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ENG 5313 Document Design

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Usability Testing Report

Executive Summary

This project was to evaluate the effectiveness of a dental aftercare informational handout for a dentist client. User participants were from diverse backgrounds, some saw their dentist regularly, and some did not. The results and suggestions were analyzed. Improvements were made to create a final document of which the dentist client approved. The dentist client was happy to have a well-thought-out informational handout to help patients protect their investment in their dental care.

Introduction and Purpose

This Usability Test is a test of a handout I created for a dental practice. The handout is specifically for dental crowns and the dos and don'ts of taking care of crowns after they have been placed.

Dental crowns are one of the finest modern dental restorations available today, to restore and maintain severely damaged teeth. They can completely restore aesthetics and function, where the patient has suffered damage to their natural teeth. Dental crowns today can look and function as naturally as a patient's original normal healthy teeth.

Crowns can however require a significant financial investment by the patient, especially if multiple crowns are needed. Failure to properly clean and care for dental crowns can result in failures of the crown from leakage under the crown, recurrent decay, destruction of the remaining tooth under the crown, and even infection and abscess of the remaining nerve. Severe pain, swelling, and discomfort can also occur.

My client wanted a patient information handout to clearly and concisely explain how to maintain dental crowns, and help protect the patient's investment, so they can last a lifetime.

The following are the methods I used including the description of the testing processes and the recruitment of users/participants. I qualified all users with a pre-test to make sure they were appropriate user participants.

Methods: Participants

To recruit participants, I contacted each user by Zoom, FaceTime, or in-person and conducted the test with them. An e-mail was sent with these instructions prior to live testing so they could preview the document. I tested the handout with 5 user participants in my target audience for the document:

- 1 A male PhD student in his mid-40's.
- 2 A female retired school teacher in her early 70s
- 3 A male attorney and retired Naval Officer in his mid-60s
- 4 A male pastor in his early 50's, UC Berkeley alumni, and retired US Marine Intelligence Officer.
- 5 A male technical writer and graduate student in his mid-20's

Methods: Procedures

I designed the usability, pre-qualifications, actual testing, and the post-test, proctored the tests and interviews and I scored the results.

To rank the ease of use for each participant according to each task, I developed a scale of 1–5, “1” being “very poor” and “5” being “excellent.” Two of the tasks were scaled 1–5 and the post-test have four questions scaled 1-5. The scores for each question were averaged to determine an average score for each question. This is a simple statistical analysis of evaluating the values for each user. Three of the questions were open-ended discussion answers. These were reviewed and evaluated for improvements to the document.

Results

A. Usability Test Questions Results

The results of the task questions were:

1. On a scale of 1-5 how effective are the images and graphics in the document?
Average result value equaled 4.20.
2. On a scale of 1-5 how understandable did you find the information?
Average result value equaled 4.80.
3. The most pertinent questions asked by the users were as follows:

How much do crowns cost?

Can you put a Sonicare website hyperlink in the text?

How much does the Sonicare cost?

How do I learn more about home fluoride treatments?

Can you have Sonicare price listing like the price menu items at restaurants with a \$ meaning cheap and \$\$\$ being expensive?

How many times should I brush and floss per day?
Can you have the “Engineering Great Smiles” in a darker color or larger font so it is easier to read? A color like black or royal blue?
Do you need the “brush and floss” in the handout twice?
Can you improve the readability of the text of the logo, so it is more readable?
What materials are crowns made of?
If I broke my tooth why can’t you just do a big filling?

B. Post-Test Results

The results of the post-test are:

1. Clarity of the brochure.
Average results value equals 4.60.
2. Effectiveness of the handout in explaining the Dos and Don’ts.
Average results value equals 4.80.
3. Are the graphics helpful in explaining the information?
Average results value equals 4.60
4. How likely are you to use this information if you have dental crowns?
Average results value equals 4.20.

- C.** What do you know now that you didn’t know? Following are comments from users.
Participants did not know that there was a home fluoride treatment, or what a Sonicare is, or how to order one. Some didn’t know why a tooth could require a crown instead of just having a very big filling. Two participants didn’t know that failure to keep a crown clean could result in decay or leakage under the crown and eventually cause breakdown of the tooth structure.

- D.** What changes, if any, would you suggest to improve the document?
Several suggestions were made. The most useful changes were made in the final document, such as clarifying the font on the logo, putting a title on the top and in the middle, putting the phone number in bold, putting in a hyperlink to USA Philips, and revising the final bullet point under the “Don’t” section.

Recommendations

User comments for improvements and changes are included in the section below.

I got relevant feedback from all my participants, some wanted to see changes.

One participant suggested adding a border around the edge of the document and putting a border or a frame around each image.

One participant stated that it needed a clearer, bigger title without the practice name in it.

One participant said to take out the second “brush and floss” because he thought it was redundant.

Another participant stated that it would be good if the text stated: “As you can clearly see in this next illustration/picture.” He thought this would add a better sequence and more order to the document.

One participant requested more information about why crowns are necessary instead of big fillings. While this was a great question, its answer was beyond the scope of the handout so a link was added to the handout directing the patient to the website and the “Patient Education” tab. Also, the participant suggested putting a picture of someone trying to crack a pecan with their teeth. This would explain what not to do and they said it would “drive the point home”.

One participant suggested putting a space between the dentist’s name and www.burlesonsmiles.com

All suggestions were considered, but some were not usable due to the size constraints of the single-page document.

Appendices

1. The Do's and Don'ts Crown Document
2. The prequalification test/pre-test.
3. The three task questions
4. The post-test or post-survey.
5. Excel Spreadsheet of the Scores

Appendix A: Pre-test Instructions

Pre-test instructions

I am asking for your assistance in conducting a survey about the effectiveness of an informational handout for one of my clients, a dentist, as to the clarity and effectiveness of the information in the handout.

This is a test of and about the handout, not any of the survey participants.

I conducted this project via zoom, Facetime, and also in person, per each user participant's choice. I estimated that the entire process would take between 15-30 minutes per user.

I thanked them for their willingness to assist me in this project for my graduate school course, Document Design.

Appendix B: Testing Questions

Please read and thoroughly review the attached document on Dos and Don'ts on Dental Crowns. Please answer the following 3 questions about the document you just read. For questions 1 and 2, please rate from 1-5, one being poor and 5 being excellent.

1. On a scale of 1-5 how effective are the images and graphics in the document?
2. On a scale of 1-5 how understandable did you find the information?
3. What questions do you still have after reviewing the document?

Appendix C:

Post-test instructions: After reading and reviewing the document and answering the 3 questions above, please complete the following post-test survey.

- A. Please rate from 1-5, one being poor and 5 being excellent:
 - 1. The clarity of the handout.
 - 2. The effectiveness of the handout in explaining the Dos and Don'ts.
 - 3. Are the graphics helpful in explaining the information?
 - 4. How likely are you to use this information if you have dental crowns?
- B. What do you know now that you didn't know before reading the handout?
- C. What changes, if any, would you suggest to improve the document?

Recommendations

I got feedback from my participants. They all wanted to see some changes.

Add a border around the edge of the document.

Consider a border or a frame around each image.

Do:

- Keep all your teeth and crowns clean.
- Brush and floss daily.
- Get a Sonicare Toothbrush.
<https://www.usa.philips.com>
- Consider using home fluoride treatment.
- Ask Dr. Hawkins what he recommends for your home fluoride.
- Swishing and rinsing with water can remove food debris after eating when you cannot brush until later.
- Maintain regular dental check-ups.
- For more detailed information go to www.burlesonsmiles.com and click on the **Patient Education** tab.

Questions? Call 817-44-SMILE.

Dr. Chris Hawkins
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1304 SW John Jones
Burleson, TX 76028

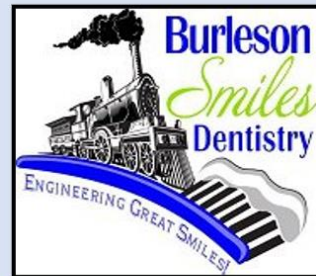
Crown Care Instructions

Crowns are replacements for damaged or broken non-fillable teeth.

Crowns can last a long time, even a lifetime, if taken care of properly.

**Don't:**

- Skip routine dental check-ups.
- Skip brushing and flossing daily.
- Bite on non-food items. While very strong, crowns are not tools to crack things, or bite nails.
- Fail to keep the crowns clean or this will result in recurrent decay, leakage under the crown, breakdown of the remaining tooth structure, and possibly abscess. This can cause infection of the nerve and severe pain.



Analysis of User's Answers for Dental Crowns Dos and Dents Document

Users	1	2	3	4	5	Average
Tasks						
1 Image effectiveness	3	5	5	4	4	4.2
2 Understandable	5	5	5	5	4	4.8
3 Remaining Questions	See Results Summary					
Post Test						
1 Handout Clarity	4	5	5	4	5	4.6
2 Effectiveness of the handout	4	5	5	5	5	4.8
3 Effectiveness of the Graphics	5	5	5	3	5	4.6
4 Likely to use information?	4	3	5	4	5	4.2
B What do you know now?	See Results Summary					
C What suggested changes?	See Results Summary					