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# A Study of Visible Tattoos in Entry-Level Dental Hygiene Education Programs

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**A STUDY OF VISIBLE TATTOOS IN ENTRY-LEVEL DENTAL HYGIENE  
EDUCATION PROGRAMS**

by

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## ABSTRACT

### A STUDY OF VISIBLE TATTOOS IN ENTRY-LEVEL DENTAL HYGIENE EDUCATION PROGRAMS

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Director: Prof. Susan Lynn Tolle

**Purpose:** The purpose of this study was to survey entry-level dental hygiene program directors in the United States to assess their perceptions of dental hygienists with visible tattoos as well as their satisfaction with current program tattoo policies. **Methods:** After IRB approval, a 14-item survey was administered online to 340 entry-level dental hygiene programs. Participants used a seven-point Likert type scale ranging from strongly disagree (1) to strongly agree (7), to indicate their opinions of visible tattoos on the basis of professionalism, concern within the school, dress code policy satisfaction, tolerance toward visible tattoos, whether tattoos needed to be covered, impact on future employment, and impact on community. Participants also responded to questions concerning current program policies on visible tattoos, in addition to the number and visibility of personal tattoos. **Results:** An overall response rate of 43% was obtained, with 141 program directors completing the survey. The majority of respondents were 50 years of age and older (82%). Only one respondent reported having a visible tattoo. Eighty percent of respondents reported having a program dress code policy on visible tattoos, with the majority (97%) requiring visible tattoos to be covered. Results revealed both students ( $M=5.57, p<.0005$ ) and faculty ( $M=5.76, p<.0005$ ) with visible tattoos were perceived as significantly less professional. Significantly more respondents viewed visible tattoos on students ( $M=4.73, p<.0005$ ) to be a concern when compared to faculty. Most participants agreed that faculty should discuss the impact of visible tattoos on future employment opportunities, as well as believe that the community would view the school as less professional if students had visible tattoos

( $p < 0.0005$ ). Tolerance toward tattoos ( $\beta = -0.36, p < 0.001$ ), but not age ( $\beta = -0.06, p = 0.50$ ), was significantly associated with satisfaction concerning program tattoo policies. A lower tolerance (negative attitude) towards visible tattoos ( $\beta = -0.73, p < 0.001$ ) was also associated with an increased likelihood that a program dress code policy on visible tattoos existed. Conclusions: The upsurge of individuals with visible tattoos in society is evident and has extended into the healthcare arena. This study highlights dental hygiene program directors' perceptions of students and faculty with visible tattoos. Results show that visible tattoos were not perceived favorably and that director's personal perceptions may have influenced school dress code policies. These findings provide evidence based information for hygienists, students, faculty, administrators and hiring managers as they formulate policies relating to body art.

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## TABLE OF CONTENTS

	Page
LIST OF TABLES.....	vi
Chapter	
I. INTRODUCTION.....	1
STATEMENT OF THE PROBLEM.....	2
SIGNIFICANCE OF THE PROBLEM.....	3
DEFINITION OF TERMS.....	4
RESEARCH HYPOTHESES.....	5
II. REVIEW OF THE LITERATURE.....	7
III. METHODOLOGY.....	15
IV. RESULTS.....	17
V. DISCUSSION.....	22
LIMITATIONS.....	28
VI. CONCLUSIONS.....	29
REFERENCES.....	30
APPENDICES.....	41
A. SURVEY/QUESTIONNAIRE.....	41
B. IRB EXEMPTION.....	47
VITA.....	48

**LIST OF TABLES**

Table	Page
1. Demographic Data by Number and Percentage of Total Participants .....	34
2. Region of Program Residence by Number and Percentage of Total Participants .....	35
3. Percentage Scores of Respondent's Perceptions of Visible Tattoo Policies.....	36
4. One Sample <i>t</i> -test Results Comparing Mean Values of Program Director Responses to Neutral Rating.....	37
5. Open Ended Responses Concerning Program Policy Description and Identification of Program Policy Maker .....	38
6. Summary of Multiple Regression Analysis for Age and Tolerance Scores .....	39
7. Logistic Regression Analysis on Likelihood of Instituting Program's Dress Code Policy on Visible Tattoos.....	40

## CHAPTER I

### INTRODUCTION

Dental hygiene programs make important decisions about appearance and dress code policies relating to both faculty and student safety and professionalism. A new aspect of professional appearance becoming a concern in healthcare is the presence of visible tattoos.<sup>1-3</sup> Defined as an act of injecting pigment particles under the epidermis, tattooing has increased in popularity among all ages, socioeconomic groups and professions, while crossing gender, social class, and racial barriers.<sup>4,5</sup> Three in ten United States (U.S.) adults have a tattoo, yet negative stereotyping of individuals displaying tattoos is a well-documented cultural norm.<sup>5-7</sup> According to Pew Research, 45 million Americans have at least one tattoo, including 36 to 40% of adults aged 18-40, and approximately 30% of the younger generation's tattoos are visible.<sup>8-9</sup> This once unorthodox practice is commonly perceived as mainstream by many in today's society, especially among the Millennial generation.<sup>5,10-12</sup> However, older Americans are more likely to view tattooing negatively with 64% of persons over the age of 65 viewing current tattoo trends as a change for the worse.<sup>13</sup> Despite the increased prevalence, the presence of visible tattoos in the professional work environment is often viewed as inappropriate and unprofessional.<sup>1,3,14-15</sup>

Tattooing is often viewed negatively by hiring managers in both business and healthcare with research suggesting they would prefer not to hire someone with a visible tattoo.<sup>11,16-17</sup> Most likely related to negative stereotyping, research also indicates tattooed individuals have been perceived as displaying negative and risky behaviors related to drug and alcohol abuse, sexual activity, suicide threats, and illegal or violent behavior.<sup>5,7,18</sup> Studies in nursing indicate patients often hold negative perceptions of health care providers with visible tattoos which may adversely affect patient outcomes.<sup>1,3,19</sup> While negative stereotypes are still profound in today's existing

healthcare settings, the perceived normality of tattooing in some of the population challenges administrators to evaluate dress code policies and hiring practices.<sup>10,19-20</sup>

There is a lack of research on the effects of visible tattoos on the dental hygiene profession, as well as educational policies. Importantly, does the appearance of a health care professional impact patients' perceptions of professionalism and interpersonal relationships with patients, as well as influence care received?<sup>1,19,21-22</sup> Appearance is a powerful aspect of non-verbal interactions and is an essential mode of communication.<sup>1,21-23</sup> Brosky et. al., found that the appearance of the clinician influenced patients' perceptions of professionalism.<sup>23</sup> Moreover, patients' first impressions of both students and faculty affected the comfort and anxiety levels of patients.<sup>23</sup> In the female dominated profession of dental hygiene, visible tattoos may take on more significance as research indicates women are consistently rated less positively than men with visible tattoos.<sup>19,24</sup> Whether one agrees or disagrees, physical appearance influences the professional image of health care providers and visible tattoos have been reported to diminish professional image and credibility.<sup>1,19,21,23</sup> LaSala and Nelson advocate that even though various settings call for specific dress protocols, professional nurses should consistently be "sensitive to the image presented" and question if visible tattoos account for this sensitivity.<sup>21</sup> Research in regards to the effects of visible tattooing on the dental hygiene profession is lacking and necessary to establish valid dress and appearance protocols that promote professionalism and may ultimately foster improvement in interpersonal relationships with patients.

## **STATEMENT OF THE PROBLEM**

Minimal data is available on the perceptions of dental hygienists with visible tattoos or existing policies enforced in dental hygiene education. The purpose of this study is twofold; to determine the perceptions of dental hygiene program directors toward dental hygienists with

visible tattoos and determine current policies related to dress codes in United States dental hygiene programs. To fulfill this purpose, the following research questions were explored:

1. What are dental hygiene program directors' attitudes toward health care providers with visible tattoos?
2. What are the policies in dental hygiene programs concerning visible tattoos?
3. Do the attitudes of dental hygiene program directors towards visible tattoos effect whether a tattoo policy is instituted or tattoo policy satisfaction ratings?
4. Does the age of dental hygiene program directors affect whether a tattoo policy is instituted or tattoo policy satisfaction ratings?

### **SIGNIFICANCE OF THE PROBLEM**

Information obtained from this study may help dental hygiene programs directors make more valid and reliable decisions regarding program polices related to visible tattoos. Results may also help faculty and administrators assist students in understanding hiring practices related to visible tattoos and barriers they may face in employment settings. Teaching of professionalism is an important aspect in health care education because appearance affects patients' image of the health care professional.<sup>21</sup> A patient's first impression of a provider originates from physical appearance rather than that individual's professional background, skill, or knowledge.<sup>1,21</sup> LaSala and Nelson explained that while it can be beneficial to add one's personality to his or her attire, it should never be distracting to the professional image of that health provider.<sup>21</sup> Clinical dental hygienists, tend to infringe on the personal space of their patients merely because of their job requirements. Therefore, it is important to understand how visible tattoos effect the professional image of dental hygienists. The surge of tattoo popularity, especially among the generations just entering the workplace, challenges educational directors to adapt and enforce universal body

modification policies. Conclusively, this research may help oral health programs establish more fully developed, evidence-based policies and procedures.

With more awareness to indirect discrimination regarding existing tattoo policies, federal legislation may also reform its legal codes and policies for dress and appearance; research is essential in establishing regulations without discrimination.<sup>10,20</sup> Even though body art is not a protected characteristic, a legal altercation in civil rights could arise in the tattoo's relevance to aspects like religion or gender, if there is no documented evidence that tattoos negatively affect the profession.<sup>11,20,25</sup> To establish research in this growing area of concern, information needs to be collected to determine the current perception of dental hygienists with visible tattoos and the existing policies in professional dental hygiene education.

## **DEFINITION OF TERMS**

For the purpose of this study, the following key terms were defined:

1. Dental Hygiene Educator: Employed educator at an accredited university or college for dental hygiene education.
2. Dental Hygiene Student: Undergraduate enrolled in an accredited dental hygiene program.
3. Dental Hygiene Program Director: Executive administrator and coordinator of an accredited dental hygiene program.
4. Perception: One's personal view or initial impression of another based solely on the presence of physical appearance.
5. Employability: Attractive professional attributes that ensures competitiveness in a potential work field or specific position.
6. Visible tattoos: Tattoos visible while wearing traditional short sleeved scrubs (not including a lab coat or long sleeved shirts).

7. Hygienic: Displaying and promoting optimal health and physical well-being through physical appearance.
8. Professional: The attractive quality of a dental hygienist positively representing his or her field of expertise.
9. Prejudice: A stereotype that perceives negative characteristics in one's suitability for employment.
10. Indirect Discrimination: The disadvantageous effect on those with visible tattoos even though a uniform evidence-based protocol is established for all employees.<sup>25</sup>
11. Evidence-based protocol: Policy uniformly enforced based on scientific research displaying negative effects on the profession as a whole (does not include protected characteristics).<sup>25</sup>
12. Protected characteristics: Unlawful or direct discrimination against one's "age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion/beliefs, sex and sexual orientation."<sup>25</sup>
13. Tolerance: Permissive attitude toward visible tattoos.

## **RESEARCH HYPOTHESES**

The following null hypotheses were tested at .05 level of significance:

- 1:** There is no statistically significant difference in tattoo policy satisfaction ratings of dental hygiene program directors when comparing program directors who are more tolerant of visible tattoos to program directors who are less tolerant of visible tattoos.
- 2:** There is no statistically significant difference in tattoo policy satisfaction ratings of dental hygiene program directors when comparing program directors' age.
- 3:** There is no statistically significant difference in whether a tattoo policy is instituted when comparing dental hygiene program directors who are more tolerant of visible tattoos with dental

hygiene program directors who are less tolerant of visible tattoos.

**4:** There is no statistically significant difference in whether a tattoo policy is instituted when comparing program directors' age.

## CHAPTER II

### REVIEW OF THE LITERATURE

Tattooing has become increasingly widespread, representing a popular form of self-expression. The art created by injecting colored pigment particles deep under the epidermis to form a permanent design became popular among the general U.S. population by the late 20<sup>th</sup> century.<sup>26</sup> The 2016 Harris poll revealed that three in ten U.S. adults have at least one tattoo compared to two in ten adults in 2012, and among those tattooed, seven in ten reported having at least two tattoos.<sup>6</sup> Crossing gender, socioeconomic, religious, and professional borders, tattooing has become especially apparent in the Millennial generation.<sup>4-5,8,12</sup> According to Pew research, 36% of “Gen Nexters” or young Americans aged 18-25, have at least one tattoo, and with the next generation, “Gen Xers” tattooing is projected to grow to 40%.<sup>8</sup> This research shows that gender does not seem to be a factor with this increasing prevalence, representing an equal amount of tattoos among men and women.<sup>8</sup> One study found a greater overall reported prevalence of tattoos among men compared to women, but the highest rate of tattooing was found among women in their 20’s.<sup>5</sup> This popularity may be due to the integration of tattoos into consumer culture.<sup>27</sup>

Self-expression resonates in adult body modification literature, as tattooing becomes mainstream in today’s society.<sup>5,10-11</sup> This permanent symbol of individuality, popularly describes one’s identity within a group, unique characteristics, life-altering event, expression of beauty, or tolerance for pain.<sup>28</sup> A sense of belonging, commitment, and devotion to anything from a musical band to a religion can be put on permanent display. The freedom of the imagination when it comes to designing a specific tattoo, makes this body art unique from other body modifications. Tiggemann and Hopkins concluded that “tattooing, not body piercing, represented a bodily

expression of uniqueness.”<sup>4</sup> The celebration of birthdays, weddings and even the remembrance of deaths, can give a sense of joy and peace with the constant imprinted reminder. Lastly, the amount of physical endurance in the process of getting an intricate tattoo, especially something covering an entire body part, displays physical strength and pain tolerance.<sup>28</sup>

There are other less likely and even evolving motivations behind tattooing that are important to note when considering modern-day views. Addiction to the art, reward for an achievement, and impulsive behavior describes some of these less frequently noted inspirations.<sup>28</sup> Even more rare but equally influential, are tattoos relation to the field of medicine. Permanent makeup, corneal tattooing, gastrointestinal tattooing, and scar camouflage are various purposes for medical tattooing.<sup>29</sup> Kluger and Aldasouqi determined a new purpose for tattooing; “medical alert tattoos.”<sup>29</sup> This type of tattooing portrays instructions or the medical status of an individual so that in the case of an emergency, a good Samaritan or medical professional could respond accordingly to the unresponsive victim. Certain health conditions like diabetes and allergies to medications, are commonly found in this unique category. Emergency instructions regarding organ donor status and preferences for life support are also common “medical alert tattoos.”<sup>29</sup> This latest addition adds to the current legality issues surrounding contemporary tattoos.

There are conflicting results found in nursing literature regarding how patients, nurses, nursing faculty and nursing students perceive tattooed clinical nurses.<sup>1,19</sup> Thomas found nurses and nursing students to be more accepting of highly tattooed nursing professionals compared to patients and nursing faculty.<sup>1</sup> However, all participants rated the nurse with the most body art, including tattoos and piercings, the least caring, skilled, and knowledgeable.<sup>1</sup> In a study by Westerfield, patients’ perceptions of nurses being caring, confident, reliable, attentive,

cooperative, professional, efficient, and approachable, were evaluated.<sup>19</sup> Concerning all key elements depicted in the study, patients' perceived non-tattooed nurses more favorably than nurses with visible tattoos.

Two studies in the field of dentistry evaluated visibly tattooed dental hygienists on the basis of professionalism.<sup>30,31</sup> Quiros et al., determined dentists' opinions of visibly tattooed dental hygienists.<sup>30</sup> Participants were asked about their perceptions of visibly tattooed dental hygienists of varying sizes with regard to being ethical, responsible, competent, hygienic, and professional.<sup>30</sup> Results indicated that the visibly tattooed dental hygienists, despite size (small or large) of tattoo, were negatively perceived when compared to dental hygienists without visible tattoos. Quiros et al., concluded that dentists were most concerned with the image of their practice in terms of patient perceptions; therefore, negatively effecting employment opportunities for visibly tattooed dental hygienists.<sup>30</sup> In a study by Verrisimo et al., dental patients' perceptions of visibly tattooed dental hygienists of varying size (small or large) were evaluated according to professionalism.<sup>31</sup> Results indicated a statistically significant difference in perceptions of patients regarding large visible tattoos compared to dental hygienists with small or no visible tattoos.<sup>31</sup> A dental hygienist with a large visible tattoo was perceived as significantly less professional.<sup>31</sup>

Research suggests that negative perceptions regarding tattooed healthcare providers may adversely affect patient interactions.<sup>24</sup> Clinical dental hygienists and nurses alike, involve face to face contact with patients and work in a patient's close personal space. Brosky et al., concluded that appearance, as well as first impressions of dental care providers influenced both the anxiety and comfort levels of patients.<sup>23</sup> Chung et al., evaluated how doctors' attire affects the perception of empathy in a clinical interaction with a patient with results suggesting a strong correlation between doctor's attire and that provider's established confidence and trustworthiness.<sup>22</sup>

Appearance plays a vital role in first impressions, non-verbal communication, and professional image in healthcare environments.<sup>21-22,30-31</sup>

Evidence-based research should be considered when developing dress codes policies.<sup>1,10</sup> Policies regarding the visibility or concealment of tattoos in healthcare and educational environments, lack supporting evidence.<sup>32</sup> In a systematic review on nurses with tattoos, including a telephone survey of 15 hospitals, none of the 13 hospitals that expressed they had policy on visible tattoos had any justification or scientific research supporting their existing protocol.<sup>10</sup> A experimental study evaluating the harmful effects of tattoos on perceptions, encouraged future experimental studies to assess these perceptions in varying health care settings.<sup>33</sup> Understanding the affects that visible tattoos have on a health profession will create the evidence based model necessary for providing the best quality of care.

No research could be found on dress code policies and regulations regarding visible tattoos in dental hygiene education. Existing dress code policies in dental hygiene educational programs focus on professionalism, infection control, and disease prevention.<sup>34</sup> These guidelines typically apply to students and faculty in a clinical setting, and include regulations on uniforms, gowns, lab coats, protective eyewear, shoes, and hair covering.<sup>34</sup> There is a resounding emphasis on clinician and patient protection promoting a more sterile and clean environment. Dean concluded that visible tattoos are perceived as “dirty” or “unsanitary” on nurses and dentists because of the professional healthcare environment.<sup>14</sup> Dress code policies that do require the clinician to cover up visible tattoos may present concerns with infection control, especially concerning tattoos on a provider’s hands.<sup>35</sup> Health care professionals do not constantly wear gloves during patient interactions. Therefore, to comply with a dress code policy requiring providers to cover visible tattoos during all patient interactions, additional dressings would have

to be worn. This covering may present a concern with infection control regarding hand washing. Even though dental hygiene educators remain current with infection control protocols in relation to dress and appearance, visible tattoos may affect disease prevention in all healthcare professions.

Research suggests gender may affect perceptions of the tattooed individual.<sup>2,24,36</sup> In a female dominated profession, like nursing and dental hygiene, this is a significant area of concern. Boultinghouse found participants of all ages rated the female nurse with visible tattoos less professionally compared to the female nurse without visible tattoos, but the male nurse with visible tattoos was perceived the same as the male nurse without visible tattoos.<sup>2</sup> Another study evaluating perceptions of tattooed women compared to non-tattooed women, found that tattooed women were perceived less attractive, more sexually promiscuous, and heavier drinkers by male and female undergraduate students.<sup>7</sup> Westerfield et. al., found patients' perceived visibly tattooed female healthcare providers less professional than male providers with "similar" tattoos.<sup>19</sup> In a study that evaluated women with tattoos by manipulating size and visibility of tattoos in hypothetical descriptive cases, participants of both genders had more negative perceptions regarding women with visible tattoos compared to any other descriptive case.<sup>35</sup>

Burgess and Clark found tattooed women to be more suitable than tattooed men for a job.<sup>37</sup> This finding may have stemmed from the study's comparison of "traditional/tribal" tattoos vs. "contemporary/cute" tattoos.<sup>37</sup> Preliminary studies define contemporary tattoos as happy and more common among women, and traditional tattoos as more aggressive and more common among men. Burgess and Clark's study found that "contemporary/cute" tattooed individuals and non-tattooed individuals were not significantly perceived different, but both groups were rated significantly more positive than "traditional/tribal" tattooed individuals.<sup>37</sup> Stuppy et. al., found

women consistently rated all tattooed persons more negatively than non-tattooed individuals, especially tattooed women health professionals.<sup>24</sup>

In addition to gender bias, age may contribute to differences in perceptions regarding tattooed individuals.<sup>15, 38-39</sup> According to Pew Research, 64% of people 65 and older, and 51% of people between 50 and 64, have viewed the increased popularity of tattooing as a “change for the worse,” while 56% of people 50 and younger agreed this increased prevalence has not made a significant impact in today’s society.<sup>13</sup> Furthermore, 6 in 10 women aged 50 and older have viewed the increased popularity in tattooing as a “change for the worse,” reflecting a greater age difference in perceptions compared to men.<sup>13</sup> According to the Harris Poll, over one third of young adults aged 18-25 have at least one tattoo, compared to only 13% of Baby boomers.<sup>6</sup> In a study by Dean, results indicated that older participants compared to younger participants, perceived tattooed individuals more negatively especially regarding intelligence and honesty.<sup>15</sup> Roberts concluded, that older Americans not only represent a much lower percentage of tattooed individuals, but they are more likely to believe and hold traditional stereotypes.<sup>39</sup> These demographics are important to consider when evaluating the effects of tattoos on the female dominated profession of dental hygiene, especially in regards to interpersonal relationships with geriatric patients.

Results from a survey of hospitality industry human resource managers and recruiters, revealed the majority believed that visible tattoos would be negatively viewed by their company.<sup>16</sup> Timming et al., showed that an employer’s prejudice to tattooed interviewees depended on the location of the tattoo, the place of employment, the involvement with customers, the type of tattoo, and most importantly the perceptions of the company’s clientele.<sup>17</sup> Administrators have legal rights to enforce dress codes and appearance policies when it is a

concern of safety or threat to the reputation of an institution.<sup>17,40-41</sup> As visible tattoos become more conventional in today's healthcare settings, it is vital to clearly define tattoos in written dress code policies before an applicant is interviewed. Administrators may face legal issues trying to enforce their terms or ideas of professional image without written documentation.<sup>16</sup>

Mitchell and colleagues described these challenges relating to tattoos in three parts of the Civil Rights Act of 1964.<sup>20,40-41</sup> The section on the Civil Rights Act and Religion highlights the role discrimination plays when an employee's tattoo has a religious affiliation. While there is no legal requirement to impose a dress code or appearance policy, having a consistently enforced written protocol can legally help a company defend against claims of discrimination. This written documentation can protect the integrity of the company and promote a healthy, prosperous work environment.<sup>40</sup> Under the Civil Rights Act and Gender, Mitchell et al., emphasized the District of Columbia's legal decree against discrimination in the workplace.<sup>20</sup> Within it, personal appearance is regarded as a protected category. The District of Columbia official codes define personal appearance as visible characteristics associated with dress and personal grooming, despite sex of the individual.<sup>20</sup> Under these parameters, tattooing may be very likely accommodated for.<sup>20</sup> The third challenge noted under Federal Legislation reiterates consistent reinforcement of dress codes and appearance policies in accordance to the Disabilities Act and National Labor Relations Act.<sup>41</sup> This part of the literature states that an administrator may legally enforce visible tattoo policies even if this conflicts with one's personal or cultural expression.<sup>41</sup>

Among the Millennial generation, results from a survey by Foltz revealed 86% of students believed any student would have a harder time finding employment with visible tattoos, and 95.2% of surveyed students would make sure tattoos were invisible during a business interview for Corporate America.<sup>12</sup> Even though students were aware having a tattoo may

negatively affect employment opportunities in Corporate America, 50% of the students surveyed were still considering getting tattooed.<sup>12</sup> The majority of the students surveyed who already had at least one tattoo, would consider location to avoid discrimination in employment. Despite students' beliefs that tattoos presented an obstacle to job employment, the ability to cover up tattoos not employment was the deciding factor for getting a tattoo.<sup>12</sup> Foltz concluded that the Millennial generation will continue to express themselves through tattoos while taking the ability to hide them into consideration.<sup>12</sup> Some research indicates these negative stereotypes may be changing, especially in the younger generation.<sup>42-43</sup> Swami et. al., concluded from two separate studies that traditional differences in perceptions will fade as visible tattoos become more mainstream, and tattooed and non-tattooed individuals have more commonality than differences.<sup>42-43</sup>

Conclusively, while visible tattoos become mainstream in many parts of today's society, research suggests negative stereotypes, especially concerning visibly tattooed health care professionals, continue to dominate. Currently, there is scant research regarding the perceptions of visibly tattooed dental hygienists and the impact these perceptions have on the profession. While the image of dental hygiene professionalism originates in education, there is no research on the perception of dental hygiene administrators on dental hygienists with visible tattoos and the existing policies enforced in dental hygiene education. The purpose of this study is to determine the perceptions of dental hygiene program directors toward existing tattoo policies and to determine their satisfaction with policies based on tolerance of tattoos and age. Information gleaned from the present study may help oral health programs make more valid and reliable decisions concerning visible tattoos in written dress code policies and procedures.

### CHAPTER III

#### METHODOLOGY

An IRB approved 14-item investigator-designed survey was administered online via a commercial web based software company ([www.surveymonkey.com](http://www.surveymonkey.com)) and distributed to 340 dental hygiene program directors of U.S. entry level dental hygiene programs as reported by the American Dental Hygiene Association.<sup>44</sup> All responses were collected anonymously.

The *Dental Hygiene Tattoo Survey* introduction letter provided participants information about the study, as well as obtained participant consent. The survey consisted of four sections (Appendix A). Section A contained four demographic questions related to gender, age, and program demographics. Section B contained statements concerning visible tattoos on dental hygiene students and faculty in clinical and community educational settings. Using a seven point Likert-scale from 1 (strongly disagree) to 7 (strongly agree), participants indicated their impressions of visible tattoos in dental hygiene education on the basis of professionalism, concern, impact, and appropriateness. Section C contained questions concerning dental hygiene program policies including description of dress code policy or statement, identification of individual(s) involved with tattoo policy making, indication of who these policies apply to, and personal perspective on whether a dress code policy on visible tattoos is needed for programs who indicated that they currently do not have a policy. Section D captured respondents' personal tattoo status. Two additional descriptive questions including visibility and number of tattoos were directed towards participants who indicated having a tattoo.

A panel of marketing and dental hygiene faculty at Old Dominion University reviewed the questionnaire to establish content validity and to test clarity of instructions. Modifications to the survey instrument were made based on the panel's review of the survey. The University IRB

reviewed and approved as exempt the protocol prior to the study's commencement (Appendix B).

Statistical analysis for the survey responses were performed using SPSS 21 software and the significance level was set at  $p < 0.05$ . Descriptive statistics, frequencies, percentages, and means were used to analyze response frequency to closed ended questions. Statistically significant differences for Likert type scale questions were determined using a one-sample t-test and compared to a neutral rating of 4.0. Two open-ended questions were transcribed and qualitatively analyzed by coding responses according to distinct ideas. Responses from the description of program policy question were coded according to specified reasons for the policy and policies for covering visible tattoos in their program. Identification of program policy maker(s) were grouped according to specified credentials which were dental hygiene faculty, curriculum committee including students, corporate education department, and dental hygiene program director only. All coding was reviewed by a colleague prior to frequency analysis to establish content reliability. When there were differences in response frequencies, issues were discussed and calibration in responses were achieved.

An ordinary least squares (OLS) linear regression model was used to determine the relationship between respondents' age and satisfaction with current program policies related to visible tattoos. In addition, respondents' tolerance toward tattoos in general in relation to their satisfaction with current policies was also determined. A binomial logistic regression model was used to determine the effects of respondent's age and tolerance of tattoos with the presence of a policy on visible tattoos.

## CHAPTER IV

### RESULTS

Of the 340 U.S. dental hygiene program directors invited to participate in this study, 9 emails were undeliverable for a final sample of 331. A total of 141 program directors successfully completed the online survey for a response rate of 43%. Five participants completed the demographic section (Section A), but did not complete the survey in its entirety; therefore, were not included in the response rate. The majority of participants were female (95%) and worked for an educational institution that awarded an associate's degree (77%). Participants ranged in age from 29 to 70 years, with an average age of 54.86 years (SD=7.76). Most participants (73%) were between the ages 50 and 64, and 7% were aged 65 and older (Table I). Respondents were representative of all regions in the U.S., with the largest percentage (35%) from the South (Table II).

The majority of respondents reported their respective dental hygiene program had a dress code policy on visible tattoos (80%). Of those who responded yes (113), 14% reported their policy solely applied to students, with the 89% reporting their policy applied to faculty and students. One fifth (20%) of the respondents did not have a dress code policy on visible tattoos; 43% of those respondents indicated a written tattoo policy was needed and 57% indicated that a written tattoo policy was unnecessary.

When participants were asked about personal tattoo status, the vast majority (87%) reported they did not have a personal tattoo. Of the eighteen program directors that did have a tattoo, only one reported the tattoo as being visible as defined by this study. The majority of participants with tattoos (83%), reported less than three tattoos.

A seven-point Likert type scale ranging from strongly disagree (1) to strongly agree (7), was used to indicate participant's opinions of visible tattoos on the basis of professionalism, concern within the school, dress code policy satisfaction, tolerance toward visible tattoos, whether they felt tattoos needed to be covered, perceived attitudes of future employers, and perceived attitudes of community members (Table III). A one-sample t-test was used to determine statistically significant differences compared to a neutral rating, defined as a score of 4.0 (Table IV). Results revealed both students ( $M=5.57$ ,  $SD=1.44$ ,  $p<0.0005$ ) and faculty ( $M=5.76$ ,  $SD=1.49$ ,  $p<0.0005$ ) with visible tattoos were perceived as significantly less professional by respondents ( $d=-1.57$ , 95% CI [-1.82 to -1.33],  $t(138) = 12.82$ ); ( $d=-1.76$ , 95% CI [-2.01 to -1.51],  $t(138) = 13.93$ ). Additionally, significantly more respondents agreed than disagreed that visible tattoos on students ( $M=4.73$ ,  $SD=1.99$ ,  $p<0.0005$ ) were a concern in their dental hygiene programs ( $d=-.0.73$ , 95% CI [-1.05 to -0.41],  $t(138) = 4.50$ ). However, visible tattoos on faculty ( $M=3.13$ ,  $SD=2.22$ ,  $p<0.0005$ ) typically was not perceived as a problem since most respondents disagreed with this statement ( $d=0.88$ , 95% CI [0.51 to 1.26],  $t(138) = -4.69$ ).

Significant differences were also found when evaluating participants' level of satisfaction ( $M=5.77$ ,  $SD=1.56$ ) with their program's existing dress code policy concerning visible tattoos ( $d=-1.77$ , 95% CI [-2.03 to -1.51],  $t(138) = 13.40$ ,  $p<0.0005$ ). Results suggest most program directors were satisfied with their existing visible tattoo policies. In regards to tolerance toward visible tattoos, results suggest most respondents do not believe tattoos should be visible in the educational setting ( $M=3.23$ ,  $SD=2.22$ ) ( $d=0.73$ , 95% CI [0.38 to 1.09],  $t(138) = -4.09$ ,  $p<0.0005$ ). Additionally, results revealed significantly more respondents agreed than disagreed that visible tattoos should be covered in both clinical ( $M=5.75$ ,  $SD=1.79$ ) ( $d= -1.74$ , 95% CI [-2.04 to -1.44],  $t(138) = 11.46$ ,  $p<0.0005$ ), and community settings ( $M=4.80$ ,  $SD=2.11$ )

( $d=-0.78$ , 95% CI [-1.14 to -0.43],  $t(138) = 4.39$ ,  $p<0.0005$ ).

Most participants ( $M=6.20$ ,  $SD=1.27$ ) agreed that faculty should discuss the impact of visible tattoos on future employment opportunities ( $d=-2.19$ , 95% CI [-2.41 to -1.98],  $t(138) = 20.32$ ,  $p<0.0005$ ). Mean community score ( $M=5.50$ ,  $SD=1.55$ ) indicated most participants' agreed that the community would view the school as less professional if students had visible tattoos ( $d=1.50$ , 95% CI [-1.77 to -1.24],  $t(138) = 11.33$ ,  $p<0.0005$ ). Results also suggest program directors believed people hiring students ( $M=5.45$ ,  $SD=1.62$ ) would feel the school is less professional if students had visible tattoos ( $d=-1.47$ , 95% CI [-1.75 to -1.20],  $t(138) = 10.70$ ,  $p<0.0005$ ). The majority of participants ( $M=2.99$ ,  $SD=1.78$ ) disagreed that people in their area are particularly liberal ( $d=1.01$ , 95% CI [.72 to 1.31],  $t(138) = -6.73$ ,  $p<0.0005$ ).

Of the 141 respondents, 112 provided responses to the open-ended questions on program policy description and identification of program policy maker concerning visible tattoos. The majority of these participants (97%) focused their tattoo policy description (Q7) on the covering of visible tattoos. More detailed responses concerning Program Policy Description regarding visible tattoos were further subcategorized according to the following themes: cover in all settings representing the school (30%), cover only in clinical settings (41%), cover by a band aid and/or makeup (13%), cover only if considered offensive (2%), and cover due to infection control protocol (1%). Identification of Program Policy Maker(s) (Q8) was analyzed according to the following groups: dental hygiene faculty (76%), curriculum committee including students (3%), corporate education department (4%), Dental Hygiene program director only (16%) (Table V).

Responses that indicated when to cover visible tattoos, were interpreted in the following way. Descriptions of 'all settings representing the school' included clinic, preclinic, lab,

community setting, rotations, “confines of our four walls,” “representing the program outside the clinic,” classroom, and “professional presentations.” Descriptions that either said “clinical environment,” “during any clinical activity,” or “only clinical settings” were included under the theme, ‘cover only in clinical settings.’ Responses that indicated how to cover visible tattoos, were decoded in the following way. All responses detailing how to cover visible tattoos included options like “flesh colored bandages,” “theatrical grade makeup,” “bandaid or makeup that completely conceals,” only when clothing such as a “long sleeved uniform” is unable to cover an otherwise visible tattoo. There were three responses that included a description on why to cover visible tattoos concerning offensive nature and relation to infection control. The two responses that fell under the subcategory ‘cover only if considered offensive’ included the following statements: “if a complaint is received due to cultural sensitivity” and “small (~1cm) and inoffensive tattoos are permissible.” One infection control response included statements detailing tattoos association with an “increased risk for infectious diseases” due to “compliance of tattooing in terms of sterile techniques is difficult to ascertain,” and prohibiting direct patient contact for “tattoo that is not fully healed.” Several responses fell into more than one subdivision.

A linear regression analysis (OLS) was conducted to determine if participants’ age and tolerance towards visible tattoos was statistically associated with participants’ satisfaction with the program tattoo policy (Table VI). For this analysis, tolerance ratings were defined by responses to the Likert scale statement, ‘I believe tattoos may be visible if discreet/appropriate and not offensive.’ Ratings of program tattoo policy satisfaction was defined by responses to, ‘I am satisfied with my program’s existing dress code policy concerning visible tattoos.’ Results from the linear combination of age and tolerance towards visible tattoos revealed 13% of

variance in ratings of policy satisfaction ( $F(2, 135) = 10.06, p < .001$ .) The analysis showed that tolerance toward tattoos ( $\beta = -0.36, p < 0.001, 95\% \text{ CI } [-.38, -.15]$ ) but not age ( $\beta = -0.06, p = 0.50, 95\% \text{ CI } [-.04, .02]$ ) was significantly associated with satisfaction concerning program tattoo policies. Therefore, hypothesis 1 ( $H_{01}$ ) was rejected and hypothesis 2 ( $H_{02}$ ) was retained. Program directors who indicated a decreased tolerance toward visible tattoos were more likely to be satisfied with their program tattoo policy.

A logistic regression was performed to determine if an association existed between age and tolerance towards tattoos with the likelihood that visible tattoos was addressed in dress code policies (Table VII). Tolerance ratings were defined by the same question used for standard multiple regression analysis. The logistic regression model was statistically significant,  $X^2(2) = 40.44, p < .0005$ . The Nagelkerke  $R^2$  was .40 and Cox and Snell  $R^2$  was .25. The analysis showed that tolerance toward tattoos ( $\beta = -0.73, p < 0.001$ ) but not age ( $\beta = -0.06, p = 0.09$ ) was significantly associated with the likelihood that visible tattoos was addressed in dress code policies. A lower tolerance (negative attitude) towards visible tattoos was associated with an increased likelihood that a program dress code policy on visible tattoos existed. Therefore, hypothesis 3 ( $H_{03}$ ) was rejected. Program directors who had an increased tolerance for visible tattoos were less likely to institute program tattoo policies. Age was not statistically significant at  $p < 0.05$  level. Therefore, the null hypothesis ( $H_{04}$ ) was retained.

## CHAPTER V

### DISCUSSION

While visible tattoos have become mainstream in many parts of today's society, research suggests negative stereotypes continue to dominate especially concerning visibly tattooed health care professionals.<sup>1,2,19</sup> With the Millennial generation comprising the majority of current college aged students and as this population increasingly obtains tattoos, it is important for schools of dental hygiene to address this issue.<sup>12</sup> Results from this study suggest visible tattoos are a concern in dental hygiene educational settings.

The majority of participants report having a dress code policy on visible tattoos. Results suggest most respondents believe students and faculty with visible tattoos were perceived as less professional, which may support why most programs required visible tattoos to be covered in program settings. In contrast, McCombs et al., found less than half of dental hygiene students (48%) believed visible tattoos should be covered even though most agreed they were unprofessional.<sup>45</sup> The younger age of the student respondents could explain this difference in findings.

Open-ended responses that indicated covering visible tattoos with makeup or flesh colored band aids were the most prevalent ways of covering, most likely because these options present the easiest, most modest approach while in clinic attire. Regarding professionalism, findings from the present study are consistent with research in nursing. Thomas et al., concluded self-expression through the display of tattoos was not a part of the nursing professional image and tattoos should not be visible when representing a professional role.<sup>1</sup> Results also are supported by Merrill and Westerfield et al., who found that visible tattoos on nurses were perceived as creating a less professional image.<sup>3,19</sup> Moreover, most participants did not view

their communities as liberal. Perhaps this finding also related to required covering of visible tattoos in both clinic and community settings as respondents may not believe community patients would view the presence of visible tattoos on students favorably. Less favorable opinions could negatively impact patient scheduling of appointments at the school clinic.

Concern differed for visible tattoos on students compared to that on faculty. While the majority of program tattoo policies applied to both students and faculty, participants indicated that visible tattoos on faculty were not a concern in their program. Difference in age may contribute to this finding. Tattoos are especially prevalent and accepted among younger Americans, representing one of the largest growing cohorts of tattoo consumers, compared to the Baby Boomer generation.<sup>6</sup> In addition to the age of participants in this study, averaging 55 years, a minimal number reported having a tattoo. Only one respondent indicating their tattoo was visible. This could explain why respondents did not view visible tattoos as a faculty concern.

Despite the growing concern aimed toward the student population, program directors may apply tattoo policies towards students and faculty alike to prevent threats of discrimination. While there is no legal requirement to impose a dress code or appearance policy, having a consistently enforced written protocol can legally help an institution defend against claims of discrimination.<sup>40</sup> Written dress code policies can protect the integrity of the school and promote a healthy educational environment. While the majority of respondents indicated their dental hygiene programs had an existing dress code policy on visible tattoos, whether the policy was in writing or simply verbalized was not defined.

Participants' involvement in dress code policy making likely influenced how satisfied they were with their program's statement on covering visible tattoos. Results showed program directors either solely created the dress code policy statement on visible tattoos or were part of

the curriculum committee and/or faculty team that created the policy. Since they were directly involved, this likely supports why the majority of participants were satisfied with their respective tattoo policy that required covering of any visible tattoos. Additionally, the majority of participants perceived visible tattoos as inappropriate in dental hygiene programs. Although some research demonstrates tattoos of various size, degree, and image being perceived differently, results indicated participants were not tolerant of any visible tattoo, even if discreet and appropriate.<sup>37</sup> The vast majority of respondents also agreed that tattoos considered offensive should be covered in all educational settings, including the classroom and community. Tattoo image and size was not researched in the present study in relation to what is considered offensive. Policy makers who negatively view visible tattoos on dental hygienists, would likely support a tattoo policy that requires covering of all visible tattoos in both clinic and community settings.

An important concern for health care organizations and hiring managers is the image projected by their employees. Physical appearance not only affects the professional image of health care providers, but also the professional image of the institution they are representing.<sup>17</sup> In a survey of consumers, Dean concluded that visible tattoos are perceived as “dirty” or “unsanitary” on nurses and dentists because of the professional healthcare environment.<sup>15</sup> Results suggest most participants agreed that members of their community and those individuals hiring their students would view the school as less professional if students had visible tattoos. These findings are supported by Verissimo et al., who found that dental patients viewed the dental hygienist with a visible tattoo as less professional.<sup>31</sup> Additionally, these findings are congruent with research in nursing that showed nurses were also rated less professionally by patients if they had a visible tattoo.<sup>1,3,19</sup> Furthermore, Quiros et al., found dentists in the Commonwealth of

Virginia rated dental hygienists with visible tattoos significantly less hygienic and professional and were less likely to hire someone with a visible tattoo.<sup>30</sup> Currently, hiring managers' in many aspects of society prefer not to hire someone with a visible tattoo because of the negative attitudes reported by consumers.<sup>16,17</sup>

Most participants in this study agreed that faculty should discuss the impact of visible tattoos on future employment opportunities. These findings are supported by Timming et al., who found that body art has a significant negative effect on hireability and employment opportunities were lowered when applicants displayed visible body art.<sup>17</sup> Dental hygiene programs want to graduate students who are deemed both competent and professional, thus worthy of employment. Research on college aged students determined that while students agree they should cover otherwise visible tattoos when interviewing, they may be unaware of future implications regarding employment and career growth.<sup>12</sup> Moreover, Burgess et al., found regardless of employers' personal feelings about tattoos, if they believed clients would rate tattoos as unprofessional, the employer would not want to hire an individual with visible tattoos.<sup>37</sup>

As tattooing may also impact employment opportunities for dental hygienists, as in other professions, it may be relevant and important for programs to discuss this with students. Interestingly, Boultinghouse found female nurses with tattoos were perceived to be less trustworthy and kind compared to female nurses without tattoos, but male nurses with tattoos were rated the same as male nurses without tattoos in these areas.<sup>2</sup> Similar findings were supported by Westerfield.<sup>19</sup> This gender bias has particular relevance for the female dominated profession of dental hygiene and certainly could be a factor in an office manager's hiring decisions. Information on the effects visible tattoos may have on the dental hygiene professional

and possible gender bias could be incorporated into the curriculum within an existing practice management course.

However, individuals from various geographic regions may differ in how members of their communities would view dental hygienists with visible tattoos. For instance, those participants who viewed their communities as liberal believe the need for a dress code policy on visible tattoos may not be warranted. For these segments of the population, tattoos may be accepted and possibly even enhance the image of a health care provider and a dental practice. Timing et al., noted that some employment settings may prefer a certain aesthetic if catering to clients with tattoos.<sup>17</sup> Furthermore, younger persons and many college-aged individuals find tattoos to be attractive with few negative stereotypes.<sup>16</sup> Depending on the average age of the patient base in a community, health care organizations and hiring managers may find visibly tattooed health care professionals are not offensive, and may even enhance the image of their practice.<sup>17</sup> Therefore, employers may even prefer their employees have tattoos so they appear more similar to their clients and this could relate to a segment of dental practices as well.

In the present study, some participants indicated that a written tattoo policy was not necessary for their program. This may relate to a lack of prevalence of students and faculty with visible tattoos and/or the perception that small, appropriate tattoos do not negatively affect professionalism. In a community that is more tolerant of tattoos, perceptions concerning professionalism of the individual with a visible tattoo may be dependent on size, number, and image. Taking this into consideration, dental hygiene programs may address the occasional student or faculty member with a visible tattoo on an individual basis.

Participants who had a lower tolerance toward visible tattoos were more likely to have a program dress code policy that addressed visible tattoos, and were more likely to be satisfied

with the current policy. Personal bias most likely accounted for these associations. Results from this study indicate program directors directly influence dress code policies. Tattoos can only affect the operator-patient relationship if they are visible. It is not surprising that participants who strongly disagreed that even discreet tattoos may be visible were more likely to address covering of visible tattoos in dress code policies. Furthermore, if program directors were not involved in policy making regarding tattoos, perceived tolerance toward visible tattoos may not be associated with satisfaction regarding existing tattoo policies. Therefore, perceptions of participants who create dress code policies affect the development of program policies.

While age is an important factor affecting attitudes toward tattoos, in this study participants' age was not significantly associated with participants' satisfaction with program tattoo policies or with the likelihood that a program dress code policy on visible tattoos existed. This is a surprising finding since most of the participants were 50 years and older (82%). Although the relationship between age and the likelihood that a program dress code policy on visible tattoos existed narrowly missed traditional statistical significance ( $p=0.09$ ), some scholars do report statistical significance when  $p<0.10$ . Clark and DiDona found that age of the employer affected hiring of individuals with tattoos and older individuals are more likely to be hesitant to hire those with visible tattoos.<sup>38</sup> Similarly, personal bias could also have affected policy satisfaction.

As the Millennial students of today will be the ones creating program policies and making hiring decisions in the future, existing program policies regarding visible tattoos may become less restrictive as younger generations assume future administrative positions. The relationship between age and prevalence is an important factor to consider in regards to acceptance and future program policies involving visible tattoos in dental hygiene education.

## LIMITATIONS

There were a number of limitations identified in this study. Of the 331 dental hygiene program directors emailed, only 141 directors responded and completed the survey in its entirety. This low response rate may be due to survey distribution during several institutions' spring recess and may affect the generalizability of results to all U.S. dental hygiene programs. Future studies should consider distributing the survey during a different time of the year when the majority of educational programs are in session. Results may also not be generalizable outside the U.S. because various cultures have differing perspectives on visible tattoos. Future studies should consider the impact gender, race and religion may have on an individual's perception of tattooed dental hygienists. Data was skewed concerning age and gender; therefore, not representative of perspectives regarding younger dental hygiene program directors or male program directors. Additionally, as Millennial generations assume administrative roles, stereotypes and policies enforcing covering of visible tattoos may become nonexistent. Future research should acquire a representative sample of all age groups to account for validity and reliability of quantitative results. Lastly, researcher bias must be accounted for with a purposive sampling technique. While questions inquired about possible relationships between tattoo policies and program directors' attitude toward visible tattoos, explicit questions investigating the reasoning behind why there was a policy or lack thereof, was not defined. Future areas of research may focus on patients' perceptions regarding visibly tattooed dental hygienists.

## **CHAPTER VI**

### **CONCLUSIONS**

Most dental hygiene directors view visible tattoos as a concern in dental hygiene educational programs and have a policy that requires covering of visible tattoos in clinic and community settings. Participants in this study viewed visible tattoos inappropriate on dental hygiene students as it may negatively impact professionalism. Age and prevalence of tattoos most likely contributed to why visible tattoos were not perceived as a faculty concern. While there is no legality behind enforcing a dress code policy on visible tattoos, program directors most likely applied established policies towards students and faculty alike to prevent threats of discrimination. Results from the present study suggest participants' personal bias may drive educational directors' motives for enforcing dress code policies on visible tattoos. If a more liberal perception of the community had been found, policies on visible tattoos in clinic and the community might have been less restrictive. While tattoos may also negatively influence employment opportunities for dental hygienists, dental hygiene directors believe faculty should discuss this impact with students. Since dental hygiene program directors are directly involved in dress code policy making, participants tolerance towards visible tattoos may have been associated with the institution of program tattoo polices and their satisfaction regarding these policies.

Findings from this study provide insight on the current perception of dental hygienists with visible tattoos and the existing policies in dental hygiene education programs. Information gleaned from this study may help oral health programs establish more fully developed, evidence-based policies and procedures.

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**Table I: Demographic Data by Number and Percentage of Total Participants (N=145)**

	Number	Percentage
<b>Gender</b>		
Female	139	95%
Male	7	5%
<b>Age (years)</b>		
Under 35	3	2%
36-45	16	11%
46-55	45	31%
56-65	77	53%
Over 66	4	3%
<b>Awarded credential (entry-level program)</b>		
Certificate	2	1%
Associate's degree	113	77%
Bachelor's degree	42	29%

**Table II: Region of Program Residence by Number and Percentage of Total Participants (N=145)**

Region	Number	Percentage
Northeast (Connecticut, Minnesota, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, Pennsylvania)	28	19%
Midwest (Indiana, Illinois, Michigan, Ohio, Wisconsin, Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota)	30	21%
South (Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, Texas)	51	35%
West (Arizona, Colorado, Idaho, New Mexico, Minnesota, Utah, Nevada, Wyoming, Alaska, California, Hawaii, Oregon, Washington)	36	25%

**Table III: Percentage Scores of Respondent's Perceptions of Visible Tattoo Policies  
(N=141)**

	1. Strongly Disagree	2.	3.	4.	5.	6.	7. Strongly Agree	Total
I believe dental hygiene STUDENTS with visible tattoos are perceived as less professional.	0.71% 1	4.26% 6	2.13% 3	16.31% 23	17.73% 25	23.40% 33	35.46% 50	141
I believe visible tattoos on STUDENTS are a concern in our program.	5.67% 8	12.77% 18	7.80% 11	14.89% 21	15.60% 22	20.57% 29	22.70% 32	141
I believe dental hygiene FACULTY with visible tattoos are perceived as less professional.	0.71% 1	5.67% 8	2.13% 3	9.93% 14	13.48% 19	25.53% 36	42.55% 60	141
I believe visible tattoos on FACULTY are a concern in our program.	36.88% 52	15.60% 22	8.51% 12	9.93% 14	5.67% 8	10.64% 15	12.77% 18	141
I am satisfied with my program's existing dress code policy concerning visible tattoos.	1.43% 2	2.86% 4	7.14% 10	10.71% 15	8.57% 12	21.43% 30	47.86% 67	140
I believe tattoos may be visible if discreet/appropriate and NOT offensive.	31.21% 44	16.31% 23	10.64% 15	12.77% 18	6.38% 9	13.48% 19	9.22% 13	141
I believe visible tattoos should be covered while in the clinical setting.	2.84% 4	7.09% 10	4.26% 6	9.22% 13	6.38% 9	14.18% 20	56.03% 79	141
I believe visible tattoos should be covered while in the community setting.	9.22% 13	11.35% 16	7.80% 11	12.77% 18	12.77% 18	11.35% 16	34.75% 49	141
I believe offensive/inappropriate tattoos must be covered at ALL times (clinic, classroom, community).	5.67% 8	4.96% 7	4.26% 6	5.67% 8	1.42% 2	7.80% 11	70.21% 99	141
I believe faculty should discuss the impact of visible tattoos on future employment opportunities.	0.71% 1	2.84% 4	1.42% 2	4.96% 7	9.22% 13	21.99% 31	58.87% 83	141
I believe people in our community would feel our school is less professional if students had visible tattoos.	2.13% 3	4.96% 7	4.26% 6	9.93% 14	19.15% 27	26.95% 38	32.62% 46	141
I believe people hiring our students would feel our school is less professional if students had visible tattoos.	2.13% 3	4.96% 7	6.38% 9	12.06% 17	12.77% 18	26.24% 37	35.46% 50	141
I believe people in this area are particularly liberal.	25.53% 36	22.70% 32	12.77% 18	19.15% 27	7.09% 10	7.80% 11	4.96% 7	141

**Table IV: One Sample *t*-test Results Comparing Mean Values of Program Director Responses to Neutral Rating**

One-Sample Test						
	Test Value = 4					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
I believe dental hygiene STUDENTS with visible tattoos are perceived as less professional.	12.815	138	.000	1.57554	1.3324	1.8186
I believe visible tattoos on STUDENTS are a concern in our ...	4.502	138	.000	.72662	.4075	1.0457
I believe dental hygiene FACULTY with visible tattoos are perceived as less professional.	13.929	138	.000	1.76259	1.5124	2.0128
I believe visible tattoos on FACULTY are a concern in our ...	-4.686	138	.000	-.88489	-1.2583	-.5115
I am satisfied with my program's existing dress code policy concerning visible tattoos.	13.399	138	.000	1.76978	1.5086	2.0309
I believe tattoos may be visible if discreet/appropriate and NOT offensive.	-4.091	138	.000	-.73381	-1.0885	-.3791
I believe visible tattoos should be covered while in the clinical setting.	11.461	138	.000	1.74101	1.4406	2.0414
I believe visible tattoos should be covered while in the community setting.	4.392	138	.000	.78417	.4311	1.1372
I believe offensive/inappropriate tattoos must be covered at ALL times (clinic, classroom, community).	12.117	138	.000	1.94964	1.6315	2.2678
I believe faculty should discuss the impact of visible tattoos on future employment opportunities.	20.316	138	.000	2.19424	1.9807	2.4078
I believe people in our community would feel our school is less professional if students had visible tattoos.	11.328	138	.000	1.49640	1.2352	1.7576
I believe people hiring our students would feel our school is less professional if students had visible tattoos.	10.696	138	.000	1.47482	1.2022	1.7474
I believe people in this area are particularly liberal.	-6.729	138	.000	-1.01439	-1.3125	-.7163

**Table V: Open Ended Responses Concerning Program Policy Description and Identification of Program Policy Maker (N=112)**

	Number	Percentage
<b>Program policy description</b>		
Cover in all settings representing the school	34	30%
Cover only in clinical settings	46	41%
Cover by band aid and/or makeup	14	13%
Cover only if considered offensive	2	2%
Cover due to infection control protocol	1	1%
<b>Program policy maker</b>		
Dental hygiene faculty	85	76%
Curriculum committee including students	3	3%
Corporate education department	4	4%
Dental hygiene program director only	9	13%

**Table VI: Summary of Multiple Regression Analysis for Age and Tolerance Scores.**

	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	<i>t</i>	
Constant	7.26	.95		7.64	.00
Tolerance	-.27	.06	-.36	-4.48	.00
Age	-.01	.02	-.06	-.68	.50

*Note:* Dependent Variable: I am satisfied with my program's existing dress code policy concerning visible tattoos.

**Table VII: Logistic Regression Analysis on Likelihood of Instituting Program's Dress Code Policy on Visible Tattoos.**

Predictor	$\beta$	$p$
Constant	7.87	.001
Tolerance	-.73	.00
Age	-.06	.09

*Note:* Cox and Snell  $R^2 = .25$ . Nagelkerke  $R^2 = .40$ .

## APPENDIX A

### SURVEY/ QUESTIONNAIRE

My name is Kathryn Search and I am currently a dental hygiene graduate student at Old Dominion University. I am conducting a research study titled “Tattoos in Dental Hygiene Education.” The purpose of this study is to determine the attitudes of dental hygiene program directors towards visibly tattooed dental hygienists, and existing policies on visible tattoos.

The survey consists of 14 questions that should take you approximately 10 minutes to complete.

Your participation is voluntary and data is completely anonymous. No one will be able to associate your responses with your identity. Data will be reported in-group form only. If you choose to participate in this study, please complete the survey with the link provided. You may refuse to participate or stop responding at any time without penalty. Consent to participate is given by clicking on the link to begin the survey. Results of this study will be available to you by request to the Responsible Principle Investigator (RPI) once the data is analyzed.

**CONTACT INFORMATION:** Questions regarding the purpose or procedure of this research project should be directed to Kathryn Search at [ksear001@odu.edu](mailto:ksear001@odu.edu) and/or Professor Lynn Tolle at [ltolle@odu.edu](mailto:ltolle@odu.edu).

**CONSENT:** I have read the above information and understand what will be expected of my participation. I further understand that my consent to participate in this study is acknowledged through the completion and submission of the survey.

**GENERAL INSTRUCTIONS:** After you have finished completing the survey, click on the “submit responses” button. Do not use your arrow keys to navigate from each question. You will not be able to backtrack.

**Section A: Demographic Section**

- \* 1. What is your gender?
  - Female
  - Male
- \* 2. What is your age? (In years)
- \* 3. Which region of the U.S. does your program reside?
  - Northeast (CT, MN, MA, NH, RI, VT, NJ, NY, PA)
  - Midwest (IN, IL, MI, OH, WI, IA, KN, MO, NE, ND, SD)
  - South (DE, DC, FL, GA, MD, NC, SC, VA, WV, AL, KY, MS, TN, AK, LS, OK, TX)
  - West (AZ, CO, ID, NM, MN, UT, NV, WY, AK, CA, HW, OR, WA)
- \* 4. What credential is awarded at your institution upon successful completion of entry level Dental Hygiene program? (Select all the apply.)
  - Certificate
  - Associate's Degree
  - Bachelor's Degree



**Section C: Dental Hygiene Program Policies**

\* 6. Does your program have a policy on visible tattoos?

- Yes
- No

\* 7. In the box below, briefly describe your program's policies on visible tattoos if applicable.

\* 8. Who makes your program's dress code policy or statement on visible tattoos?

Please indicate credentials.

\* 9. Does the dress code tattoo policy apply ONLY to students?

- Yes
- No

\* 10. Does the dress code tattoo policy apply to faculty?

- Yes
- No

11. If your program does not have a policy, is a written dress code policy on visible tattoos needed?

- Yes
- No

**Section D: Personal Tattoo Status**

\* 12. Do you have a tattoo?

- Yes
- No

\* 13. Is your tattoo(s) visible?

- Yes
- No

\* 14. How many tattoos do you have?

- 1-2
- 3-4
- 5-6
- 7+

**Additional Comments**

15. Please include any additional comments in the box below.

**End of Survey**

Thank you for your participation and contribution to this study.

## APPENDIX B

### IRB EXEMPTION



#### OFFICE OF THE VICE PRESIDENT FOR RESEARCH



**Physical Address**

4111 Monarch Way, Suite 203  
Norfolk, Virginia 23508

**Mailing Address**

Office of Research  
1 Old Dominion University  
Norfolk, Virginia 23529  
Phone(757) 683-3460  
Fax(757) 683-5902

DATE: March 4, 2016

TO: Lynn Tolle  
FROM: Old Dominion University Health Sciences Human Subjects Review Committee

PROJECT TITLE: [862672-1] Tattoos in Professional Dental Hygiene Education  
REFERENCE #: [REDACTED]  
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS  
DECISION DATE: March 4, 2016

REVIEW CATEGORY: Exemption category 6.1

Thank you for your submission of New Project materials for this project. The Old Dominion University Health Sciences Human Subjects Review Committee has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Harry Zhang at 757-683-6870 or qzhang@odu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Old Dominion University Health Sciences Human Subjects Review Committee's records.

## VITA

**NAME:** Kathryn R. Search  
**ADDRESS:** 2011 Health Sciences Bldg  
 Norfolk, VA 23529

### EDUCATION:

In progress      Old Dominion University  
 Norfolk, VA  
 Master of Science in Dental Hygiene  
 2013                University of Pittsburgh  
 Pittsburgh, PA  
 Bachelor of Science in Dental Hygiene

### LICENSES:

2015 – Present      Virginia Board of Dentistry, Dental Hygiene License  
 2011 – Present      Pennsylvania State Board of Dentistry, Dental Hygiene License  
 2011 – Present      Pennsylvania State Board of Dentistry, Local Anesthesia Permit

### PROFESSIONAL EXPERIENCE:

2016 – present      Good Neighbor Dental – Dental Hygienist  
 2013 – 2015        Dr. Matthew Patterson and Dr. Vince Votilla – Dental Hygienist  
 2014 – 2015        Dr. Kerry Johnson – Dental Hygienist

### MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES

2009 - Present      American Dental Hygienists' Association (PA, VA)  
 2016 - Present      Sigma Phi Alpha National Honor Society for Allied Health  
 2015 - Present      PDHA Governmental Relations Council

### SCHOLARSHIPS

2016                Friends of Dental Hygiene – Old Dominion University  
 2016                The DPS, Inc. Graduate Dental Hygiene Endowed –  
 Old Dominion University