dental practitioners in this sample population consisted of ones who owned their own practice. The instructional designer selected the dentists according to two criteria: (a) five years of experience and (b) owned their own practice. Dentists who owned a more modern practice would probably be more likely to learn from the module because it indicates their attitude toward their practice. A dentist who owns a modern office is usually a younger dentist and is willing to invest more time and money in making changes and improvements. An older office is probably owned by an older dentist who would not be as
flexible to change and improvements especially if the dentist is closer to retirement. Prior to
beginning this instructional module, it was required that the dentists have successfully completed
dental school and have a professional license in the State of Hawaii. The dentists needed to
possess the reading, writing, and comprehensive skills to successfully complete this module.
The dentists were required to complete all parts of this module. Due to time constraints, the
module was provided for the dentists to take home.

Committee for the Protection of Human Subjects

Consent was needed to be obtained from the University of Hawai‘i, Committee on
Human Studies (CHS) prior to conducting any instruction (refer to Appendix D). The Expedited
Form was not needed to be filled out since there were no photos of human subjects used in the
module. All consent forms, instructional instruments, copies of this proposal, and surveys were
submitted to the committee to obtain consent for this project. After approval was received,
consent forms were given to all participants to sign and return (refer to Appendix H).

Formative Evaluation

One-on-One Content Expert

The one-on-one session with the content expert was done in an informal setting. The
instructional designer and content expert discussed the content of the instructional module and
questions were asked in a semi-structured interview. The content expert felt the module needed
some revisions in wording of some test items and descriptions in the module. Revisions were
made prior to presenting it to the one-on-one target population.

One-on-One Target Population

The one-on-one in this project consisted of a dentist who has been practicing for 20 years
and has owned her own office for 10 years. She has also been an instructor in the dental hygiene
Dental Anxiety

department at a local university for 17 years. She provided detailed comments within the instructional module. The instructional designer asked her questions in a semi-structured interview to ensure information was delivered effectively to the learner in the instructional module. She felt the module was excellent and she said it made her start thinking about incorporating the questions in the module in her office. For example, she stated that she would like to start asking and assessing patient concerns and experiences over the phone rather than at the first appointment. She felt that she could also utilize all of the techniques discussed except for the fragrances. The instructional designer made all necessary revisions to the module based on the comments and feedback provided by the content expert.

Small Group - Dental practitioners

The small group consisted of nine dental practitioners who are currently practicing dentistry in their own office. Prior to the instructional module, the dentists were given a demographic survey (refer to Appendix E). The instructions were provided in the instructional module so that it was consistent. Since dental practitioners are already really busy, the pretest, module and posttest were given to them to take at a convenient time and were returned to the instructional designer within a week. The pretest and posttest took approximately 30 minutes each to complete. After all dentists completed the instructional module, they were given an attitudinal survey (refer to Appendix F).

Tasks of the Instructional Designer

There are a number of tasks that the instructional designer had to complete prior to completion of this project. The instructional designer had to decide on a specific topic and write an idea paper on it. The idea paper consisted of two pages and was due on April 13, 2005, along with a follow-up group interview with five members of the Educational Technology faculty. The
faculty provided feedback during the interview and asked questions about the plans for the project. After an approval was received, an advisor was assigned to each Master’s student. A meeting was arranged with the assigned advisor on plans for the next step of the project and the overall recommended deadlines. The advisor recommended the instructional designer create a timeline, working from the end to the start to ensure adequate amounts of time for each subtask (refer to Appendix G).

The next step was to develop a proposal which consisted of three chapters (a) introduction of the project, (b) literature review and, (c) methodology. This proposal was turned in to the advisor on August 21, 2005. The advisor reviewed the proposal; based on the advisor’s feedback, revisions were made and the proposal was resubmitted. Fortunately, the instructional designer was advised to take a course in the summer to assist in preparing the first three chapters. Throughout this course, the instructor set deadlines and papers were reviewed and given feedback for revisions. During this course, the instructional designer also completed the Human Subjects Consent Form to be submitted later to University of Hawaii Committee on Human Subjects.

Additional tasks of the instructional designer included developing the instruction; obtaining individuals needed to test and provide feedback for the instruction; gathering and analyzing the data; and presenting the findings.

Tasks of the Participants

The content expert, one-on-one and the small group learners were all important participants in this project. Each participant was assigned specific roles.

The content expert assisted the instructional designer in the overall content of the project. The content was critical to the learner, so the content expert helped to review the content of the
project and the revisions were made accordingly. The one-on-one learner was a dentist who owned her own practice and was the first to test the module. Here, the learner was able to take the module and make any necessary comments and feedback she felt was needed to improve on the module. The small group learners were a part of the experimental group where data were gathered. The data from this group, after taking the module, were gathered and analyzed.

Data Analysis

The instructional designer analyzed the feedback from the one-on-one with the content expert and one-on-one learner and made revisions to the instructional module. The small group data were analyzed to evaluate the overall success of the module. Data gathered from the pre-tests were used to evaluate how much knowledge the dental practitioners had prior to beginning the module. The post-tests were used to evaluate how much knowledge the dental practitioners gained after completing the module. Both pretest and posttest scores were compiled to analyze the effectiveness of the module. Data were gathered and analyzed from the demographic and attitudinal survey.

Limitations and Assumptions

This instructional module contained some limitations for the dental practitioner. It covered the cognitive approach to management and prevention of dental anxiety. It would be up to the dental practitioners to implement some of the techniques and management practices into their offices. Since many dental practitioners are very busy, the module was given to the dental practitioner to take home to complete. It was assumed that all dental practitioners taking the module were currently licensed and could read and write at the college level. Lastly, in selecting the target population, the following assumptions were made: (a) dentists who own their own office are more likely to make changes; (b) five years of experience are sufficient to build a
practice and be ready to implement improvements; (c) dentists working in newer or more modern offices are more likely to invest in further changes to help their clientele with dental anxiety, whereas a dentist who owns an older practice and who has not made any changes may not be interested in the investment of time and money.
Chapter IV
DATA ANALYSIS

Small Group Demographic Data

There were nine dentists who consented to participate in this instructional design project (refer to Appendix H). All dentists were informed that information would be anonymous and the study was to test the effectiveness of the module. Prior to beginning the instructional module, the dentists were asked to fill out a demographic survey and the results from this survey are located in Table 1. After completion of the demographic survey, there was a brief introduction section in the module.

Table 1

<table>
<thead>
<tr>
<th>Demographic Survey Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
</tr>
<tr>
<td>(6) 36-50</td>
</tr>
<tr>
<td>(3) 51-65</td>
</tr>
<tr>
<td>What is your gender?</td>
</tr>
<tr>
<td>(8) Male</td>
</tr>
<tr>
<td>(1) Female</td>
</tr>
<tr>
<td>Is English your first language?</td>
</tr>
<tr>
<td>(9) Yes</td>
</tr>
<tr>
<td>(0) No</td>
</tr>
<tr>
<td>How many years of experience do you have in dentistry?</td>
</tr>
<tr>
<td>(2) 11-15 years</td>
</tr>
<tr>
<td>(3) 16-20 years</td>
</tr>
<tr>
<td>(4) more than 20 years</td>
</tr>
<tr>
<td>Do you consider your practice a modern office and on the cutting edge of technology?</td>
</tr>
<tr>
<td>(6) Yes</td>
</tr>
<tr>
<td>(1) Not Yet</td>
</tr>
<tr>
<td>(2) No</td>
</tr>
<tr>
<td>If “yes” to question #6, what types of things in your office would be considered modern?</td>
</tr>
<tr>
<td>(4) Digital radiographs</td>
</tr>
<tr>
<td>(3) computerized operatories</td>
</tr>
<tr>
<td>(1) Cad &amp;cam restorations</td>
</tr>
<tr>
<td>(1) Computer charts</td>
</tr>
<tr>
<td>(1) Digital photos in charts</td>
</tr>
<tr>
<td>(1) Facility &amp; design new 2001</td>
</tr>
<tr>
<td>(3) Soft tissue laser</td>
</tr>
<tr>
<td>(1) Brite Smile Whitening</td>
</tr>
<tr>
<td>(1) Computers,</td>
</tr>
<tr>
<td>(1) Imaging and photography</td>
</tr>
<tr>
<td>(1) Intraoral pictures,</td>
</tr>
<tr>
<td>(1) Water filtration system</td>
</tr>
</tbody>
</table>

Table 2
Demographic Survey Data cont.

<table>
<thead>
<tr>
<th>Have you ever had a patient who was dentally anxious?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(9) Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If “yes” to question #8, estimate the percentage that is currently in your practice?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5) 10%</td>
</tr>
</tbody>
</table>

Describe what you call a relaxing dental visit?
1. When a pt is so comfortable, they fall asleep in the chair when work is being done
2. Stress free due to divisions such as music or watching a DVD
3. Pt doesn’t mind injections, able to get numb easily, may fall asleep during visit
4. When a patient isn’t totally focused on the dental tx being done or when pt falls asleep in the chair.
5. Watching a video with DVD glasses
6. Strolling to the chair, accepting anesthesia well, having dental work done without complication, nearly falling asleep.
7. Doing a routine recall appt and pt is comfortable throughout the appt
8. Pt come in happy & leaves happy
9. One where the procedure is done and the patient is comfortable and a thorough procedure

What percentages of patients cancel appointments and the frequency?
- High frequency 2-3%
- Low frequency 75%
- 2-3x/wk
- 2%
- 5%
- 10-20% both patients and frequency
- 5% not often
- 10%
- 8-15% of pts-same pt 50% of the time
- Less than 1% 2-3 months

There were 6 dentists between the age of 36-50 and 3 dentists between the ages of 51-65. Out of the 9 dentists, 8 were male and 1 was a female. English was the first language for all participating dentists. There were 3 dentists who had 16-20 years of experience, 2 had 11-15 years, and 4 had more than 20 years. Three dentists felt that they did not have a modern office and six felt they had a modern office on the cutting edge of technology. The dentists who felt
they had a modern office responded about the different types of things they felt would be considered modern in their office.

Digital radiographs were mentioned by four dentists, computers in the operatories were mentioned by three dentists and lasers were mentioned by three dentists which are equipment of a modern office. One dentist mentioned having computers, however, did not specify them being in the operatory. One dentist listed Brite Smile whitening. Intraoral pictures, imaging and photography, digital photos in charts, cad and cam restorations all were mentioned by four different dentists; however, they fall under having digital photos. One dentist mentioned a water filtration system. Another dentist noted having computer charts and a new facility and design since 2001. All of the dentists had patients who were dentally anxious; 5 dentists said 10% of patients who are currently in their practice and 4 dentists said 25%. One of the questions in the demographic survey asked to describe what they would call a relaxing dental visit. Table 2 lists the answers from each dentist to question #10 in the demographic survey which was to “describe what you would call a relaxing dental visit.”

Test Data Analysis

General Test Information

All dentists took the tests at their own convenience. They were given a pre-test and post-test which consisted of 20 questions (refer to Appendix I). There were 11 multiple choice and 9 short answer questions. The questions where the dentists had to list their answers were scored based on “all or nothing.” In other words, credit was not given if one answer was missed.
Comparison of Pre- and Post-Test Scores by Objectives

The instructional designer found several anomalies when comparing the pre-test and post-test scores by objectives. Of the 20 questions, one anomaly was Objective 5, which had a decrease in the post-test score compared with the pre-test score. In this objective, the pre-test score was 100% and the post-test was 78% because two dentists answered the question wrong on the post-test as shown in Figure 7. For Objectives 5 and 19, all dentists scored 100% on the pre-test. Also for Objectives 1, 3, 4, 11, 12 only one of the dentists missed this question on the pre-test. These objectives could have been entry level behaviors which is why only a few were missed. These test items were multiple choice and could have also meant it was easier to do.

Another anomaly was in Objectives 1, 2, 3, 4, 9, 11, 12, 13, 17, 19 and 20; all scores were 100% on the post-test. Also, Objective 19 was the only test item where there was a score of 100% on both pre-test and post-test scores. This objective probably could have been an entry level objective. On Objectives 6, 7, 8, 9, 14, 15, 16, 17, 18 all pre-test scores were 0%. This probably occurred because these were all the short answer questions and credit was only given if all answers were right. Objectives 8 and 18 had the least improvement from the pre-test to the post-test which was 44% as shown in Figure 7 and 8. All list questions seemed the most difficult for the dentists in the pre-test.
Figure 7. Comparison of pre- and post- test scores by objectives bar chart

Figure 8. Comparison of pre- and post- test scores by objectives bar chart cont.
Figure 9. Comparison of pre- and post-test scores by objectives line chart

Figure 10. Comparison of pre- and post-test scores by objectives line chart cont.
Comparison of Pre- and Post- Test Scores by Participants

The range of improvement from the pre-test to post-test scores by participants was from 15% to 55%. All dentists scored 55% or less on the pre-test and improved on the post-test. Only one dentist scored 65% on the post-test and all others scored 75% or more. On the post-test, 1 dentist scored 75%, 1 dentist scored 80%, 3 dentists scored 90%, 1 dentist scored 95% and 2 dentists scored 100%. The lowest score on the pre-test was 25% and that was completed by a dentist who does not consider his practice to be a modern one as shown in Figure 11. Also, he was the one who took the instructional module on the airplane to complete. However, his score on the post-test was 80%, which showed great improvement. According to the data, it seems that the instructional module was effective in improving the dentists’ cognitive knowledge about management and prevention of dental anxiety.
Figure 11. Comparison of pre- and post- test scores by participants bar chart.

Figure 12. Comparison of pre- and post- test scores by participants line chart
Attitude Survey Data

Upon the completion of the instructional module, all participants were asked to fill out an attitudinal survey. The data of the survey, along with responses, are summarized in Figure 13.

The attitudinal survey was a Likert-type scale with ranked responses “Strongly Agree,” “Agree,” “Undecided,” “Disagree,” and “Strongly Disagree.” At the bottom of the survey, participants were able to write additional comments. Only five out of the nine dentists wrote additional comments. Two of the dentists preferred multiple choice questions because they felt the short answer questions were too hard and took too much time to complete.

The attitudinal survey showed that majority of the dentists were positive about the dental module. There were no responses as “Disagree” and “Strongly Disagree.” However, a few dentists dentists “undecided” for questions 1-4, 7, 9-11. Two dentists also felt there was not enough time to complete the module. One of them was the dentist who wanted multiple choice questions and improved only by 15% from the pre-test to the post-test. The other dentist was the one who just wanted to take his time in completing the module. His comment was, “Sorry I didn’t have enough time to spend on this as I would have liked to.”

<table>
<thead>
<tr>
<th>Content and Layout:</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The instructions were clear and easy to understand.</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The module was useful to me.</td>
<td>4</td>
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<td>3. The module was interesting.</td>
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<td>4. The module was clear.</td>
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<td>5. The module was easy to read.</td>
<td>7</td>
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<td>6. The questions were appropriate for the topic.</td>
<td>7</td>
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<tr>
<td>7. The information presented in each segment helped to answer the test questions.</td>
<td>6</td>
<td>1</td>
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<td>8. The terms in the module were adequately defined.</td>
<td>8</td>
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<td>9. The techniques in the module adequately represented the topic.</td>
<td>6</td>
<td>1</td>
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</table>
10. There was adequate time to complete the module.  
   6 1 2

11. The examples helped me to understand the module.  
   6 2 1

12. The feedback provided was useful to me.  
   6 3 1

13. The instruction followed a good sequence.  
   7 2 1

14. The pictures in the module were helpful.  
   8 1 1

**Figure 13.** Results of Attitudinal Survey

Additional Comments:
“Sorry, I didn’t have enough time to spend on this as I would have liked to.”

“Seemed somewhat repetitive.”

“Need more space to answer some questions-exercise #3 question 5 doesn’t match answer feedback (2 different questions), question #4 should be six instead of 7.”

“Listing was hard-took time-not enough space, Module was easy to read but questions especially listing was difficult, Multiple choice may be easier to reinforce concepts.”

“Leave more room for “list” type answers, Most docs would rather not list but just circle answers.”
Chapter V

DISCUSSION

The data analyzed and collected from the instructional module show that all dentists improved their knowledge of management and prevention of dental anxiety. Although dentists have been educated about dental anxiety, the instructional module gave them alternate ways in management and prevention.

Notable Findings

There were several notable findings the instructional designer was able to identify from the data analysis. Although six out of the nine dentists felt their dental office was modern or on the cutting edge of technology, their scores improved from the pretest to the posttest. Two of the dentists felt that the tests were too hard because the tests required listing answers, which took too much time, and they preferred multiple choice questions to writing responses. When creating the instructional module, the instructional designer was concerned the tests would be too simple; however, having short answer and list type questions made the tests much more challenging for the dentists. Most answers that were wrong fell into the short answer and list type questions.

Recommended Revisions

Four dentists had recommended revisions in the comments section for the attitudinal survey. Two recommendations were to have all multiple choice questions to reinforce concepts and make the test easier to do. Three dentists also recommended leaving more space for list type answers. Another dentist said the module was somewhat repetitive. Lastly, one dentist found two errors in the module which were that exercise #3 question 5 did not match answer feedback; there were two different questions, and question #4 should be, “list six” instead of “list seven.”
Reflections

After analyzing the data, the instructional designer noticed two of the dentists who felt their practice was not modern, scored 50% and 25% on the pre-test as opposed to 65% and 80% on the post-test. This was an important observation because it also showed that it is possible the dentists lack of interest in the techniques provided. Another observation was that the dentist who felt the listing questions were too hard and long was the only one whose score improved only 15% from the pre-test to the post-test. Therefore, the instructional designer feels that the attitude of the dentist may have impacted his performance on the tests as he was probably discouraged because he had to write so much. Although multiple choice questions were preferred by two dentists, the instructional designer felt having listing questions helped the dentist to think about their approach to management of patients with dental anxiety. Another dentist scored only 75% on the post-test; however, this was one of the dentists who had only one day to complete the module, so the instructional designer felt it is possibly because he rushed through it. All remaining dentists had 90% and higher on the post-test. The improvement from pre-test to post-test demonstrates the instructional module was effective for the learner.

Future Developments

As mentioned in this project earlier; the instructional designer found that dentists who have a modern office possess a better attitude towards management and prevention of dental anxiety. The reason for this may be because dentists with a modern office probably would be willing to invest more money and be more flexible to changes. Whereas, dentists with older offices would not want to invest more money or make changes, especially if they are close to retiring.
This module could be developed to include more chapters and ways to manage patients with dental anxiety; however, due to time constraints there were only three chapters. For example, a chapter could be on treatment planning and how to communicate with patients. Another possible development would be to have all the checklists laminated for use in the dental operatory for easy reference and disinfection.

Summary

What Worked

Although the instructional designer had a busy schedule, setting priorities helped to accomplish and meet deadlines in a timely manner. Creating a timeline and meeting with the advisor regularly also helped to solve any problems early. The advisor always informed the instructional designer of deadlines which included turn around time and revisions.

What Did Not Work

Due to time constraints, the instructional designer was only able to have one dentist review the instructional module for the one-on-one session. Also, only nine dentists instead of twelve were available and able to take the instructional module.

What Went Well

Although the instructional designer had a busy schedule, she was able to complete the paper-based instructional module and deliver it to all participating dentists. Having a paper-based module was much more convenient for all dentists because they were able to complete the instruction anywhere and at their convenience. One dentist had to attend a seminar in Missouri and was able to take the module with him on the trip and complete it on the airplane.
What Went Wrong

The instructional designer faced several problems when putting the paper-based instructional module together. One problem was the computer used for creating the instruments for this project broke due to water damage during the early months of this project. The instructional designer had some delay in completing the project while a new computer had to be purchased. Along with the new computer, a trial version of Microsoft Word was used and the instructional designer forgot to download the actual software after it expired in February. Therefore, some of the revisions made on the date after expiration was not on the final instructional module. Another problem was that during the printing process of the instructional module, the printer ran out of black ink which also delayed the delivery of the module.

Initially, the dentists were supposed to have one week to complete the module; however, due to time constraints of the dentist and instructional designer, some of them only had one to two days to complete it. One dentist commented he wished he had more time to spend on the module than he actually did.

Next Time

The instructional designer would like to have started with the project earlier. Initially, the instructional designer was not planning to complete the project by the end of this semester due to pregnancy. Therefore, the initial months of work was condensed into a shorter period of time which made it stressful for the instructional designer and required more work for her advisor. Fortunately, great support from her advisor and the department chair allowed the instructional designer to complete the project in a timely manner.

Also, next time, the instructional designer would do more careful planning and communication with all participants. Two of the dentists were leaving on a trip and wanted to
complete the module before they left. Unfortunately, they had to complete it within a day’s time after delivery of the module. Good communication and organization would have given the dentists more time and would have been less stressful for the instructional designer.

What To Continue

The instructional designer would like to continue improvement on the module and possibly expand the chapters. “Revise, revise, revise” is one of the most important principles taught in Educational Technology and no matter how many people have reviewed the instructional module, there is always room for improvement. The instructional designer would like to share the instructional module with other dentists. Also the instructional designer would like to share it again with the dentist who participated in this project and who wished he had spent more time on it. Lastly, the instructional designer would like to implement the instructional module into the current dental office where she works.
REFERENCES


Krochak, M. D.D.S., Dental Phobia Treatment Center. Retrieved on July 23, 2005 from
http://www.dentalfear.net


http://www.dentaleyberweb.com/dental-web/articles/dentist-9702.html

http://journalism.berkeley.edu/ngno/stories/003079.html


**APPENDIX A**

Instructional Strategy Plan.

<table>
<thead>
<tr>
<th><strong>Pre-Instructional Activities:</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Motivation:</strong> All dentists who own their own modern dental practice for at least five years are highly motivated, willing to learn and optimistic. The dentists will also be motivated to complete this module because successful completion will help guide them in their practice to manage and prevent patients with dental anxiety.</td>
</tr>
<tr>
<td><strong>Objectives:</strong> The objective of this module is for the dentists to be able to manage and prevent patients with dental anxiety. The dentists will learn how to identify characteristics of patients suffering from dental anxiety and factors that help manage patient with dental anxiety.</td>
</tr>
<tr>
<td><strong>Prerequisite Skills:</strong> Prior to beginning this instructional module, it is required that the dentists have successfully completed dental school and have a professional license in the State of Hawaii. The dentists will need to possess the reading, writing, and comprehensive skills to successfully complete this module. The dentists will be required to complete all parts of this module.</td>
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<tr>
<th><strong>Testing:</strong></th>
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<tr>
<td><strong>Pretest:</strong> The pretest consists of multiple choice, fill in the blank and short answer questions. These assessments will be administered prior to the instructional module to find out prior knowledge and skills dentists possess prior to beginning the instructional module.</td>
</tr>
<tr>
<td><strong>Posttest:</strong> The posttest consists of comparable multiple choice, fill in the blank and short answer questions. Completion of the posttest will demonstrate how much the dentists have learned from the instructional module.</td>
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<tr>
<th><strong>Follow-up activities:</strong></th>
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<tr>
<td><strong>Remediation:</strong> Dentists will be allowed to review all errors and materials. This will allow dentists to view any errors made and learn from them.</td>
</tr>
<tr>
<td><strong>Enrichment:</strong> Being able to view modules, materials and errors made will help dentists to continue learning the management and preventive techniques for patients with dental anxiety. Further implementation in private practice will give the dentists more experience in management and prevention of dental anxiety.</td>
</tr>
</tbody>
</table>
### Cluster 1

**Title:** Characteristics of patients with dental anxiety  
**Learning Time:** 30 minutes  

**Objectives:**  
1. Define dental anxiety.  
2. Identify the initial step of dental anxiety assessment.  
3. Identify a patient who may be anxious about dental treatment.  
4. Identify a patient’s behavior who best expresses signs of fear.  
5. Identify patients who exhibit white-coat syndrome.  

### Cluster 2

**Title:** Factors that help manage dental anxiety  
**Learning Time:** 30 minutes  

**Objectives:**  
7. Describe appealing office design.  
8. Identify five distracters that can be used in the dental office for an anxious dental patient.  
9. Describe four different types of aroma.  
10. Describe five important factors to remember about dental equipment and chair positions.  
11. Describe equipment which decreases stressors and increases comfort.  
12. Describe dental stimuli that evoke dental fear.  
13. Identify good communication skills.  
14. Identify the four new patient questions the receptionist should ask on the phone.  
15. Identify the four emergency patient questions the receptionist should ask on the phone.  
16. Identify the four key points when addressing patients concerns.  
17. Identify the four techniques on attentiveness when communicating with a patient.
APPENDIX C

Application for New Approval of a Study Involving Human Subjects
University of Hawai‘i, Committee on Human Studies (CHS)
Spalding Hall 253, 2540 Maile Way, Honolulu, Hawai‘i 96822
Telephone: (808) 956-5007

Date: July 12, 2005
PI (name & title): Kari Sing Chow Email: ksnakaso@hawaii.edu Phone: 428-1550
Department: Educational Technology
[ ] Faculty or Staff [ X ] Student - name of supervising professor: Dr. Shirley Yamashita
Training in Human Subject Protection: When, where, & what? n/a

Project Title: An Instructional Module for Dental Practitioners on Management and Prevention of Dental Anxiety
Proposed Sponsoring Agency: University of Hawaii Department of Educational Technology
Start Date: 09/01/05
Complete Agency address: 1776 University Ave., Wist Hall 232 Honolulu, HI 96822

1. Summarize your proposed research. Outline objectives and methods.

The project objective will be to provide an instructional module for dental practitioners on management and prevention of dental anxiety. Individuals who suffer from dental anxiety and avoid visiting their dentist on a routine basis, tend to develop dental diseases including dental caries, gingivitis, periodontitis, tooth loss, resulting in further decrease in dentist-patient relations and possibly increasing the cost for treatment. To address the needs of this patient population, dentists need appropriate training, including consultations, chair side manner, office design, modified environment and patient management to help combat dental anxiety. The desired outcome of this module is that dental practitioners will apply the knowledge and skills presented in the module to their current practices to reduce dental anxiety, encourage patients to visit the dentist on a routine basis and improve oral health.

The goal is that patients will be more at ease during their dental visit, more likely to return for routine maintenance and will know what to expect at the dentist. Some patients may even be curious of the new techniques and will be willing to at least attempt visiting the dentist. A pretest and posttest will be administered to determine how much the dental practitioners learned from the module. The data will be analyzed at the conclusion of this project to show effectiveness of the instruction.

2. Summarize all involvement of humans in this project (who, how many, age, sex, length of involvement, frequency, etc.) and the procedures they will be exposed to. Attach survey instrument, if applicable.

The small group involved in the testing of the module will consist of 12-15 dental practitioners’ currently practicing dentistry in their own office. The dental practitioners will be given the module to complete on their own time within a week. Since dental practitioners are
already really busy, the pretest, module and posttest will be given to them to take at a convenient time. The pretest and posttest will take approximately 30 minutes to complete. All participants will be given one week to complete the module. A demographic survey (see attached) and an attitudinal survey (see attached) will also be given.

The content experts in this project will consist of two female dental patients, aged 35-45, who have dental anxiety and one female instructor, age 50, who teaches management of dental anxiety. The two patients who were selected have already volunteered to participate in this project. Content experts will provide comments on the side of the document margins. The instructional designer will ask the content experts questions in a semi-structured interview on their comments and feedback to ensure information is delivered effectively to the learner. The designer will make necessary revisions to the module based on the comments and feedback.

Check whether any subject of your research will be selected from the following categories:

- [ ] Minors
- [ ] Pregnant Women
- [ ] Mentally Disabled
- [ ] Fetuses
- [ ] Abortuses
- [ ] Physically Disabled
- [ ] Prisoners

3. Research involving humans often exposes the subjects to risks: For the purpose of this application, "risk" is defined as exposure of any person to the possibility of injury, including physical, psychological, or social injury, as a consequence of participation as a subject in any research, development, or related activity which departs from the application of those established and accepted methods necessary to meet his needs, or which increases the ordinary risks of daily life, including the recognized risks inherent in a chosen occupation or field or service.

a. Check all the risks to human subjects that apply to your project:
- [ ] Physical trauma or pain
- [ ] Deception
- [ ] Experimental diagnostic procedures
- [ ] Side effects of medications
- [X] Loss of privacy
- [ ] Experimental treatment procedures
- [ ] Contraction of disease
- [ ] Worsening of illness
- [ ] Other – explain
- [ ] Psychological pain
- [ ] Loss of legal rights

b. Check procedures that will be used to protect human participants from risks:
- [ ] M.D. or other appropriately trained individuals in attendance
- [ ] Sterile equipment
- [ ] Precautions in use of stressor or emotional material (explain below)
- [ ] When deception used, subjects fully informed as to nature of research at feasible time (explain below)
- [ ] Procedures to minimize changes in self-concept (explain below)
- [X] Confidentiality of subjects maintained via code numbers and protected files
- [ ] Anonymity - no personally identifiable information collected
[X] Others-- explain

Consent forms will be signed and obtained from all dental practitioners and content experts participating in this project.

c. Has provision been made to assure that Human Subjects will be indemnified for expenses incurred as a direct or indirect result of participating in this research?
   [X] Not applicable
   [ ] No - The following language should appear in the written consent form: *I understand that if I am injured in the course of this research procedure, I alone may be responsible for the costs of treating my injuries.*
   [ ] YES, explain:

d. Are there non-therapeutic tests that the research subjects may be required to pay for?
   [ ] Not applicable
   [X] No
   [ ] Yes - explain below. The following language should appear in the written consent form: *I understand that I may be responsible for the costs of procedures that are solely part of the research project.*

4. Describe mechanism for safety monitoring: How will you detect if greater harm is accruing to your subjects than you anticipated? What will you do if such increased risk is detected?

There may be a loss of privacy if it is necessary to provide pictures of dental practitioners or content experts. Although their identities may be exposed, there would not be of any significant consequence. Each individual will know prior to the project the risk of this loss of privacy and I do not anticipate any further increased risk. The consent form will clearly state the risk of this loss of privacy and the individual will have already approved of it.

5. Briefly describe the benefits that will accrue to each human subject or to mankind in general, as a result of the individual's participation in this project, so that the committee can access the risk benefit/ratio.

The benefits to each human subject or mankind in general is dental practitioners will be more aware of the management and preventive techniques for dental anxiety. If the dental practitioner incorporates this module into their own daily practice, it can help to reduce dental anxiety or at least encourage more people to visit their dentist. If more individuals visit their dentist on a routine basis, there could also be a decrease in gingivitis, periodontitis and caries.

6. **Participation must be voluntary: the participants cannot waive legal Rights, and must be able to withdraw at any time without prejudice.** Indicate how you will obtain informed consent:
Subject (or Parent/Guardian) reads complete consent form & signs ('written' form)
[ ] Oral briefings by PI or project personnel, with simple consent form ('oral' form).
   Explain below the reason(s) why a written consent form is not used
[ ] Other - explain

7. Are there any other local IRB's reviewing this proposal? [X] No  [ ] Yes,
   Location: __________

I affirm:
(i) that the above and any attachments are a true and accurate statement of the proposed
    research and of any and all risks to human subjects.

Signed: ___________________________  Date: __________
   Principal Investigator

Signed: ___________________________  Date: __________
   Supervising Professor (required if PI is a student)
   Date of Human Subject Protection Training: ________________

Submit the ORIGINAL plus 12 copies of this form with the following attachments:

Three (3) copies of proposal
Thirteen (13) copies of all consent forms
Thirteen (13) copies of any other information to be read or presented to the participants
Thirteen (13) copies of verbal information to be given if short form is used
Thirteen (13) copies of the survey instrument
(Please consult with the CHS staff if providing the survey instrument is a problem.)
APPENDIX D
Approval of a Study Involving Human Subjects
MEMORANDUM

February 8, 2006

TO: Kari Singh Chow
   Principal Investigator
   Educational Technology

FROM: William H. Dendle
      Executive Secretary

SUBJECT: CHS #13928—“An Instructional Module for Dental Practitioners on Management and Prevention of Dental Anxiety”

Your project identified above was reviewed and has been determined to be exempt from Department of Health and Human Services (DHHS) regulations, 45 CFR Part 46. Specifically, the authority for this exemption is section 46.101(b)(2). Your certificate of exemption (Optional Form 310) is enclosed. This certificate is your record of CHS review of this study and will be effective as of the date shown on the certificate.

An exempt status signifies that you will not be required to submit renewal applications for full Committee review as long as that portion of your project involving human subjects remains unchanged. If, during the course of your project, you intend to make changes which may significantly affect the human subjects involved, you should contact this office for guidance prior to implementing these changes.

Any unanticipated problems related to your use of human subjects in this project must be promptly reported to the CHS through this office. This is required so that the CHS can institute or update protective measures for human subjects as may be necessary. In addition, under the University’s Assurance with the U.S. Department of Health and Human Services, the University must report certain situations to the federal government. Examples of these reportable situations include deaths, injuries, adverse reactions or unforeseen risks to human subjects. These reports must be made regardless of the source funding or exempt status of your project.

University policy requires you to maintain as an essential part of your project records, any documents pertaining to the use of humans as subjects in your research. This includes any information or materials conveyed to, and received from, the subjects, as well as any executed consent forms, data and analysis results. These records must be maintained for at least three years after project completion or termination. If this is a funded project, you should be aware that these records are subject to inspection and review by authorized representatives of the University, State and Federal governments.

Please notify this office when your project is completed. We may ask that you provide information regarding your experiences with human subjects and with the CHS review process. Upon notification, we will close our files pertaining to your project. Any subsequent reactivation of the project will require a new CHS application.

Please do not hesitate to contact me if you have any questions or require assistance. I will be happy to assist you in any way I can.

Thank you for your cooperation and efforts throughout this review process. I wish you success in this endeavor.

Enclosure
# Protection of Human Subjects

## Assurance Identification/IRB Certification/Declaration of Exemption

(Common Rule)

**Policy:** Research activities involving human subjects may not be conducted or supported by the Departments and Agencies adopting the Common Rule (56 FR 39003, June 18, 1991), except the activities are exempt from or approved in accordance with the Common Rule. The section 101(b) of the Common Rule for exemptions, institutions submitting applications or proposals for support must submit certification of appropriate Institutional Review Board (IRB) review and approval to the Department or Agency in accordance with the Common Rule.

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<th>2. Type of Mechanism</th>
<th>3. Name of Federal Department or Agency and, if known, Application or Proposal Identification No.</th>
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<td>[ ] CONTINUATION</td>
<td>[ ] CONTRACT</td>
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<th>4. Title of Application or Activity</th>
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<td>&quot;An Instructional Module for Dental Practitioners on Management and Prevention of Dental Anxiety&quot;</td>
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</tbody>
</table>

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<tr>
<th>5. Name of Principal Investigator, Program Director, Fellow, or Lead Investigator</th>
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<tr>
<td>Karl Sing Chow</td>
</tr>
</tbody>
</table>

6. Assurance Status of this Project (Respond to one of the following)

[ ] This Assurance, on file with Department of Health and Human Services, covers this activity:
   Assurance Identification No. F-8826, the expiration date September 30, 2008, IRB Registration No. ORG0000169

[ ] This Assurance, on file with (agency/dept), the expiration date, IRB Registration/Identification No. (if applicable) covers this activity.

[ ] No assurance has been filed for this institution. This institution declares that it will provide an Assurance and Certification of IRB review and approval upon request.

[X] Exemption Status: Human subjects are involved, but this activity qualifies for exemption under Section 101(b), paragraph _2_.

7. Certification of IRB Review (Respond to one of the following if you have an Assurance on file)

[ ] This activity has been reviewed and approved by the IRB in accordance with the Common Rule and any other governing regulations.

by: [ ] Full IRB Review on (date of IRB meeting) or [ ] Expedited Review on (date)

[ ] If less than one year approval, provide expiration date

[X] This activity contains multiple projects, some of which have not been reviewed. The IRB has granted approval on condition that all projects covered by the Common Rule will be reviewed and approved before they are initiated and that appropriate further certification will be submitted.

8. Comments

| CHS #13928 |

9. The official signing below certifies that the information provided above is correct and that, as required, future reviews will be performed until study closure and certification will be provided.

| 11. Phone No. (with area code) | (808) 956-5007 |
| 12. Fax No. (with area code)   | (808) 539-3954 |
| 13. Email                      | dendlle@huiwall.edu |

<table>
<thead>
<tr>
<th>14. Name of Official</th>
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</thead>
<tbody>
<tr>
<td>William H. Dendle</td>
</tr>
</tbody>
</table>

10. Name and Address of Institution

University of Hawaii at Manoa
2444 Dole Street, Bachman Hall
Honolulu, HI 96822

15. Title

Compliance Officer

16. Signature

17. Date

February 6, 2006

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APPENDIX E

DEMOGRAPHIC SURVEY

1. What is your age?
   a. 28-35
   b. 36-50
   c. 51-65
   d. above 65

2. What is your gender?
   a. Male
   b. Female

3. Is English your first language?
   a. Yes
   b. No

4. If “no” to question #4, what is your first language? ______________________

5. How many years of experience do you have in dentistry?
   a. 5-7 years
   b. 8-10 years
   c. 11-15 years
   d. 16-20 years
   e. more than 20 years

6. Do you consider your practice a modern office and on the cutting edge of technology?

7. If “yes” to question #6, what types of things in your office would be considered modern?

8. Have you ever had a patient who was dentally anxious?
   a. Yes
   b. No

9. If “yes” to question #8, estimate the percentage that is currently in your practice?
   a. 10%
   b. 25%
   c. Greater than 50%

10. Describe what you would call a relaxing dental visit?

11. What percentages of patients cancel appointments and the frequency?
APPENDIX F

**ATTITUINAL SURVEY**

Thank you for taking the time to view my self-instructional module and answering the test questions. I would like to receive feedback on your thoughts about the module and test questions. Please feel free to provide any other suggestions. This feedback will assist me in revising and improving the module.

SA = Strongly Agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

<table>
<thead>
<tr>
<th>Content and Layout:</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The instructions were clear and easy to understand.</td>
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<td>2. The module was useful to me.</td>
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<td>7. The information presented in each segment helped to answer the test questions.</td>
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<td>8. The terms in the module were adequately defined.</td>
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<td>9. The techniques in the module adequately represented the topic.</td>
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<td>10. There was adequate time to complete the module.</td>
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<td>11. The examples helped me to understand the module.</td>
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<td>12. The feedback provided was useful to me.</td>
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<td>13. The instruction followed a good sequence.</td>
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<td>14. The pictures in the module were helpful.</td>
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Additional Comments:
APPENDIX G

Timeline

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>April 21, 2005</td>
<td>Present Idea Paper to faculty</td>
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<tr>
<td>July 1, 2005</td>
<td>Meet with advisor on topic</td>
</tr>
<tr>
<td>May 2005 – August 2005</td>
<td>Write proposal</td>
</tr>
<tr>
<td>July 2005</td>
<td>Submit Human Subjects forms for approval</td>
</tr>
<tr>
<td>August 2005</td>
<td>Create Content Analysis</td>
</tr>
<tr>
<td>August 2005</td>
<td>Submit Content Analysis to advisor and content expert for approval</td>
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<tr>
<td>August 2005 – September 2005</td>
<td>Create Instructional Module</td>
</tr>
<tr>
<td>August 21, 2005</td>
<td>Submit draft #1 of proposal to advisor</td>
</tr>
<tr>
<td>September 2005</td>
<td>Submit consent letter to dentists</td>
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<tr>
<td>End of September 2005</td>
<td>Submit proposal draft #2 to advisor</td>
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<tr>
<td>October 2005</td>
<td>Submit final proposal to advisor</td>
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<tr>
<td>End of October 2005</td>
<td>Conduct One-on-One sessions with three content experts</td>
</tr>
<tr>
<td>November 2005</td>
<td>Revisions on Instructional Module</td>
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<tr>
<td>End of November 2005</td>
<td>Submit materials to advisor for approval</td>
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<tr>
<td>December 2005</td>
<td>Conduct small group session</td>
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<tr>
<td>December-January 2006</td>
<td>Analyze data and write final paper</td>
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<tr>
<td>January-February 2006</td>
<td>Submit final paper draft #1 to advisor</td>
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<tr>
<td>March 28, 2006</td>
<td>Submit final paper draft #2 to advisor</td>
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<tr>
<td>April 15, 2006</td>
<td>Submit final paper for approval</td>
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<tr>
<td>May 6, 2006</td>
<td>Present final Master’s presentation</td>
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Figure 1. Master’s Project Timeline.
APPENDIX H

Agreement to Participate in
Management and Prevention of Dental Anxiety

Kari Sing Chow
Primary Investigator
ksnakaso@hawaii.edu

This research project is being conducted as a component as a thesis for the degree of Master of Educational Technology at the University of Hawaii at Manoa. The purpose of the project is to create an instructional module on management and prevention of dental anxiety for the dental practitioner. You are being asked to participate, because you are part of the target population the module is being developed for.

Participation in the project will consist of filling out a form on background information about yourself, taking several multiple choice tests before and after the instruction is given, completing an attitudinal survey and an interview to receive feedback and comments on how you felt about the instruction. The questions on instruction will focus on teaching dental practitioners management and preventive techniques of dental anxiety. Data from the interview will be summarized into broad categories. No personal identifying information will be included with the research results. Completion of the form containing background data and attitudinal survey should take no more than 5 minutes each. Each interview will last no longer than 10 minutes. Each test will last no longer than 10 minutes and the self-instructional module will take about 30 minutes. Approximately 8-12 people will participate in the study.

The investigator believes there is little or no risk to participating in this research project.

Participating in this research may be of no direct benefit to you. It is believed, however, the results from this project will help to better identify and address management and prevention of dental anxiety.

Research data will be confidential to the extent allowed by law. Agencies with research oversight, such as the UH Committee on Human Studies, have the authority to review research data. All research records will be stored in a locked file in the primary investigators office for the duration of the research project. All other research records will be destroyed upon completion of the project.

Participation in this research project is completely voluntary. You are free to withdraw from participation at any time during the duration of the project with no penalty, or loss of benefit to which you would otherwise be entitled.

If you have any questions regarding this research project, please contact the instructional designer, Kari Sing Chow, at 428-1550 or via e-mail at ksnakaso@hawaii.edu.

If you have any questions regarding your rights as a research participant, please contact the UH Committee on Human Studies at (808)956-5007.
Participant:
I have read and understand the above information, and agree to participate in this research project.

________________________________________
Name (printed)

________________________________________   __________________
Signature        Date
APPENDIX I
Pre-test and Post-test
Management & Prevention of Dental Anxiety

Pre-Test
Pre-Test

For questions 1-20, circle the letter, fill in the blank or list the best answer.

1. Which is the best definition for dental anxiety?
   A. Avoiding visiting the dentist every 6 months
   B. A serious often paralyzing fear of seeking dental care
   C. History of “no show” appointments
   D. A patient who waits anxiously to see the dentist every six months

2. Which of the following is the initial step of dental anxiety assessment?
   A. Over the phone
   B. In person on the first visit
   C. At chair side before a procedure
   D. None of the above

3. Which of the following demonstrate a patient may be anxious about dental treatment?
   A. History of numerous cancelled dental appointments
   B. The patient or someone in his/her family tells you
   C. Poor condition of intraoral tissues
   D. All of the above

4. Which of the following patient’s behavior best expresses signs of fear?
   A. Sitting in the chair without saying a word
   B. Coughing every time water is sprayed in his/her mouth
   C. Gripping the chair tightly
   D. Asking to take break and using the restroom

5. Which of the following identifies patients who exhibit white coat syndrome?
   A. They have elevated blood pressure and they say it’s always normal except when they are at the dentist.
   B. Their faces are white and pale.
   C. They only wear white when visiting the dentist.
   D. They have low blood pressure.
6. Please list five *physiological responses evoked by dental treatment*?

1) ______________________
2) ______________________
3) ______________________
4) ______________________
5) ______________________

7. Please describe four *different types of aroma* that can be used in the dental office and what they should smell like?

8. Please describe five *important factors* to remember about dental equipment and chair positions.

9. List five *distracters* that can be used in the dental office for an anxious patient?

10. Which description best describes *appealing office design*?

   A. Hearing the drilling loudly and clearly while sitting in the waiting room.
   B. Walking in the door and smelling all the chemicals and medicine
   C. Offering DVD glasses, Ipod music with noise canceling headphones & massage cushion.
   D. Having pleasant aroma of the office, pleasant taste of dental materials, and clean and functional equipment.

11. Which of the following equipment *decreases stressors and increases comfort*?

   A. An old squeaky dental chair
   B. A computerized anesthetic
   C. A leaking air water syringe
   D. A bracket table above the patient
12. Which of the following describes dental stimuli that evoke fear?

A. The smell of the office
B. Feeling the needle
C. Feeling as though you will gag
D. All of the above

13. Which of the following identifies good communication skills?

A. Signaling the dentist by raising your hand when you need something during your dental visit.
B. The dentist interrupting your questions while you are talking about your dental visit.
C. The dentist looking at the clock and opening his mail while you are talking.
D. Listening, speaking, and effective interpretation of, and communicating through non verbal body language.

14. List the four new patient questions the receptionist should ask on the phone.

15. List the four emergency patient questions the receptionist should ask on the phone.

16. Please list the four key points to remember when addressing patients concerns.

17. Please list the four techniques on attentiveness when communicating with a patient.

18. Please list the six ways to address the concerns of a patient who is afraid of needles?
19. Which of the following pictures below shows the appropriate tray set-up for dental anesthetic to help decrease patient anxiety?

A.  

B.  

20. Identify which of the following chair positions would not decrease a patient's anxiety?

A.  

B.  

C.  

D.  

Post-Test

For questions 1-20, circle the letter, fill in the blank or list the best answer.

1. **Dental anxiety** is

   A. A patient who waits anxiously to see the dentist every six months  
   B. Avoiding visiting the dentist every 6 months  
   C. A history of no show appointments  
   D. A serious often paralyzing fear of seeking dental care

2. The **initial step of dental anxiety assessment** is

   A. At chair side before a procedure  
   B. In person on the first visit  
   C. Over the phone  
   D. None of the above

3. A patient who may be **anxious about dental treatment** would have

   A. Poor condition of intraoral tissues  
   B. History of numerous cancelled dental appointments  
   C. His/her family or they would tell you  
   D. All of the above

4. Gripping the chair tightly is

   A. the initial step of dental anxiety assessment  
   B. the behavior that best expresses signs of fear  
   C. a patient who exhibits white coat syndrome  
   D. a sign that the patient can not breathe

5. **White coat syndrome** is a patient who exhibits

   A. rapid pulse and breathing  
   B. low blood pressure  
   C. elevated blood pressure and they say its always normal except when they are at the dentist  
   D. a white and pale face
6. __________________ of dental anxiety would be if a patient presents with excessive perspiration, increased pulse rate, increased blood pressure, holding their breath, and appears tense.

7. The four different types of aroma that can be used in the dental office are

8. The five important factors to remember about dental equipment and chair positions are

9. DVD glasses, paraffin wax, music & headphones, massage cushion shaded, clear or reflective glasses are all ______________ that can be used in the dental office for an anxious patient.

10. An appealing office design consists of
   A. Having pleasant aroma of the office, pleasant taste of dental materials, and clean and functional equipment
   B. Hearing the drilling loudly and clearly while sitting in the waiting room
   C. Walking in the door and smelling all the chemicals and medicine
   D. Offering DVD glasses, Ipod music with noise canceling headphones & massage cushion

11. A bracket table above the patient
   A. decreases stressors and increases comfort
   B. decreases blood pressure and increases pulse
   C. increases stressors and decreases comfort
   D. increases pulse and decreases blood pressure

12. Dental stimuli that evoke fear are
   A. The smell of the office
   B. Feeling as though you will gag
   C. Feeling the needle
   D. All of the above
13. **Good communication skills is**
   
   A. Signaling the dentist by raising your hand when you need something during your dental visit.
   B. Listening, speaking, and effective interpretation of, and communicating through non verbal body language.
   C. The dentist interrupting your questions while you are talking about your dental visit.
   D. The dentist looking at the clock and opening his mail while you are talking.

14. List the four **new patient questions** the receptionist should ask on the phone.

15. List the four **emergency patient questions** the receptionist should ask on the phone.

16. Please list the four **key points** to remember when addressing patients concerns.

17. Please list the four **techniques on attentiveness** when communicating with a patient.

18. Please list the six ways to **address the concerns of a patient who is afraid of needles**?
19. Which of the following pictures below shows the **appropriate tray set-up for dental anesthetic to help decrease patient anxiety**?

A. ![Image A]
B. ![Image B]

20. Identify which of the following **chair positions would not decrease a patient's anxiety**?

A. ![Image C]
B. ![Image D]
APPENDIX J
Dental Anxiety Instructional Design Module
Management & Prevention of Dental Anxiety
Table of Contents

Introduction………………………………………….. 3

Chapter 1: Dental Anxiety Assessment………….. 4

Chapter 2: Modified Environment……………… 11

Chapter 3: Patient Management………………… 17

Feedback………………………………………….. 23
This module will discuss management and preventive techniques of dental anxiety. Dental anxiety is a fear that can be minimized and or prevented when properly managed by the dental practitioner.

A patient with dental anxiety may look like a normal person however they may exhibit signs of dental fear that will be discussed in this module which can be used as guidelines to help you identify them.

Patients who suffer from dental anxiety often avoid visiting their dentist on a routine basis and tend to develop dental disease and poor oral health.

Learn how to identify signs of a patient with dental anxiety and how to minimize patient trauma by reading the information on dental anxiety assessment, modified environment, and patient management. Complete the exercises on the following pages.

Please do all of the exercises that follow each section and circle the letter of the best answer or by listing your answer when needed. You can do a self-check after completing the exercises by looking at the feedback section in the back of this booklet.
Chapter 1

Dental Anxiety Assessment

Upon completion of this chapter, you will be able to:

- Define dental anxiety
- Identify characteristics of patients with dental anxiety including behavioral signs and physiological indicators
- Identify the initial steps in dental anxiety assessment
Dental anxiety is defined as a serious often paralyzing fear of seeking dental care.

“Anxiety may be manifested in cognitive, psycho physiological and behavioral spheres. Cognitively, the individual may experience apprehension, dread, fear of impending disaster or death, etc. Psycho physiological activity may occur, such as an increase in heart rate, sweating, and elevated blood pressure. Behavior manifestations include tremor, jumpiness, disruptive or uncooperative behavior, grimaces and random movement.” (Ayer 24). The goal of dental anxiety assessment is to minimize patient trauma and ensure a pleasant dental experience. Pretreatment evaluation is the first and most important step to manage and prevent dental anxiety. **A new patient is someone who has no previous record or history in the dental office. An emergency patient is someone who may have a previous history or record with the dental office however calls to make an appointment for an emergency visit. The emergency patient may only call to be seen because of a dental problem. The initial anxiety assessment form is the first form the patient is to fill out to identify any concerns or needs.**

Some of the important steps in management and prevention of dental anxiety are:

- acknowledging that dentistry evokes anxiety in a substantial portion of the population.
- assessment and recognition of anxiety in dental patients.
- utilizing one or more techniques available to reduce dental anxiety.

The first and initial step of dental anxiety assessment is to ascertain from patients perspective and the nature of need and problem. **This initial assessment should be over the phone.** There should be two standard phone questionnaires. Finding out information
in detail over the phone will help to prepare the dental office of the specific needs and concerns of the patient. It will also help to plan and allow appropriate scheduling time for each patient.

(Note: Sometimes patients will not tell you that they are afraid of the dentist.)

1) Who may we thank for referring you?
   - be sure to thank the person for the referral
     (in person or thank you card)

2) Do you have any concerns that Dr. should know about?
   - write them down and be sure to let Dr. know ahead of time
   - keep the information in the chart until all concerns are addressed

3) Are you generally comfortable going to the dentist?
   - if the answer is no listen to the patient and write down as much detail so the same situation can be avoided in your office
   - keep a note in the chart

4) Do you have any teeth that are bothering you?
   - write down area (upper/lower & left/right)
   - note sensitivity to temperature (hot/cold/both)
   - note sensitivity to chewing
   - note sensitivity to duration

1) Do you know which tooth is bothering you?
   - write down area (upper/lower & left/right)
2) Is your tooth sensitive to hot and cold?  
   Ask them on a scale of 1 to 10 (1=least, 10=most)

3) Is your tooth sore to biting or chewing? 
4) How long have you had this problem?

Emergency patients are usually patients who do not visit their dentist on a routine basis. Some of these patients do not visit their dentist due to finances, dental anxiety or denial.

The second assessment step is to have every patient complete medical and dental history and the initial anxiety assessment form. The medical and dental history is used to help identify patients with dental anxiety. A review of medication and the history may identify if patients have or are taking anti-anxiety medications. The dental history will also help to identify if the patient had any complications or negative experiences with previous dental procedures. The following initial anxiety assessment form can be used to help identify the patients and specify any concerns and needs they may have. A proper treatment plan with an appropriate time schedule can be made to minimize patient trauma and dental anxiety. Keep the initial anxiety assessment form in the chart so it can be reviewed before the dental appointment.
Please place a ✓ next to all statements that apply to you or any concerns you may have:

___ I have had a bad dental experience in the past
___ I am afraid of needles
___ I have a bad gag reflex
___ I have not been to the dentist in a long time
___ I only go to the dentist when I have a toothache or a problem
___ I have very sensitive teeth
___ I get nervous if I can’t swallow often in the dental chair
___ I hate the noise of the drill
___ I need to take breaks during all my dental appointments
___ I would like to know exactly what is going on
___ I would prefer to know as little as possible of what is going on
___ I prefer short appointments
___ I prefer less injections and longer appointments
___ I prefer not to be reclined too far back
___ I can cope and manage with dental treatment

Any other concerns:
Assessment of dental fear checklist

1. Self-report
   □ Has the patient mentioned he/she is afraid of visiting the dentist?
   □ Has anyone in the patient's family mentioned that the patient is afraid of visiting the dentist?
   □ Has the patient had a bad dental experience in the past?

2. Behavioral Signs
   Previous history:
   □ Does the patient only visit the dentist when he/she is in pain?
   □ Does the patient have numerous cancellation appointments?
   □ Does the patient have multiple no show appointments?

   In the waiting room is the patient:
   □ rapidly going through magazines
   □ sitting on the edge of the chair
   □ fidgeting
   □ pacing

   In the chair:
   □ is the patient overly talkative?
   □ is the patient gripping the chair tightly?
   □ does the patient have sweaty palms?

3. Physiological indicators
   □ Does the patient appear tense?
   □ Does the patient have excessive perspiration?
      (palms of hands, underarms, forehead, upper portions of lip)
   □ Increased pulse rate
   □ Increased blood pressure
   □ Holding their breath
8. **Dental anxiety** is defined as:
   A. Avoid visiting the dentist every 6 months
   B. A serious often paralyzing fear of seeking dental care
   C. History of broken appointments
   D. A patient who waits anxiously to see the dentist every six months

9. The **initial step of dental anxiety assessment** is conducted?
   A. Over the phone
   B. In person on the first visit
   C. At chair side before a procedure
   D. None of the above

10. Which of the following demonstrate a patient may be **suffering from dental anxiety**?
    A. History of numerous cancelled dental appointments
    B. The patient or someone in his/her family tells you
    C. Poor condition of intraoral tissues
    D. All of the above

11. **Physiological responses evoked by dental treatment include:**
    A. Tensing of muscles
    B. Increased perspiration
    C. Decreased heart rate
    D. Both A & B

12. Which patient **behavior** best expresses **signs of fear**?
    A. Sitting in the chair without saying a word
    B. Coughing every time water is sprayed in his/her mouth
    C. Gripping the chair tightly
    D. Sitting in the chair and smiling at the dentist

13. List at least two questions the **new patient should be asked on the phone**.

14. List the four **emergency patient questions the receptionist should ask on the phone**.
Chapter 2

Modified Environment

Upon completion of this chapter, you will be able to:

- Describe appealing office design
- List the various aromas that can be used in the dental office
- Describe the pleasant taste of dental materials
- Identify distracters to help make a dental appointment more comfortable and relaxing
- Identify chair positions that increases comfort and decreases stressors
First impressions are lasting and begin when the patient walks through the door. The sight, sounds, smells, taste and sanitation of the dental office play a role in triggering dental anxiety. Have someone in the office sit in your dental waiting room and experience the sight, sound, and smell.

**Example #1:**

Imagine walking through the door. The receptionist does not say a word. The office smells like medicine. The carpet is filthy and is stained. The books and magazines are torn and worn. The chairs squeak and wobble. The room is cold and you can hear drilling in the back. You can also hear the conversation of the Dr. and his patient. The assistant has her gloves, mask and over gown and greets you.

**Example #2:**

Imagine walking in the door. The receptionist greets you and offers some coffee, tea, or water. The office has a nice aroma. The room is at a comfortable temperature and you can’t hear any drilling in the back. The waiting room has no clutter and is neat and clean. One of the staff members then offers you a menu of amenities to choose from such as a movie, paraffin wax, massage cushion, lip balm, tunes, a blanket and a hot or cold towel.

Which experience would you want?
Appealing office design

An appealing office design includes pleasant aroma of the office, pleasant taste of dental materials, clean and functional equipment.

Aroma: The use of gel and liquid fragrances, candles and scented plug-ins can help eliminate “dental office smells.” This may contribute to a more pleasant experience for patients who are apprehensive about dental visits. It is best to not use an overpowering scent as some may feel overwhelmed, and others may have an allergy.

Dental products: Prophylaxis paste, fluoride, alginate, and other dental products come in different flavors. Incorporation of these different flavors in patient care can make the visit interesting and varied. Different flavors of lip balm, which keep lips from drying during long appointments, are also available.
Dental equipment is very costly and requires research and time invested to select the appropriate one for the office budget and needs. To decrease stressors and increase comfort: **Always make sure your equipment is functional and working properly.** A squeaky broken chair can be disturbing to an anxious dental patient.

Elimination of a bracket table over the front of the chair can be more comforting for the patient.

A bracket table over the front of the chair can make the patient feel restrained or trapped.

If you have a chair like this place the bracket table to the side of the patient so they will feel less restrained and therefore more comfortable.

Rear delivery can be a nice way to hide instruments from the patient.
Distracters

Distraction and relaxation are both ways to reduce anxiety in the dental office. Distracters which are offered to patients may vary. The following items below are some examples of distracters that can be offered in a dental office. They help to make the dental appointment more comfortable and relaxing.

**DVD Glasses**

**Paraffin Bath**

**Paraffin Wax**

**Massage cushion**

**Headphones**

**Lip Balm**

**Protective eyewear**

**Shaded**

**Reflective**
**Exercises Ch. 2**

1. Which description best describes *appealing office design*?
   
   A. Hearing the drilling loudly and clearly while sitting in the waiting room.
   B. Walking in the door and smelling all the chemicals and medicine
   C. Offering DVD glasses, Ipod music with noise canceling headphones & massage cushion.
   D. Having pleasant aroma of the office, pleasant taste of dental materials, and clean and functional equipment.

2. Please describe *different types of aroma* that can be used in the dental office and what they should smell like?

3. Please describe *five important factors* to remember about *dental equipment and chair positions*.

4. Which of the following equipment *decreases stressors and increases comfort*?
   
   A. An old squeaky dental chair
   B. Rear chair delivery
   C. A leaking air water syringe
   D. A bracket table above the patient

5. List five *distracters* that can be used in the dental office for an anxious patient?
Chapter 3

Patient Management

Upon completion of this chapter, you will be able to:

• Minimize dental anxiety
• Develop a comfortable environment for patients
• Address concerns and needs of each patient
• Communicate and be attentive with each patient
The goal of patient management should be the development of a comfortable environment with minimal emotional and physical discomfort. There are patients who may be extremely fearful and anxious who may require psycho sedation and general anesthesia. Also there are patients who may need to take anti-anxiety medications prior to dental appointment.

**How to address the following concerns:**

The dentist and all team members should be informed of any concerns and needs of each patient to help make the dental visit a pleasant experience. Relevant information should be well documented in the patients chart. The patients chart should be reviewed prior to dental appointment.

1) **I have had a bad dental experience in the past**
   - ask the patient to specify exactly what the bad experience was
   - listen to the patient and document detail so this may assist you in avoiding similar occurrences.

2) **I am afraid of needles**
   - hide the needle from the patient with a napkin (see below)
   - ask the patient if closing his eyes would be helpful prior to being anesthetized
   - ask if he or she would like to be told when a injection will be given

<table>
<thead>
<tr>
<th>Bad Example</th>
<th>Good Example</th>
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<tbody>
<tr>
<td><img src="image1" alt="Bad Example Image" /></td>
<td><img src="image2" alt="Good Example Image" /></td>
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</tbody>
</table>
- offer DVD glasses or protective eyewear
- offer a computerized anesthetic such as “The Wand” if available
- offer a painless and needle less anesthetic for soft tissue management 

**Oraqix**

3) **I have a bad gag reflex**
- avoid retracting the tongue in the posterior region if possible
- avoid touching the soft palate with the high volume evacuation tip
- avoid excess water during each procedures
- ask patient to raise his or her hand to let you know if he or she needs to breathe and have a break in treatment
- avoid leaving the x-ray instruments in the patients mouth for prolonged periods

4) **I have not been to the dentist in a long time**
- ask the patient the reason
- listen to the patient and record details to avoid similar occurrences

5) **I only go to the dentist when I have a toothache or a problem**
- ask the patient the reason
- listen to the patient and document in detail

6) **I have very sensitive teeth**
- have patient identify location of sensitivity
- determine if sensitivity is to hot/cold/percussion
- if cold-dentist need to consult with patient
- if hot-dentist need to consult with patient
- if both-dentist need to consult with patient
7) I get nervous if I can’t swallow often in the dental chair
   - discuss with patient a signal to use for attention
   - ask patient to raise his or her hand when he or she needs to swallow

8) I hate the noise of the drill
   - offer an IPOD with earphones/DVD glasses or some type of covering for their ears

9) I need to take breaks during all my dental appointments
   - ask patient to raise his or her hand or discuss a signal to tell you when a break is needed
   - discuss on comfortable appointment lengths
   - schedule accordingly

10) I would like to know exactly what is going on
    - explain procedures thoroughly prior to treatment
    - explain possible complications
    - after procedure is done provide reassurance
    - make sure the patient understands before they leave

11) I would prefer to know as little as possible of what is going on
    - talk to patient during appointment to make sure they are okay

12) I prefer short appointments
    - determine appointment lengths for the patient
    - schedule accordingly

13) I prefer less injections and longer appointments
    - determine if anesthesia is required and discuss with patient
    - determine length appropriate for patient
    - schedule accordingly
14) I prefer not to be reclined too far back
   - each time you recline patient the patient to identify the comfortable position
     for them

**Key points**

- Always record patients concerns in chart
- Review chart prior to each appointment so concerns are addressed
  without having to be reminded
- Always check on the patient throughout appointment to assure patient
  comfort
- Always make an extra effort to address their concerns

Anesthetic needles and sharp instruments like explorers, and
scalers should be covered and not visible to the patient. This may prevent pre-
procedure anxiety. An uncluttered environment may also help to decrease anxiety
when the patient sits in the chair. A sanitary, pleasant and comfortable office also
contributes to patient comfort and ease.

**Communication**

“Good communication skills often require listening, speaking, and
effective interpretation of, and communicating through verbal and non verbal
body language. No skill can be more important than communication when
meeting, interviewing, and diagnosing a dental patient. Assisting a patient to be as
comfortable as possible will likely increase that chance that a patient will feel more
at ease in expressing himself or herself. The dentist should be attentive when a
patient is sharing his or her concerns or needs. Maintaining good eye contact,
repeating, relaxed posture, and nodding are techniques to show patients
attentiveness. (Ayer 127-128)”
1. Which of the following demonstrates **good communication skills**?

   A. Signaling the dentist by raising your hand when you need something during your dental visit.
   B. The dentist interrupting your questions while you are talking about your dental visit.
   C. The dentist looking at the clock and opening his mail while you are talking.
   D. Listening, speaking, and effective interpretation of, and communicating through verbal and non verbal body language.

2. List the four **key points** to remember when addressing patients concerns.

3. List the four **techniques on attentiveness** when communicating with a patient.

4. List the six ways to **address the concerns of a patient who is afraid of needles**?

5. Which of the following describes **dental stimuli that may evoke fear**?

   A. The smell of the office
   B. Feeling the needle
   C. Feeling as though you will gag
   D. All of the above
Feedback to Exercises
1. Which is the best definition for dental anxiety?
   **Oops! A is incorrect.** Avoiding visiting the dentist every 6 months doesn’t necessarily mean the patient is anxious.
   **Good job, B is correct.** A serious often paralyzing fear of seeking dental care
   **Oops! C is incorrect.** History of “no show” appointments doesn’t necessarily mean the patient is anxious.
   **Oops! D is incorrect.** A patient who waits anxiously to see the dentist every six months

2. Which of the following is the initial step of dental anxiety assessment?
   **Good job, A is correct.** Over the phone
   **Oops! B is incorrect.** In person on the first visit—it is better to know prior to their first appointment so everyone in the office can be prepared.
   **Oops! C is incorrect.** At chair side before a procedure—the dentist should know somewhat ahead of time.
   **Oops! D is incorrect.** None of the above

3. Which of the following demonstrate a patient may be anxious about dental treatment?
   **Oops! A is incorrect.** History of numerous cancelled dental appointments
   **Oops! B is incorrect.** The patient or someone in his/her family tells you
   **Oops! C is incorrect.** Poor condition of intraoral tissues
   **Good job, D is correct.** All of the above

4. Which of the following are physiological responses evoked by dental treatment?
   **Oops! A is incorrect.** Tensing of muscles
   **Oops! B is incorrect.** Increased perspiration
   **Oops! C is incorrect.** Decreased heart rate
   **Good job, D is correct.** Both A & B

5. Which of the following patient’s behavior best expresses signs of fear?
   **Oops! A is incorrect.** Sitting in the chair without saying a word could mean they are just shy or tired.
   **Oops! B is incorrect.** Coughing every time water is sprayed in his/her mouth could mean they have an itchy throat or they don’t like the water.
   **Good job, C is correct.** Gripping the chair tightly
   **Oops! D is incorrect.** Sitting in the chair and smiling at the dentist does not indicate signs of fear.
6. List the four new patient questions the receptionist should ask on the phone.
   1. Who may we thank for referring you?
   2. Do you have any concerns that Dr. should know about?
   3. Are you generally comfortable going to the dentist?
   4. Do you have any teeth that are bothering you?

7. List the four emergency patient questions the receptionist should ask on the phone.
   1. Do you know exactly which tooth is bothering you?
   2. Is your tooth sensitive to hot or cold?
   3. Is your tooth sore to biting or chewing?
   4. How long have you had this problem?
1. Which description best describes appealing office design?
   
   **Oops! A is incorrect.** Hearing the drilling loudly and clearly while sitting in the waiting room can be disturbing to an anxious dental patient.
   
   **Oops! B is incorrect.** Walking in the door and smelling all the chemicals and medicine may trigger dental anxiety.
   
   **Oops! C is incorrect.** Offering DVD glasses, Ipod music with noise canceling headphones & massage cushion are distracters to help make a patient comfortable.
   
   **Good job, D is correct.** Having pleasant aroma of the office, pleasant taste of dental materials, and clean and functional equipment.

2. Please describe different types of aroma that can be used in the dental office and what they should smell like?
   
   Using gel and liquid fragrances, candles and wallflowers are different types of aroma that can be used and they should be mild because some patients may not like strong scents.

3. Please describe five important factors to remember about dental equipment and chair positions.
   
   1. Elimination of a bracket table over the front of the chair can be more comforting for the patient.
   2. A bracket table over the front of the chair can make the patient feel restrained or trapped.
   3. If you have a chair with the bracket table place it to the side of the patient so they will feel less restrained and therefore more comfortable.
   4. Rear delivery can be a nice way to hide instruments from the patient.
   5. Always make sure your equipment is functional and working properly.

4. Which of the following equipment decreases stressors and increases comfort?
   
   **Oops! A is incorrect.** An old squeaky dental chair can make a patient more anxious.
   
   **Good job, B is correct.** Rear chair delivery
   
   **Oops! C is incorrect.** A leaking air water syringe can make a patient feel less confident about the functions of the equipment giving them more to worry about.
   
   **Oops! D is incorrect.** A bracket table above the patient can make a patient feel trapped.

5. List five distracters that can be used in the dental office for an anxious patient?
   
   1. DVD glasses
   2. Paraffin wax
   3. Music & headphones
   4. Massage cushion
   5. Shaded, clear or reflective glasses
Feedback Chapter 3

1. Which of the following identifies **good communication skills**?
   - **Oops! A is incorrect.** Signaling the dentist by raising your hand when you need something during your dental visit is good however good communication skills require more.
   - **Oops! B is incorrect.** The dentist who interrupts your questions while you are talking about your dental visit is an example of poor communication skills.
   - **Oops! C is incorrect.** The dentist looking at the clock and opens his mail while you are talking shows disinterest in what you have to say.
   - **Good job, D is correct.** Listening, speaking, and communicating effectively through verbal and non verbal body language.

2. Please list the four **key points** to remember when addressing patients concerns.
   1. Always record patients concerns in chart
   2. Review chart prior to each appointment so concerns are addressed without having to be reminded
   3. Always check on the patient throughout appointment to assure patient comfort
   4. Always make an extra effort to address their concerns

3. Please list the four **techniques on attentiveness** when communicating with a patient.
   1. Maintain good eye contact
   2. Repeat what the patient says
   3. Maintain a relaxed posture
   4. Nod your head

4. Please list the six ways to **address the concerns of a patient who is afraid of needles**?
   1. Hide the needle from the patient
   2. Ask the patient if closing their eyes would be comfortable prior to being anesthetized.
   3. Ask them if they would like to be told when an injection will be given
   4. Offer DVD glasses or protective eyewear
   5. Offer a computerized anesthetic such as “The Wand”
   6. For soft tissue management offer a painless and needle less anesthetic

5. Which of the following describes **dental stimuli that may evoke fear**?
   - **Oops! A is incorrect.** The smell of the office
   - **Oops! B is incorrect.** Feeling the needle
   - **Oops! C is incorrect.** Feeling as though you will gag
   - **Good job, D is correct.** All of the above