UCSF
UC San Francisco Electronic Theses and Dissertations

Title
Changing dentists' knowledge, attitudes, and behavior about domestic violence through an interactive multimedia tutorial

Permalink
https://escholarship.org/uc/item/1fp743g3

Author
Hsieh, Nancy Kyu Kwon

Publication Date
2005

Peer reviewed|Thesis/dissertation

eScholarship.org Powered by the California Digital Library
University of California

Copyright 2005

by

Nancy Kyu Kwon Hsieh

DEDICATION

This manuscript is dedicated to my mother,

Christina Bokhee Kwon Ault,

for her spirit, her will to live, and for her love for her children.

Acknowledgements

I would like to thank the following people:

- John Hsieh, my husband, for his unconditional love, support, and for convincing me to continue my education.
- Barbara Gerbert, my advisor, for her guidance, support, and for creating such a wonderful tutorial that will impact dental education nationwide. I have a new found respect for research after working with her.
- The team members at Center for Health Improvement and Prevention Studies for helping me reach all my goals and deadlines, especially Dale Danley for guiding me through the process and laying down the foundation.
- Karen Herzig for all your help in editing and statistical analysis, at least you enjoyed the analysis more than I did, you are awesome.
- Dr. Stuart Gansky for helping with all the statistical analysis and always coming through at the very last minute.
- My Thesis Committee Members: Barbara Gerbert, Stuart Gansky, Art Miller, and Jane Weintraub for being great mentors and helping me finish on time.
- Mom Kwon and Mom Hsieh, thank you for watching over Katherine during this stressful time and allowing me to pursue my dreams. You are both my inspiration.
- All my family and friends, who put up with me, thank you!

Changing Dentists' Knowledge, Attitudes, and Behavior about Domestic Violence through an Interactive Multimedia Tutorial

Nancy Kyu Kwon Hsieh

Abstract

Purpose: Dentists have a unique opportunity to address the problem of domestic violence. The goal of this study was to test the effectiveness of a brief, interactive, multimedia tutorial, designed to educate dentists to identify and respond to domestic violence (DV), through the AVDR (Ask, Validate, Document, Refer) model.

Methods: To help dentists learn the AVDR model, a brief, interactive, multimedia tutorial was developed. A domestic violence assessment instrument of 24 questions assessed the participant's knowledge, attitudes, and practice behaviors related to DV. A randomized, controlled trial was conducted with dentists (n=174), in which the experimental group took the tutorial and the control group did not. To assess empathy, an empathy scale, which consisted of 20 questions, was given to all participants prior to the domestic violence assessment instrument.

Results: The experimental group demonstrated significantly greater improvement in scores on most domestic violence assessment items, including knowledge, attitudes, and behaviors, relative to control subjects ($p < 0.01$). Empathy scores did not show significant correlation with change scores on the domestic violence assessment instrument.

Conclusions: Dentists were introduced to simple strategies that enable them to respond to domestic violence in their clinical practices. The AVDR tutorial is effective in helping

dentists learn how to identify and help patients who are victims of abuse. The AVDR tutorial could be disseminated to help dentists and their patients across the country.

Barbara Gelbut PhD
Chariperson of Committee

6/8/05
Date

Table of Contents

Page

Dedication.....iii

Acknowledgements.....iv

Abstract.....v

Table of Contents.....vii

List of Tables.....ix

Hypothesis.....1

A. Specific Aims.....2

B. Background and Significance.....3

Relevance to Dentistry.....3

Asking, Validating, Documenting, Referring: AVDR.....5

Relevance of Empathy.....5

C. Methods and Materials.....7

Development of the AVDR tutorial.....7

Study Design.....8

Participant Selection.....8

Participant Recruitment.....9

Domestic Violence Assessment Instrument.....10

Jefferson Scale of Health Care Provider Empathy.....10

Methods of Statistical Analysis.....10

D. Results.....12

Effects of the AVDR tutorial.....12

Empathy Scores.....13

E. Discussion.....15

F. Conclusion.....19

G. References.....20

H. Appendices.....24

Appendix I: Table of Domestic Violence Assessment Instrument Results.....25

Appendix II: Domestic Violence Assessment Instrument.....27

Appendix III: Scale of Dentist Empathy Based on the Scale of Health Care Provider Empathy (modified with permission).....36

Apppendix IV: Demographic Questionnaire.....38

Appendix V: Consent to Participate in Research.....39

List of Tables

Page

Table 1: Domestic Violence Assessment Instrument Results.....25

Changing Dentists' Knowledge, Attitudes, and Behavior about Domestic Violence through an Interactive Multimedia Tutorial

by

Nancy Kyu Kwon Hsieh

HYPOTHESIS

1. Dentists who receive the "AVDR Tutorial" will significantly increase their knowledge, attitude, and behavior scores at post-test compared to those who do not receive the tutorial.

2. Dentists who have higher baseline empathy scores will have higher knowledge, attitude, and behavior scores in regard to domestic violence at baseline.

3. Female dentists will score higher empathy scores than male dentists.

A. SPECIFIC AIMS

In a randomized, controlled trial we tested the efficacy of an educational and behavioral-change intervention designed to help dentists effectively overcome their reluctance to identify and treat victims of domestic violence, and to effect positive changes in their knowledge, attitudes, and behaviors with respect to caring for their patients. The ultimate goal of this undertaking is to help prevent victims of domestic violence who seek dental care from being subjected to further domestic violence and associated oral trauma. The specific aims of this effort were:

- To provide a brief multimedia tutorial to educate dentists to recognize and respond to domestic violence;
- To compare the knowledge, attitudes, and behavior scores of dentists in the intervention group to those in the control group;
- To examine the relationship of empathy scores with knowledge, attitude, and behavior scores on domestic violence; and
- To compare empathy scores between female and male dentists.

B. BACKGROUND AND SIGNIFICANCE

Domestic violence exacts an enormous toll in human costs. It has been called a "silent epidemic" by the American Medical Association[1, 2] and by three Surgeon Generals.[3, 4] California state law requires health practitioners to report to "a local law enforcement agency" when they provide care to a patient who may be "suffering from any wound or other physical injury inflicted upon the person where the injury is the result of assault or abusive conduct" (Cal. Penal Code 11160-1163.2).

Domestic violence is defined as a pattern of control involving physical, sexual, and/or psychological assaults against current or former intimate partners.[5] It is estimated that two to four million women are physically abused each year and domestic violence may occur in as many as one in four United States families.[2] Studies indicate that U.S. women are more likely to be assaulted, raped, or killed by current or former male partners than by all other types of assault combined.[1]

Relevance to Dentistry

Physical injuries from domestic violence commonly appear in the areas of the face, head, and neck. Ochs et al., reported in the *Journal of the American Dental Association* that 94% of victims of domestic violence had head, neck, and facial injuries[6] and in the *Journal of Cranio-Maxillofacial Surgery*, Shepherd et al., found 88% of assaulted women have some constellation of facial injury, including lacerations, bruising, and fractures.[7] For this reason, dentists have an important role to play in addressing this major health problem. Unfortunately, despite these published findings, many dentists are unaware of this significant relationship between head and neck injury and possible domestic abuse

and are uncertain of their role in addressing this issue with their patients.[8] In a 1994 study of health care professionals in Oregon, only six percent of surveyed dentists commonly suspected physical abuse among their patients, compared to 23 percent for surveyed physicians and 53 percent for surveyed social workers.[9]

Office visits to dentists represent important opportunities for interventions to help prevent further violence and injury from occurring. At the American Dental Association's House of Delegates annual meeting in October, 1996[10], a policy was enacted to increase "...awareness among dentists on how to spot abuse and neglect among women."[11] Dentists have a unique opportunity to play a role in addressing the issue of domestic violence because more than two of three adults in this country have scheduled dental visits at least once a year.[12]

In a survey of dentists and dental hygienists, less than ten percent reported having received any educational content in their professional training regarding domestic violence.[9] Love et al.[13] found dentists who received *any* domestic violence education had better knowledge, attitudes, and behaviors than those who had not received domestic violence education. This places a great emphasis on the necessity of domestic violence education among dentists. Yet, little has been done to identify an effective approach to educating dentists about this problem and to effect improvement in knowledge, attitudes, and behaviors with respect to treating victims of domestic violence. To date, there are very few reports of assessment of any domestic violence training efforts designed specifically for dentists.[14, 15]

Asking, Validating, Documenting, Referring: AVDR

Many dentists report they have never routinely screened their patients for domestic violence at "new patient visits" or at "periodic check-ups".[13] However, they report screening their patients if they present with a sign of an injury.[13] Screening can be difficult and complex for dentists, with providers fearful of opening "Pandora's Box".[16] Based on these concerns and on our own research about how health care professionals have been able to help survivors of domestic violence, we developed an approach that simplifies the dentist's role in addressing domestic violence.[17, 18]

This four stage process, known as asking, validating, documenting, and referring (AVDR) involves the following:

1. Asking patients about abuse;
2. Providing validating messages that acknowledge that battering is wrong while confirming the patient's worth;
3. Documenting signs, symptoms, and disclosures in writing in the patient's dental record and with photographs; and
4. Referring victims to domestic violence specialists and resources in the community.

Highly suitable for encounters with dental patients, the AVDR approach offers a simplified method of helping patients without imposing a requirement that dentists solve the problem of abuse.[17, 18]

Relevance of Empathy

Hojat et al.,[19] defines empathy as

> a concept involving cognitive as well as affective or emotional domains. The cognitive domain of empathy involves the ability to understand another person's inner experiences and feelings and a capability to view the outside world from the other person's perspective. The affective domain involves the capacity to enter into or join the experiences and feelings of another person. The affective relationships that elicit emotional responses are conceptually more relevant to sympathy than to empathy.

In a study by Gerbert et al,[20] in which women who had experienced domestic violence described their experiences with their health care providers, most of the women victims of domestic violence interviewed believed that the health care providers were "uninterested, uncaring, or uncomfortable." One of the respondents reported that the most helpful health care provider was a nurse practitioner who was "empathetic" to her situation. By putting one's self into another person's shoes, one is able to understand and identify with an individual.

There are few scales that measure empathy. Among them is the Jefferson Empathy Scale,[21] which relates to the patient-health care provider relationship. The Jefferson Empathy Scale was developed to measure empathy of medical students and doctors in relation to patient care. Empathy has 3 components.[19] The first is perspective taking, which is the core ingredient in empathy, the second is compassionate care (or emotions involved in care), and the third is "ability to stand in patient's shoes" (or thinking like the patient). Hojat et al., [19] employing a factor analysis, conclude that these are consistent with the "conceptual aspects of a multidimensionality notion of empathy."

C. METHODS AND MATERIALS

The procedures, potential risks, and benefits of participating in this study were fully explained to the participants involved, and their informed consent was obtained. This study was approved by the Institutional Review Board of the University of California San Francisco.

Development of the AVDR tutorial

To help dentists learn the AVDR approach, we created an interactive, multimedia, computer tutorial tailored to dental professionals that would be easily reproducible as a DVD or widely accessible from an Internet server. The tutorial depicts an interaction between a dentist and a patient who displays signs of battering (tooth mobility and laceration of the labial mucosa) at her dental visit.

A recent review of medical and non-medical educational programs found such person-to-person interactions to be a promising use of virtual reality computer programs.[22] Programs that have both video and audio components are useful because they require little text reading. Further advantages of this approach include interactivity, visualization and feedback through the learning experience.[23] To develop the script, we created a model of battered women's positive experiences with the health care system and health care providers' reports of their successful strategies for helping battered women, which were gathered during previous research.[24-26]

Two skilled actors appear in the tutorial: one is a real dentist who portrays a "sage" and the second actor portrays a dental patient who displays physical signs of abuse to her head and facial areas. The dentist participant is asked to interact with the virtual

patient by choosing questions and statements to deliver to the virtual patient. These inputs elicit a variety of reactions from the virtual patient. The "sage" follows with advice and guidance about the simulated dentist-patient interaction. Additional teaching tools include a graphic display of principal messages and changes of color backgrounds, as the tutorial proceeds through the four stages of the AVDR lesson. The tutorial takes approximately 15 minutes to complete.

Study Design

A controlled, randomized trial using two study groups examined the impact of the tutorial with practicing dentists. The *control group* received a pre-test, followed immediately by the post-test, and then received the tutorial. The *intervention group* received a pre-test, followed by the tutorial, and then a post-test. Laptop computers randomized the participants into control and experimental groups, resulting in stratified randomization. There were six Apple laptops used to administer the pre-test, post-test, and AVDR domestic violence tutorial. All subjects took the Modified Jefferson Scale of Empathy for Health Care Providers[19] before completing the AVDR domestic violence tutorial. Once participants completed the tutorial, they were reimbursed, offered a sample documentation form and given referral sources nationally and in the San Francisco area.

Participant Selection

For inclusion in the study, dentists had to practice dentistry in the U.S. and be engaged in at least 20 hours of outpatient care per week.

Participant Recruitment

Our target population was practicing dentists. A convenience sample of dentists was recruited from the American Dental Association (ADA) annual session held in San Francisco, CA, University of the Pacific (UOP) continuing education courses, and the San Francisco Bay Area County Dental Society meetings.

A list of all meetings and conferences during the fall of 2003 was created with contact information. This list was created from information obtained from the ADA and UOP websites.

Personnel were contacted within the ADA corporate headquarters. For the ADA's annual meeting we were able to obtain a booth in the vendor area. We also held a table clinic on one of the days of the ADA annual session in conjunction with our booth. The table clinic was an additional site in which we were able to direct willing participants to our booth. At the ADA convention, an LCD television was raffled in hopes of recruiting more participants.

Participants were recruited before, during the lunch hour, and after several Continuing Dental Education courses at UOP. The San Francisco Dental Society was able to accommodate our project at one of their monthly meetings. Residents in the various dental specialty programs at University of California San Francisco were recruited in the dental clinics.

All participating dentists were able to choose from several incentives for their participation: Target $20 gift card, REI $20 gift card, Starbucks $15 gift card, Safeway $20 gift card, or a sleeve of three golf balls.

Domestic Violence Assessment Instrument

The pre-test and post-test consisted of a series of 24 questions delivered on our laptop computers. The questions covered the range of the **AVDR** approach. For example:

1. **Ask:** If I recognized injuries to the head or neck, I would ask the patient something like, "Are you safe at home?"
2. **Validate:** "No one deserves to be abused"
3. **Document:** "How much do you believe you know about how to document abuse in the dental chart" and
4. **Refer:** "I would offer referral sources for domestic violence".

Questions on knowledge and attitudes about domestic violence were also asked. All participants received the questions in the same order. The post-test repeated the 24 questions, with some differences in the order of the questions and, for some questions, a reversal of the direction from positive to negative.

Jefferson Scale of Health Care Provider Empathy

The Jefferson Scale of Health Care Provider Empathy[19] includes 20 Likert-type items answered on a 7-point scale (1=strongly disagree, 7=strongly agree). Some of the words were modified with permission from the authors to address dentists. Some questions are reverse scored items, whereas others are directly scored.

Methods of statistical analysis

A sample size of 150 participants was recruited. Logistic regression was used to globally assess baseline balance between the two study groups[27] in demographic (age,

gender, race), dental practice (specialty or general practitioner), and domestic violence training (hours and location of previous domestic violence training) characteristics, as well as the 24 pretest questions about domestic violence simultaneously.

The effect of the AVDR tutorial on the change in mean scores from pre to post for all 24 test questions was assessed simultaneously, using resampling-based stepdown bootstrap multiple testing[28] (1 million resamples). Interactions were tested between the intervention and other factors, including specialty (general practitioner vs. specialist), gender, race (white vs. nonwhite), graduation year (pre-1999 vs. 1999 or later), and domestic violence training (0 hours vs. >0 hours), and total empathy score (< 117 vs. > 117, the median score).

A factor analysis with orthogonal rotation and X factors was conducted of the dentists' scores on the revised Jefferson Scale of Physician Empathy instrument, in an attempt to replicate Hojat's findings of three conceptually distinct empathy components. We also conducted t-tests to look for significant differences in empathy scores between men and women and between the intervention and control groups, as well as correlations to look for relationships between empathy scores and baseline, posttest, and change scores on the domestic violence assessment items.

D. RESULTS

A total of 177 participants were recruited. Three participants were excluded because either the computer failed to give a post-test, failed to save the data obtained, or failed to administer all the questions and part of the tutorial. Of the resulting 174 participants, there were 88 in the control group and 86 in the experimental group; 105 were males (60.3 percent), 3 (1.7 percent) American Indian or Alaskan Native, 84 (48.3 percent) White, not Hispanic, 10 (5.7 percent) Hispanic, 70 (40.2 percent) Asian/Pacific Islander, and 7 (4 percent) Other/Unknown.

Participants were offered a choice of gift cards. Ninety participants (51.7 percent) wanted the Target gift cards, 44 participants (25.3 percent) the Safeway gift cards, 28 (16.1 percent) the Starbucks gift cards, 10 (5.7 percent) the REI gift cards and 2 participants (1.1 percent) the golf balls.

There was no statistically significant difference between the study design groups in demographic, educational, or dental practice characteristics (chi-square = XX, df = DD, p = 0.YYY). There were no statistically significant differences between the demographic groups on scores for any of the 24 baseline questions.

Effects of the AVDR Domestic Violence Tutorial

Table 1 shows the mean change scores (and standard deviations) for the experimental and control groups on each of the 24 questions asked in the domestic violence assessment instrument.

For all 12 questions about intentions to practice AVDR and perceived knowledge of helping patients with domestic violence, on average, the dentists who received the

tutorial improved their scores significantly more than did the dentists in the control group ($p < 0.002$). The tutorial had less effect on questions pertaining to beliefs or attitudes about helping patients with domestic violence; the intervention group raised their scores significantly more than the control group on 4 out of 12 of such questions (all $p < 0.01$). Those questions were: (1) "I believe I can recognize and help victims of domestic violence" (2) "How much do you feel it is within dentists' role to ask patients about their personal lives, such as their abusive relationships, when they identify signs of abuse?" (3) "What is your attitude toward helping patients who are victims of domestic violence in terms of importance?" and (4) "What is your attitude toward helping patients who are victims of domestic violence in terms of difficulty?"

Overall, the tutorial significantly improved scores on 16 of the 24 assessment items (adjusting for multiple comparisons). We found no significant differences when testing for intervention effects by specialist/generalist category, gender, race, year of graduation, having had previous domestic violence training, or empathy.

Empathy Scores

Using principal-component factor analysis, we essentially failed to replicate Hojat's factorization of the empathy scale. No separate interpretable factors were found. Accordingly, the total empathy score was used in further analyses pertaining to empathy.

For the entire sample, the mean total empathy score was 115.5 (SD = 11.87), and the range was 77 – 140 (possible range = 20-140). There was no difference between the intervention (mean = 115.18, SD= 12.29) and control (mean = 115.83, SD = 11.49)

groups in mean baseline empathy score. Females scores were higher than males but not statistically significant (respective means: 117.28, SD= 11.02 and 114.33, SD = 12.32).

The total empathy scores correlated significantly with baseline (and posttest) scores on the domestic violence assessment total score (baseline Pearson r = 0.34, $p <$ 0.0001; posttest r = 0.40, $p < 0.0001$). Empathy did not correlate with change scores (posttest minus pretest) for the total domestic violence assessment (r = 0.13, $p = 0.092$). Looking at the relationship between empathy and subscales of the domestic violence instrument, empathy correlated with the baseline and posttest, but not change scores for intended behavior (AVDR practices) (baseline r = 0.19, $p < 0.01$; posttest r = 0.26, $p < 0.001$) and for beliefs/attitudes about helping patients who are domestic violence victims (baseline r = 0.41, $p < 0.001$; posttest r = 0.49, $p < 0.0001$). Empathy scores did not correlate with perceived knowledge questions at baseline or perceived knowledge change scores (though they did correlate with perceived knowledge at posttest r = 0.19, $p < 0.01$).

E. DISCUSSION

This study tested the efficacy of an educational and behavioral change intervention designed to help dentists effectively overcome their reluctance to identify and treat victims of domestic violence, and to effect positive changes in their knowledge, attitudes, and behaviors with respect to caring for their patients. The ultimate goal is to help prevent victims of domestic violence who seek dental care from being subjected to further violence and associated oral trauma. Results indicate that the intervention works for intended practices (AVDR), perceived knowledge of domestic violence, and how to help victims of domestic violence. After taking the tutorial, dentists report that they would be more likely to inquire about a patient's safety after recognizing injuries to the head or neck. This change in practice could greatly increase the number of victims who are identified at dental visits. The first step, asking about abuse, is often the hardest for any health care provider. [25] After taking the tutorial, dentists reported that they now felt empowered to get through this first step and open the door for their patients. Patients report that it was often a health care provider who first made them "think" about their abusive situation and eventually get out of that abusive relationship.[24] Surveys have found that once abuse is identified, primary care physicians are more likely to follow-up with counseling and referrals with domestic violence than with other patient risks like smoking.[29]

The tutorial was less effective in changing beliefs and attitudes of dentists about domestic violence. Examples of questions that assess beliefs are: "If a victim does not disclose the abuse, there is nothing I can do to help"; "Dentists should not be responsible for identifying cases of domestic violence"; "Dentists have an important role in

addressing domestic violence"; and "What is your attitude toward helping patients who are victims of domestic violence: in terms of your time and rewards associated with it?" Although one would think that attitudes and beliefs would coincide with intended practices, we find here that they do not. This may show that dentists may believe that they cannot help their patients of abuse but they are willing to try to help and not allow their own beliefs to influence the best treatment for their patients. It may also indicate that although a 15 minute computer-based intervention may not change dentists core beliefs and attitudes, it can change how they pragmatically address the issues.

Interestingly, most patients have positive views of their dentist and trust them.[30] According to the American Dental Association, patients are encouraged to see their dentists twice a year, and this is a unique opportunity for the dentist and staff to open up dialogue with their patients. Since dentists work predominantly in the head and neck region, they may be the first to identify any signs of abuse. The first thing the tutorial offers the dentists is information on how to identify signs of abuse and then the program presents different ways the dentist can start a dialog with their patients regarding the issue of domestic violence and validate the patient. The tutorial also educates dentists on how to document and refer patients when appropriate. While some dentists feel it is not their place to get involved, the AVDR tutorial provides simple strategies for dentists to help their patients. Dentists often feel they need to "cure" their patients' oral problems and may take a similar approach to the issue of domestic violence. The AVDR tutorial allows dentists to help victims of domestic violence by opening the door for their patients to rethink their abusive situation.

Initially, the tutorial was used in a randomized clinical trial with dental students.[15] For the most part, we found the same pattern of results for dentists and dental students. The tutorial significantly improved knowledge and intended behaviors on domestic violence for both study design groups. Some minor differences in beliefs and attitudes among dentists when compared to dental students were found. Dentists improved their scores on four of the belief and attitude questions whereas the dental students showed no change. The tutorial appears equally effective across demographic variables such as age, gender, race, etc.

We included a measure of empathy in this study because victims of domestic violence wish their health care practitioners displayed more empathy towards them.[24] We thought that those dentists who were more empathetic would be more receptive to the issue of domestic violence. This was not proven. Using Hojat's empathy scale, we found that empathy is related to baseline scores (and posttest scores) of intended practices, beliefs/attitudes, but not perceived knowledge. It is also not related to intervention effects. This is consistent with the idea that empathy is a stable trait and not easily influenced by the intervention. Females scored slightly but not significantly higher on empathy scores than males.

There are several limitations to this study. The sample was a convenience sample of dentists willing to take the tutorial for a small reimbursement, which introduces a potential bias. The post-test immediately follows the tutorial, so long-term effects of the tutorial were not assessed. There was a lack of follow up with participants to see if this has helped them in their clinical practices. Yet, the findings suggest that by improving intended behaviors and knowledge about domestic violence, interactive multimedia

tutorials can be an effective medium for preparing dental students and dentists to triage for domestic violence.

We acknowledge that there are many barriers in screening for domestic violence in oral health care settings. Dentists must be able to recognize and respond appropriately to signs of abuse. The literature is lacking in intervention models to help dentists take the appropriate steps in screening for abuse. Love et al, 2001,[13] found that as little as one hour of domestic violence education increased the likelihood that dentists would screen for abuse. The AVDR tutorial is one approach to educating and addressing the responsibility of dentists and providing them with specific intervention behaviors that can be applied within the scope of their practice.

Advances in technology have made the dissemination of multimedia educational programs highly efficient, and computer assisted instruction has been shown to be an effective method of dental education in addition to the traditional classroom setting.[31] Harris et al., found that a two-hour, case based educational program for physicians delivered over the Internet improved physicians' confidence and beliefs in treating domestic violence patients as effectively as a more intensive, classroom-based approach.[32] A computer-based tutorial would also provide instant feedback and enhance performance.[33] The next steps to take would be to disseminate the AVDR tutorial to a wider audience and to measure the tutorial's long term impact. To be able to integrate the tutorial into dental schools nationwide and offer it on the Internet or DVD for dentists and other oral health care professionals would be a great step forward in dental education regarding abuse.

F. CONCLUSION

The AVDR tutorial is a quick and effective way to increase knowledge and awareness of domestic violence among oral health care practitioners. It offers simple strategies that enable dentists to respond to domestic violence in their clinical practices. The AVDR tutorial would be effective among dental students and dentists nationwide.

G. REFERENCES

1. AMA Council on Scientific Affairs. Violence against women. Relevance for medical practitioners. *JAMA* 1992;267:3184-89.
2. Novello A RM, Saltzman L, Shosky J. From the Sugeon General, US Public Health Service. *JAMA* 1992;267:3132.
3. Novello AC, Rosenberg M, Saltzman L, Shosky J. A medical response to domestic violence. *JAMA* 1992;267:3132.
4. American Medical Association. Health and Justice: Conference Proceedings. Paper presented at: National Conference on Family Violence, 1994; Washington DC.
5. Flitcraft A, Hadley S, Hendricks-Matthews M, McLeer S, Warshaw C. Diagnostic and treatment guidelines on domestic violence. Chicago, IL: American Medical Association; 1992.
6. Ochs HA, Neuenschwander MC, Dodson TB. Are head, neck and facial injuries markers of domestic violence? *J Am Dent Assoc* 1996;127(6):757-61.
7. Shepherd JP, Gayford JJ, Leslie IJ, Scully C. Female victims of assault: a study of hospital attenders. *J. Cranio-Max.-Fac. Surg.* 1988;16:233-37.
8. McDowell JD, Kassebaum DK, Fryer GE, Jr. Recognizing and reporting domestic violence: a survey of dental practitioners. *Spec Care Dentist* 1994;14(2):49-53.
9. Chiodo GT, Tilden VP, Limandri BJ, Schmidt TA. Addressing family violence among dental patients: assessment and intervention. *J Am Dent Assoc* 1994;125(1):69-75.

10. Statement 99H-1996, Policy Statement - Expansion of ADA Efforts to Educate Dental Professional in Recognizing and Reporting Abuse and Neglect. American Dental Association Transactions. Chicago: American Dental Association.; 1996. p. 684.

11. Orthodontics AAo. ADA moves to expand educational efforts to recognize signs of family violence and abuse. *The Bulletin* 1997;6.

12. Centers for Disease Control and Prevention NCfCDPaHP. Behavioral risk factor surveillance system. Prevalence data. Nationwide - 2002 oral health. 2002.

13. Love C, Gerbert B, Caspers N, Bronstone A, Perry D, Bird W. Dentists' attitudes and behaviors regarding domestic violence: The need for an effective response. *JADA* 2001;132:85-93.

14. Cohn F, Salmon ME, Stobo JD, editors. Confronting chronic neglect: the education and training of health professionals on family violence. Washington DC: National Academy Press; 2002.

15. Danley D, Gansky S, Chow D, Gerbert B. Preparing dental students to recognize and respond to domestic violence: the impact of a brief tutorial. *J Am Dent Assoc* 2004;135:67-73.

16. Sugg NK, Inui T. Primary care physicians' response to domestic violence: opening Pandora's box. *Journal of the American Medical Association* 1992;267:3157-60.

17. Gerbert B, Moe J, Caspers N, Salber P, Feldman M, Herzig K, et al. Simplifying physicians' response to domestic violence. *West J Med* 2000;172:329-31.

18. Gerbert B, Moe J, Caspers N, Salber P, Feldman M, Herzig K, et al. Physicians' response to victims of domestic violence: toward a model of care. *Women Health* 2002;35(2/3):1-22.

19. Hojat M GJ, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: definition, components, measurement, and relationship to gender and specialty. *American Journal of Psychiatry* 2002;159(9):1563-9.

20. Gerbert B, Johnston K, Caspers N, Bleecker T, Woods A, Rosenbaum A. Experiences of battered women in health care settings: a qualitative study. *Women Health* 1996;24(3):1-17.

21. Hojat M GJ, Mangione S, Nasca TJ, Veloski JJ, Erdmann JB, Callahan CA, Magee M. Empathy in medical students as related to academic performance, clinical competence, and gender. *Medical Education* 2002;36:1-6.

22. Letterie G. How virtual reality may enhance training in obstetrics and gynecology. *Am J Obstet Gynecol* 2002;187(3):S37-40.

23. Levesque DR KG. Meeting the challenge of continuing education with eLearning. *Radiology Management* 2002;24:40-3.

24. Gerbert B, Abercrombie P, Caspers N, Love C, Bronstone A. How health care providers help battered women: the survivor's perspective. *Women & Health* 1999;29(3):115-35.

25. Gerbert B, Caspers N, Milliken N, Berlin M, Bronstone A, Moe J. Interventions that help victims of domestic violence. *J Fam Pract* 2000;49:889-95.

26. Gerbert B, Caspers N, Bronstone A, Moe J, Abercrombie P. A qualitative analysis of how physicians with expertise in domestic violence approach the identification of victims. *Annals of Internal Medicine* 1999;131(8):578-84.

27. Harrell FE Jr. Regression Modeling Strategies with Applications to Linear Models, Logistic Regression, and Survival Analysis. New York: Springer; 2001.

28. Westfall P, Young S. Resampling-based Multiple Comparison Testing: Examples and Methods for p-Value Adjustment. New York: John Wiley & Sons; 1993.

29. Gerbert B, Gansky S, Tang JW, McPhee SJ, Carlton R, Herzig K, et al. Domestic violence compared to other health risks: a survey of physicians' beliefs and behaviors. *American Journal of Preventive Medicine* 2002;23(2):82-90.

30. Gerbert B. Dentists and the patients who love them: professional and patient views of dentistry. *JADA* 1994;125(March 1994):265-72.

31. Eynon R PG, Walmsley AD. Dental undergraduates expectations and opinions of Web-based courseware to supplemental traditional teaching methods. *European Journal of Dental Eduation* 2003;7:103-10.

32. Harris J, Kutob R, Surprenant Z, Maiuro R, Delate T. Can Internet-based education improve physician confidence in dealing with domestic violence? *Fam Med* 2002;34(4):287-92.

33. Gerbert B, Bronstone A, Maurer T, Berger T, McPhee S, Caspers N. The effectiveness of an Internet-based tutorial in improving primary care physicians' skin cancer triage skills. *Journal of Cancer Education* 2002;17:7-11.

APPENDICES

Appendix I: Table of Domestic Violence Assessment Instrument Results.....25

Appendix II: Domestic Violence Assessment Instrument.....27

Appendix III: Scale of Dentist Empathy Based on the Scale of Health Care Provider Empathy (modified with permission).....36

Apppendix IV: Demographic Questionnaire.....38

Appendix V: Consent to Participate in Research.....39

Appendix I

Table 1: Domestic Violence Assessment Instrument Results

Item	Control Group Mean Change Scores (SD) N=88	Experimental Group Mean Change Scores N=86	Result p-Values
Intended AVDR Practrices*			
If I recognized injuries to the head or neck, I would ask the patient something like, "are	0.1818 (1.0455)	1.3256 (1.1925)	<.0001
If a patient did not dislcose domestic violence, but I suspected it, I would tell her something like, "no one deserves to be	0.2159 (0.7798)	1.6047 (1.3041)	<.0001
If I identified a pateint as being abused, I would document the abuse in the patient's	-0.1250 (0.9073)	0.5116 (1.2718)	0.0018
If I suspected a patient was being abused, I would offer referral sources for domestic	-0.2159 (0.7497)	0.7442 (1.1498)	<.0001
Perceived Knowledge**			
How much do you feel you know about: the prevalence of domestic violence in dental	0.0455 (0.5232)	0.8488 (0.8191)	<.0001
....common indicators of abuse?	-0.0909 (0.5801)	0.5930 (0.7878)	<.0001
....your role in recognizing and helping domestic violence victims?	0.0000 (0.5872)	0.6977 (0.7981)	<.0001
....how to ask patients about abuse?	0.0341 (0.4901)	1.1279 (0.8231)	<.0001
....how to give the message to patients that no one deserves to be abused?	0.0909 (0.6184)	1.1279 (0.8512)	<.0001
....how to help suspected victims of abuse when they do not disclose having been	0.2273 (0.6903)	1.2209 (0.8596)	<.0001
....how to document abuse abuse in the	0.1136 (0.5346)	1.2209 (0.9381)	<.0001
....how to refer victims to resources for	0.1364 (0.5505)	1.0349 (0.9133)	<.0001
Beliefs about DV and Dentists †			
If a victim does not disclose the abuse, there is nothing I can do to help.	1.4659 (1.3213)	1.7209 (1.5389)	0.537
Dentists should not be responsible for identifying cases of domestic violence.	1.9091 (1.5657)	2.0349 (1.7043)	0.8257
Dentists have an important role in addressing domestic violence.	-0.2159 (1.1492)	0.1744 (1.1082)	0.1445
There are specific things I can do to help a patient who is a victim of domestic violence	0.3636 (0.8467)	0.4419 (1.0129)	0.8257
I believe I can recognize and help victims of domestic violence.	0.1591 (0.8426)	0.6512 (1.0377)	0.0058
Helping victims of domestic violence is	2.4432 (1.3118)	2.7209 (1.2710)	0.4609
Intervening with victims of domestic violence is a thankless and ungratifying job.	1.8977 (1.6120)	2.2674 (1.3322)	0.3746
I am committed to helping victims of	0.0227 (0.9344)	0.3837 (1.2095)	0.1476

Appendix I

Table 1: Domestic Violence Assessment Instrument Results

Attitudes about DV and Dentists ‡			
How much do you feel it is within dentists' role to ask patients about their personal lives, such as their abusive relationships,	-0.0341(1.0108)	0.9884 (1.3762)	<.0001
What is your attitude toward helping patients who are victims of domestic violence: in	-0.0909 (0.8392)	0.5 (1.3262)	0.0047
What is your attitude toward helping patients who are victims of domestic violence: in	0.2955 (1.4555)	1.4651 (1.9202)	0.0001
What is your attitude toward helping pateints who are vicitms of domestic violence: in terms of your time and rewards associated	0.1477 (0.5781)	0.5349 (1.2049)	0.0531
* Items were scored from 1-5 (never, seldom, sometimes frequently, always).			
** Items were scored from 1-4 (none, some,			
† Items were scored from 1-5 (strongly disagree, disagree, not sure, agree, strongly			
‡ Items were scored from 1-7 with various endpoints as appropriate for item, with improvement represented by higher scores.			

Appendix II

Domestic Violence Assessment Instrument
(Pre-test and Post-test Questions)

1. If I recognized injuries to the head or neck, I would ask the patient something like, "are you safe at home?"

   1-Never
   2-Seldom
   3- Sometimes
   4-Frequently
   5-Always

2. If a patient did not disclose domestic violence, but I suspected it, I would tell her something like "no one deserves to be abused."

   1-Never
   2-Seldom
   3- Sometimes
   4-Frequently
   5-Always

3. If I suspected a patient was being abused, I would offer referral sources for domestic violence.

   1-Never
   2-Seldom
   3- Sometimes
   4-Frequently
   5-Always

4. If I identified a patient as being abused, I would document the abuse in the patient's chart.

   1-Never
   2-Seldom
   3- Sometimes
   4-Frequently
   5-Always

5. How much do you believe you know about:
   the prevalence of domestic violence in dental settings?

   1-None
   2-Little
   3-Some
   4-A Lot

6. How much do you believe you know about:

common indicators of abuse?

1-None
2-Little
3-Some
4-A Lot

7. How much do you believe you know about:
your role in recognizing and helping domestic violence victims?

1-None
2-Little
3-Some
4-A Lot

8. How much do you believe you know about:
how to ask patients about abuse?

1-None
2-Little
3-Some
4-A Lot

9. How much do you believe you know about:
how to give the message to patients that no one deserves to be abused?

1-None
2-Little
3-Some
4-A Lot

10. How much do you believe you know about:
how to help suspected victims of abuse when they do not disclose having been abused?

1-None
2-Little
3-Some
4-A Lot

11. How much do you believe you know about:
how to document abuse in the dental chart?

1-None
2-Little
3-Some
4-A Lot

12. How much do you believe you know about:
how to refer victims to resources for assistance?

1-None

2-Little
3-Some
4-A Lot

13. If a victim of domestic violence does not disclose the abuse, there is nothing I can do to help.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

14. Dentists should not be responsible for identifying cases of domestic violence.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

15. Dentists have an important role in addressing domestic violence.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

16. There are specific things I can do to help a patient who is a victim of domestic violence.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

17. I believe I can recognize and help victims of domestic violence.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

18. Helping victims of domestic violence is impossible to do.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree

5-Strongly Agree

19. Intervening with victims of domestic violence is a thankless and ungratifying job.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

20. I am committed to helping victims of domestic violence.
    1-Strongly Disagree
    2-Disagree
    3-Not Sure
    4- Agree
    5-Strongly Agree

21. How much do you feel it is within dentists' role to ask patients about their personal lives, such as their abusive relationships, when they identify signs of abuse?
    1-Not at all within their role
    2-
    3-
    4-
    5-
    6-
    7-Entirely within their role

22. What is your attitude toward helping patients who are victims of domestic violence: in terms of importance?
    1-Not important
    2-
    3-
    4-
    5-
    6-
    7-Important

23. What is your attitude toward helping patients who are victims of domestic violence: in terms of difficulty?
    1-Difficult

2-
3-
4-
5-
6-
7-Easy

24. What is your attitude toward helping patients who are victims of domestic violence: in terms of your time and rewards associated with it?
1-Not worth my time
2-
3-
4-
5-
6-
7-Well worth my time

25. Even if a victim of domestic violence does not disclose the abuse, I can help.
1-Strongly Disagree
2-Disagree
3-Not Sure
4- Agree
5-Strongly Agree

26. Dentists should be responsible for identifying cases of domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

27. Dentists do not have an important role in addressing domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

28. There is nothing I can do to help a patient who is a victim of domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

29. I do not believe I can recognize and help victims of domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

30. Helping victims of domestic violence is possible.
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

31. It can be gratifying to intervene with victims of domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4- Agree
5-Strongly Agree

32. I am not committed to helping victims of domestic violence.
1-Strongly Disagree
2-Disagree
3-Not Sure
4- Agree
5-Strongly Agree

33. How much do you believe you know about:
the prevalence of domestic violence in dental settings?
1-None
2-Little
3-Some
4-A Lot

34. How much do you believe you know about:
common indicators of abuse?
1-None
2-Little
3-Some
4-A Lot

35. How much do you believe you know about:
your role in recognizing and helping domestic violence victims?

1-None
2-Little
3-Some
4-A Lot

36. How much do you believe you know about:
how to ask patients about abuse?

1-None
2-Little
3-Some
4-A Lot

37. How much do you believe you know about:
how to give the message to patients that no one deserves to be abused?

1-None
2-Little
3-Some
4-A Lot

38. How much do you believe you know about:
how to help suspected victims of abuse when they do not disclose having been abused?

1-None
2-Little
3-Some
4-A Lot

39. How much do you believe you know about:
how to document abuse in the dental chart?

1-None
2-Little
3-Some
4-A Lot

40. How much do you believe you know about:
how to refer victims to resources for assistance?

1-None
2-Little
3-Some
4-A Lot

41. How much do you feel it is within a dentists' role to ask patients about their personal lives, such as their abusive relationships, when they identify signs of abuse?

1- Not at all within their role
2-
3-
4-
5-
7- Entirely within their role

42. What is your attitude toward helping patients who are victims of domestic violence: in terms of importance?

1- Not important
2-
3-
4-
5-
6-
7-Important

43. What is your attitude toward helping patients who are victims of domestic violence: in terms of difficulty?

1- Difficult
2-
3-
4-
5-
6-
7-Easy

44. What is your attitude toward helping patients who are victims of domestic violence: in terms of your time and rewards associated with it?

1-Not worth my time
2-
3-
4-
5-
6-
7- Well worth my time

45. If I recognized injuries to the head or neck, I would ask the patient something like, "are you safe at home?"

1-Never
2-Seldom
3- Sometimes

4-Frequently
5-Always

46. If a patient did not disclose domestic violence, but I suspected it, I would tell her something like "no one deserves to be abused."

1-Never
2-Seldom
3- Sometimes
4-Frequently
5-Always

47. If I suspected a patient was being abused, I would offer referral sources for domestic violence.

1-Never
2-Seldom
3- Sometimes
4-Frequently
5-Always

48. If I identified a patient as being abused, I would document the abuse in the patient's chart.

1-Never
2-Seldom
3- Sometimes
4-Frequently
5-Always

Appendix III

Scale of Dentist Empathy Based on the Jefferson Scale of Physician Empathy* (HP-Version R) (Modified with Permission)

ID #: _____

Instructions: Please indicate the extent of your agreement or disagreement with *each* of the following statements by writing the appropriate rating number on the underlined space provided before each statement. Please use the following 7-point scale (*a higher number on the scale indicates more agreement):*

1------2------3------4------5------6------7
Strongly Disagree ***Strongly Agree***

---

1. __ My understanding of how my patients and their families feel does not influence dental or surgical treatment.
2. __ My patients feel better when I understand their feelings.
3. __ It is difficult for me to view things from my patients' perspectives.
4. __ I consider understanding my patients' body language as important as verbal communication in caregiver-patient relationships.
5. __ I have a good sense of humor that I think contributes to a better clinical outcome.
6. __ Because people are different, it is difficult for me to see things from my patients' perspectives.
7. __ I try not to pay attention to my patients' emotions in history taking or in asking about their physical and dental health.
8. __ Attentiveness to my patients' personal experiences does not influence treatment outcomes.
9. __ I try to imagine myself in my patients' shoes when providing care to them.
10. __ My patients value my understanding of their feelings which is therapeutic in its own right.
11. __ Patients' illnesses can be cured only by medical or surgical treatment; therefore, emotional ties to my patients do not have a significant influence on medical or surgical outcomes.
12. __ Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints.

13. __ I try to understand what is going on in my patients' minds by paying attention to their non-verbal cues and body language.

14. __ I believe that emotion has no place in the treatment of oral disease.

15. __ Empathy is a therapeutic skill without which success in treatment is limited.

16. __ An important component of the relationship with my patients is my understanding of their emotional status, as well as that of their families.

17. __ I try to think like my patients in order to render better care.

18. __ I do not allow myself to be influenced by strong personal bonds between my patients and their family members.

19. __ I do not enjoy reading non-dental literature or the arts.

20. __ I believe that empathy is an important therapeutic factor in dental or surgical treatment.

---

*Hojat M, Gonnella J, Nasca T, Mangione S, Vergare M, Magee M: Physician Empathy: Definition, Components, Measurement, and Relationship to Gender and Specialty. Am J Psychiatry 2002; 159: 1563-1569

Appendix IV

Demographic Questions

1. Respondent #

2. How old are you? ##

3. What is your gender?
   1-Male
   2-Female

4. What is your race/ethnicity?
   1-American Indian or Alaskan Native
   2-White, not of Hispanic Origin
   3-Black, not of Hispanic Origin
   4-Hispanic
   5-Asian/Pacific Islander
   6-Other or Unknown

5. What is your specialty?
   1-General Dentist
   2-Periodontist
   3-Prosthodontist
   4-Oral Surgeon
   5-Pediatric Dentist
   6-Orthodontist
   7-Endodontist
   8-Other

6. In what year did you graduate from dental school? ####

7. How many hours of training about domestic violence have you had?
   1-None
   2-1-2 hour
   3-3-5 hours
   4- >5 hours

8. Where did you receive training about domestic violence?
   1- Never received training
   2- In dental school
   3- CDE program
   4- In dental school and CDE program

9. Randomization
   PR- pre and post test
   PPI- pretest, twice

10. In the past year, how many of your patients did you identify as being physically abused by their intimate partner? ##

Appendix V

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

CONSENT TO BE A RESEARCH SUBJECT
IN THE
DOMESTIC VIOLENCE AND ORAL HEALTH CARE STUDY

PURPOSE AND BACKGROUND

Barbara Gerbert, PhD, Professor, Division of Behavioral Science, School of Dentistry, University of California San Francisco is conducting a research study to better understand how the oral health care system serves victims of domestic violence. Specifically, this study will investigate oral health care professionals' ability to identify and effectively treat patients who are victims of domestic violence.

PROCEDURES

If you agree to participate in the study, the following will occur:

1. You will be asked to complete a written questionnaire designed to asses your level of empathy. It will take you 5 minutes or less to complete the questionnaire.

2. You will be asked to complete a computer educational program designed to increase your knowledge about domestic violence as well as your skills in responding effectively to patient-victims of domestic violence. It will take you 20 minutes or less to complete the computer program and 10 minutes to complete the questionnaire or questionnaires.

3. You will be asked to complete one or two questionnaires regarding your knowledge, attitudes, and clinical practice behaviors regarding treating patients who are victims of domestic violence. You may be asked to complete the first questionnaire prior to beginning the computer educational program and you may be asked to complete a second questionnaire at the conclusion of the program.

4. You will be asked to provide your name and mailing address.

(over)

RISKS

Participation in research may involve a loss of privacy; however, we will take all precautions to ensure confidentiality of your responses. Neither your name nor any other identifying information will be on any research materials. Participants will be identified on research materials only by unique codes. The documents that link the codes to the subjects will be kept under lock and key by the Principal Investigator, and these documents will be destroyed at the conclusion of the study. No individual identities will be used in any reports or publications that may result from this study.

BENEFITS

You may increase your ability to identify and respond effectively to patients who are victims of domestic violence.

REIMBURSEMENT

You will receive either a gift card worth $15 or a sleeve of golf balls.

QUESTIONS

If you have any questions, please contact Barbara Gerbert, PhD, Principal Investigator, at (415) 502-7283. If you have any comments or concerns about participation in this study, please first talk with the Principal Investigator. If for some reason this is not possible, you may contact the University of California San Francisco, Committee on Human Research, which is concerned with the protection of volunteers in research projects. You may reach the committee office between 8 a.m. and 5 p.m., Monday through Friday, by calling (415) 476-1814, or by writing to the Committee on Human Research, Box 0962, University of California San Francisco, San Francisco CA 94143.

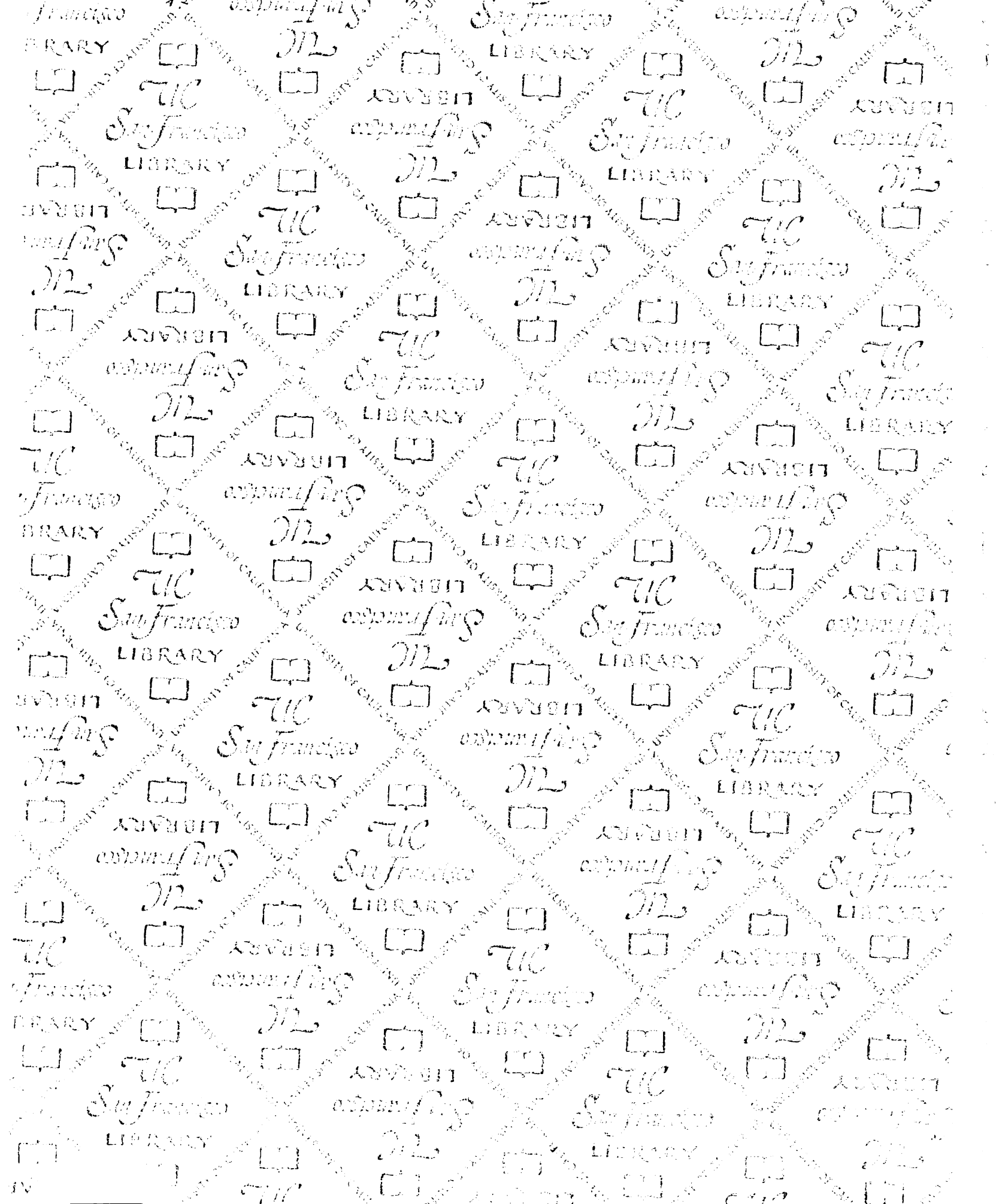
CONSENT

You will be given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study, or to withdraw from it at any point.

If you agree to participate, please sign below.

_____	_____
Date	Signature of Study Participant
_____	_____
Date	Signature of Person Obtaining Consent


UC
San Francisco
LIBRARY

8071303
3 1378 00807 1303
UC San Francisco LIBRARY