RESEARCH

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

Kathryn R. Search RDH, MS; Susan L. Tolle, RDH, MS; Gayle B. McCombs, RDH, MS; Aaron Arndt, PhD

Abstract

Purpose: The purpose of this study was to survey entry-level dental hygiene program directors in the United States (U.S.) to assess their perceptions of dental hygienists with visible tattoos as well as to determine current policies related to dress codes in U.S. dental hygiene programs.

Methods: Data was collected with an online survey emailed to 340 dental hygiene program directors yielding a 43% (n=141) response rate. Participants indicated their opinions of visible tattoos on the basis of professionalism and school policy satisfaction.

Results: Eighty percent of respondents reported their program as having dress code policies 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. Most participants agreed that dental hygiene faculty should discuss the impact of visible tattoos on future employment opportunities, and that the community would view the school as less professional if students had visible tattoos ($p<0.0005$). Personal tolerance toward tattoos ($p< 0.001$), but not age, ($p = 0.50$), was significantly associated with satisfaction concerning program tattoo policies. A lower tolerance towards visible tattoos ($p < 0.001$) was associated with an increased likelihood that the dental hygiene program dress code included policy on visible tattoos.

Conclusion: Study results showed that visible tattoos were not perceived favorably and that personal perceptions of dental hygiene program directors may have influenced school dress code polices regarding visible tattoos. These findings provide evidence based information for dental hygienists, students, faculty, administrators and hiring managers for formulating policies relating to body art.

Keywords: professionalism, dental hygiene, dental hygiene education, health care dress codes, tattoos, body art

This manuscript supports the NDHRA priority area **Professional development: Education** (educational models).

Submitted for publication: 12/19/2016; accepted: 9/5/2017

Introduction

Dental hygiene programs are required to make important decisions about appearance and dress code policies relating to both faculty and students. A contemporary aspect of professional appearance in healthcare is the presence of visible tattoos.[1-3] Tattooing has increased in popularity among all ages, socioeconomic groups and professions, while also crossing gender, social class, and racial barriers.[4,5] National polling indicates that three in ten United States (U.S.) adults have a tattoo,[6] yet negative stereotyping of individuals displaying tattoos is a well-documented cultural norm.[5,7] Surveys indicate that approximately 40% of adults aged 18-40 and 30% of the younger generation have visible tattoos.[8-9] This once unorthodox practice is commonly perceived as mainstream in today's society, especially among the millennial generation.[5,10-12] 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.[13]

Despite their increased prevalence, visible tattoos in the professional work environment are often viewed as inappropriate and unprofessional. [1,3,14-15] Negative stereotypes are predominant especially in fields that emphasize appropriate appearance, and research suggests individuals with visible tattoos are perceived as less intelligent, professional, approachable, trustworthy, and kind.[1,14,16-17] These negative stereotypes have the potential to impact the patient /health care provider relationship as well as the student/faculty relationship.[17] For example, if patients associate tattoos with negative stereotypes, they may expect the work performance of the health

care provider to be less satisfactory. Moreover, these negative perceptions have the potential to negatively impact the overall professional image of the provider and be generalized to the particular health care profession. Patient satisfaction is a valued commodity in all health care settings. Patient dissatisfaction, whether based on perceived treatment issues or clinician appearance, could impact business as well as patient's adherence to treatment recommendations and outcomes.[17]

Appearance is a powerful aspect of non-verbal interactions and is considered an essential mode of communication.[1,17-20] Brosky and colleagues found that patients' first impressions of both dental students and faculty affected the comfort and anxiety levels of patients and the clinician's appearance influenced patients' perceptions of professionalism.[18] Physical appearance was shown to influence the professional image of health care providers and visible tattoos have been reported to diminish professional image and credibility. [1,16,17-19] LaSala and Nelson advocate even though various settings require specific dress protocols, professional nurses should consistently be "sensitive to the image presented" and question whether visible tattoos plays a role in this sensitivity.[19]

Limited research on individuals' perceptions of health care workers with visible tattoos is available to date. However, research findings reported in the nursing literature suggests patients often hold negative perceptions of health care providers with visible tattoos.[1,3,16] Westerfield et al. surveyed patients to determine their perceptions of nurses with visible tattoos and found that hospitalized patients perceived that nurses without visible tattoos were more caring, confident, reliable, attentive, cooperative, professional, efficient, and approachable when compared to nurse providers with visible tattoos.[16] Results also suggest that women with visible tattoos were perceived as less professional than their male counterparts indicating a possible gender bias in the perception of nurses with tattoos.[16] Similar results on gender were reported by Boultinghouse who found that female nurses with visible tattoos were perceived to be less trustworthy and kind compared to female nurses without tattoos, although male nurses with and without visible tattoos were rated the same in the areas of kindness and compassion.[2] Thomas et al. also surveyed hospital patients and found that the nurse with the most body art was rated less caring, skilled, knowledgeable and professional.[1] In comparison to ratings made by patients and faculty, student nurses rated the nurse with the most body art to be more caring than a nurse without tattoos, suggesting that younger health care workers did not view body art negatively.[1]

Two studies conducted in dentistry evaluated perceptions of visibly tattooed dental hygienists in regards to professionalism.[17,21] Quiros et al. found visibly tattooed dental hygienists, despite the size (small or large) of tattoo, were perceived negatively by dentists when compared to dental hygienists without visible tattoos.[21] Quiros concluded dentists surveyed in the Commonwealth of Virginia were most concerned with their practice image in terms of patient perceptions and acceptance.[21] The presence of visible tattoos may impact how female dental hygienists are perceived by dentist employers and consequently hinder employment opportunities. Verrisimo et al. studied dental patients' perceptions of dental hygienists with visible tattoos of varying sizes in regards to perceived professionalism and found that hygienists with large visible tattoos were perceived as being less professional, than the dental hygienist with no or small tattoos.[17]

Among the millennial generation, a survey by Foltz showed that 86% of college students believed any student with visible tattoos would have a harder time finding employment and 95% of those surveyed stated that they would make sure tattoos were not visible during a business interview.[12] However, other research indicates that these negative stereotypes may be changing, especially in the younger generation.[22-23] Swami et. al. concluded from two separate studies that traditional differences in perceptions regarding body art will fade as visible tattoos become more mainstream, and that tattooed and non-tattooed individuals have more commonality than differences. [22-23]

Evidence-based research should be included in dress code policies to the same extent that other policies and practices in health care are applied.[1,10] Dress code policies regarding the visibility or concealment of tattoos in health care and educational environments, lack supporting evidence.[24] Dorwart et al. reported findings from a telephone survey regarding body art policies for nursing employees. Of the 13 hospitals that shared their policy on body art, none of the institutions provided a rationale or scientific research supporting their existing protocol.[10] Resenhoeft et al. conducted two experimental studies with community college students and found that tattoos negatively influenced the students' perceptions of an individual in 13 different personal areas. An implication of the study findings is that a health care provider may potentially have more negative perceptions towards patients with tattoos when compared to one without tattoos. Further study is indicated in regards to health care providers' perception of individuals with tattoos and the impact on patient care outcomes.[25] Understanding the effects tattoos have on the health care professions as well as public perceptions will build the evidence based model necessary for providing the best quality of care.

There is a gap in the literature on the dress code policies and regulations regarding visible tattoos in oral health care education, including dental hygiene.

While the image of what constitutes dental hygiene professionalism originates in education, there is no research on the role dental hygiene administrators' perceptions plays concerning students with visible tattoos or how existing policies on visible tattoos are established and enforced in dental hygiene education. The purpose of this study was to survey the perceptions of dental hygiene program directors toward dental hygiene students with visible tattoos and to determine current policies related to dress codes in United States (U.S.) dental hygiene programs.

Methods

A fourteen-item investigator-designed electronic survey was administered via a commercial web based software company (www.surveymonkey.com) and distributed to the 340 U.S. dental hygiene program directors of entry level dental hygiene programs, as reported by the American Dental Hygienists' Association.[26] The study was determined to be exempt by the Old Dominion University College of Health Sciences Institutional Review Board Committee and all responses were collected anonymously. One follow-up email was sent two weeks after the initial survey was distributed and the survey was available for three weeks.

The *Dental Hygiene Tattoo Survey* introduction letter provided the participants information about the study, and obtained participant consent. The survey consisted of four demographic questions related to gender, age, and program demographics; two open ended questions related to policies and personal tattoo status; and ten questions where participants used a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree), to indicate their impressions of visible tattoos in dental hygiene education on the basis of professionalism, concern, impact, and appropriateness. A panel of Old Dominion University marketing and dental hygiene faculty 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. Two open-ended questions were transcribed and qualitatively analyzed by coding responses according to distinct ideas. All coding was reviewed by a colleague prior to frequency analysis to establish content reliability. Differences in response frequency issues were discussed, and calibration in responses was achieved.

Data analyses

Statistical analyses were performed using SPSS 21 software and the significance level was set at $p<0.05$. Descriptive statistics were used to analyze response frequency to open and 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. Open-ended questions were transcribed and qualitatively analyzed by coding responses according to distinct ideas. A linear regression model was used to determine the relationship between the respondent's 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.

Results

Of the 340 U.S. dental hygiene program directors invited to participate, nine emails were undeliverable for a total of 331 invitations. A total of 141 (n=141) program directors successfully completed the survey for a response rate of 43%. Five participants did not complete the entire survey; therefore, were not included in the response rate. The majority of participants were female (95%) and 77% were employed in an educational institution that awarded an associate degree (Table I). Participants ranged in age from twenty-nine to seventy years, with an average age of 54.86 years (SD=7.76). Most participants (73%) were between the ages of fifty and sixty-four, and 7% were aged sixty-five and older. Respondents were representative of all regions in the U.S., with the largest percentage from the South (Table II).

The majority (80%) of respondents reported their respective dental hygiene program had a dress code policy on visible tattoos. Respondents indicating that their program had policy regarding visible tattoos (n=113), 14% reported their policy applied exclusively to students while 89% reported that their

Table I. Demographic Data by Number and Percentage of Total Respondents (n=145)

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

Table II. Program Location by Region, Number and Percentage of Total Respondents (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%

policy applied to both faculty and students. Twenty percent (n=28) of the respondents did not currently have a dress code policy on visible tattoos, with 43% indicating a need for written tattoo policy while 57% of those without a policy indicated that a written tattoo policy was unnecessary. When participants were asked about personal tattoo status, the vast majority of the respondents (87%) reported they did not personally have a tattoo. Of the eighteen program directors indicating having a tattoo, only one reported that the tattoo was visible. The majority of the respondents with tattoos (83%), reported having fewer than three tattoos.

A seven-point Likert type scale ranging from strongly disagree (1) to strongly agree (7), was used to indicate participants' opinions of visible tattoos on the basis of professionalism, concern within the school, dress code policy satisfaction, tolerance toward visible tattoos, whether visible tattoos needed to be covered, impact on future employment, and impact on community opinions (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 reveal both students (Mean=5.57, SD=1.44, $p<.0005$) and faculty (Mean=5.76, SD=1.49, $p<.0005$) with visible tattoos are perceived as significantly less professional by respondents (MeanΔ=-1.57, 95% CI [-1.82 to -1.33], $t(138)=12.82$); (MeanΔ=-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 (Mean=4.73, SD=1.99, $p<.0005$) are a concern in their dental hygiene programs (MeanΔ=-.0.73, 95% CI [-1.05 to -0.41], t (138) = 4.50). However, visible tattoos on faculty (Mean=3.13, SD=2.22, $p<.0005$) typically were not perceived as a problem since most respondents disagreed with this statement (MeanΔ=0.88, 95% CI [0.51 to 1.26], t (138)=-4.69).

Significant differences were also found when evaluating participants' level of satisfaction (Mean=5.77, SD=1.56) with their program's existing dress code policy concerning visible tattoos (MeanΔ=-1.77, 95% CI [-2.03 to -1.51], t (138) = 13.40, $p<0.0005$). Results suggest that most program directors are satisfied with their existing visible tattoo policies. In regards to tolerance toward visible tattoos, results suggest most respondents believe visible tattoos should be covered in the educational setting (Mean=3.23, SD=2.22) (MeanΔ=0.73, 95% CI [0.38 to 1.09], $t(138) = -4.09$, $p<0.0005$). Additionally, results reveal significantly more respondents agreed than disagreed that visible tattoos should be covered in both clinical (Mean=5.75, SD=1.79) (MeanΔ=-1.74, 95% CI [-2.04 to -1.44], t (138) = 11.46, $p<0.0005$), and community settings (Mean=4.80, SD=2.11) (MeanΔ=-0.78, 95% CI [-1.14 to -0.43], $t(138) = 4.39$, $p<0.0005$).

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

Of the 146 respondents, 112 provided responses to the open-ended questions on program policy description and identification of the program policy maker concerning visible tattoos. The majority of these participants (97%) focused their tattoo policy description with regard to the covering of visible tattoos. More detailed responses concerning policy descriptions regarding covering tattoos were further subcategorized and results are found in Table IV. Identification of program policy maker(s) was analyzed according to

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

	1 Strongly Disagree	2	3	4 Neutral	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 Comparison of Mean Values of Program Director Responses to Neutral Rating

	t	df	Sign. (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	1.94864	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.	11.3228	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 Program Policy Maker Identification (n=112)

	Number	Percentage
Program policy description		
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%
Program policy maker		
Credentialed dental faculty team	85	76%
Curriculum committee including students	3	3%
Corporate education department	4	4%
Dental hygiene program director only	9	13%

the following groups: credentialed dental faculty team (76%), curriculum committee (including students) (3%), corporate education department (4%), and dental hygiene program director exclusively (13%) (Table V).

An ordinary least squares (OLS), linear regression analysis 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.' The OLS regression model is significant (F (2, 135) = 10.06, R^2 = .13, p < .001. The analysis showed tolerance toward tattoos (β = -0.36, p < 0.001, 95% CI [-.38, -.15]) not age (β = -0.06, p =0.50, 95% CI [-.04, .02]) was significantly associated with satisfaction concerning program tattoo policies. Program directors who indicate a decreased tolerance toward visible tattoos are 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 statement 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 (β = -0.73, p < 0.001) not age (β = -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. Program directors who have an increased tolerance for visible tattoos are less likely to institute program tattoo polices. Age was not statistically significant at p<0.05 level.

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

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
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."

Discussion

Results from this study suggest visible tattoos are a concern in dental hygiene educational settings. Data revealed most respondents believe students and faculty with visible tattoos were perceived as being less professional, which may support this study's findings that the majority of dental hygiene programs require that visible tattoos be covered. In contrast, in a pilot study with dental hygiene students, McCombs et al. found only 48% of the students believed visible tattoos should be covered in clinical settings even though most agreed that tattoos were unprofessional.[27] The younger age of the student respondents as compared to the average age (54.86 years) of the program directors could explain this finding.

Findings from the present study are consistent with nursing research in which professionalism was examined. Thomas et al. concluded that self-expression through the display of tattoos should not

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

Predictor	β	p
Constant	7.87	.001
Tolerance	-.73	.00
Age	-.06	.09

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

be a part of the nursing professional image and tattoos should not be visible when representing a professional role.[1] Results also are supported by Merrill and Westerfield et al. who found that visible tattoos on nurses were perceived by patients as creating a less professional image.[3,16] Moreover, most participants in this study did not view their communities as being liberal. This impression may be related to the required covering of visible tattoos in both clinic and community settings, as respondents may believe that community patients would view the presence of visible tattoos on students unfavorably. Low opinions could result in fewer patient appointments at the program clinic. The majority of the respondents in this study did not describe their community as being particularly liberal. If more respondents had been from liberal communities, policies on visible tattoos in various settings might have been less restrictive.

Concern for visible tattoos on students compared to faculty differed. 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 generations, representing one of the largest growing cohorts of tattoo consumers, compared to the baby boomers.[6] In addition to the age of participants in this study, which averaged 55 years, only one respondent indicated that their tattoo was visible. This could explain why respondents did not view visible tattoos as a faculty concern.

Results suggest most participants agreed that members of their community and individuals hiring their graduates would view the school as less professional if students had visible tattoos. These findings are congruent with nursing research demonstrating that nurses were also rated less professionally by community patients if they had a visible tattoo.[1,3,16] Additionally, Verissimo et al. found that dental patients viewed the dental hygienist with a visible tattoo as being less professional.[18] Most participants agreed that faculty should discuss the impact of visible tattoos on future employment opportunities. Dental hygiene programs want to graduate competent, professional individuals who are worthy of employment. Timming et. al. as well as Quiros et al. reported that body art may significantly impact hireability, lowering employment opportunities when applicants displayed visible body art.[21,28] Moreover, Burgess et al. found that regardless of employers' personal feelings about tattoos, if they believed clients would rate tattoos as unprofessional, the employer would not choose to hire an individual with visible tattoos.[29]

Tattooing may also impact employment opportunities specifically for dental hygienists. Gender bias toward women with tattoos is supported in the literature and has particular relevance for the female dominated profession of dental hygiene.[2,16] Hence, it may be relevant and important for programs to discuss the placement of tattoos with students. A discussion on the effect of visible tattoos on the dental hygiene professional and possible gender bias could be incorporated into the curriculum within an existing practice management course.

Individuals from various geographic regions of the U.S. may differ in how they perceive members of their communities would view dental hygienists with visible tattoos. Furthermore, study respondents who viewed their communities as being liberal, may believe the need for a dress code policy on visible tattoos is not warranted. Tattoos may be accepted and possibly even enhance the image of a health care provider and a dental practice in segments of the population considered to be liberal. Timing et al. noted that some workplace settings may prefer a certain employee aesthetic if catering to clients with tattoos.[28] Therefore, employers may even prefer that their employees have tattoos so they appear more similar to their clients; this could apply to dental practices as well.

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 communities more tolerant of tattoos, perceptions concerning professionalism of the individual with a visible tattoo may be dependent on size, gender, degree, and type of image. Taking this into consideration, dental hygiene programs may address the occasional student or faculty member with a visible tattoo on an individual basis. Furthermore, younger persons may find tattoos to be attractive with few negative stereotypes.[12,28] Depending on the average age of the patient base in a community, health care hiring managers may find visibly tattooed health care professionals are not offensive, and may even enhance the image of the practice.[28]

While age is considered an important factor affecting attitudes toward tattoos, participants' age in the current study 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 finding was surprising since most (82%) of the participants were over the age of 50. Although the relationship between age and the likelihood that a program dress code policy on visible tattoos existed narrowly missed accepted statistical significance (p=0.09), some scholars do report statistical significance when p<0.10.

Results from this study may help dental hygiene programs make valid, reliable and evidence-based decisions regarding polices related to visible tattoos. Study findings may also help faculty and administrators assist students in understanding hiring practices related to visible tattoos and potential barriers in employment settings. The teaching of professionalism is an important aspect of health care education because appearance may affect a patient's image of the health care professional.[1,16,18] Today's millennial students will be creating program policies and making hiring decisions in the future.[12] Existing program policies regarding visible tattoos may become less restrictive as younger generations assume future administrative positions in dental hygiene education.

Several limitations may have influenced the study findings. Of the 331 dental hygiene program directors emailed, only 141 directors responded and completed the survey in its entirety. The limited response rate (43%) may be due to the timing of the survey distribution (spring break) for some institutions and may limit the generalizability of results to all U.S. dental hygiene programs. Future researchers should consider distributing the survey during a different time of the year, such as the middle of fall semester when the majority of educational programs are in session. The limited age range of the participants may not have been representative of perspectives of younger dental hygiene program directors. Results may also not be generalizable outside the U.S. due to differing cultural perspectives on visible tattoos. Lastly, researcher bias must also be accounted for with a purposive sampling technique. While survey questions inquired about possible relationships between tattoo policies and program directors' attitude toward visible tattoos, explicit questions investigating the rationale behind the tattoo policy or lack thereof, was not defined. Future studies should consider the impact race, religion and patient's perception of dental hygienists and students with visible tattoos, as well as specific types and size of tattoos.

Conclusion

Perceptions of professionalism in health care are important in promoting positive patient interactions and outcomes that are influenced by clinician appearance. This study highlights dental hygiene program directors' perceptions of students and faculty with visible tattoos. Polices limiting visible tattoos in educational settings by covering, are prevalent and may be related to perceived negative perceptions that may be occurring within the community at large. Additionally, program directors' personal perceptions may have influenced school dress code polices. These findings provide insightful information for dental hygienists, students, faculty, administrators and hiring managers as they formulate and implement policies relating to body art.

Kathryn R. Search RDH, MS is an adjunct instructor; ***Susan L. Tolle, RDH, MS*** is a professor; ***Gayle B. McCombs, RDH, MS*** is a professor; all in the School of Dental Hygiene, Old Dominion University, Norfolk, VA.

Aaron Arndt, PhD is an associate professor, Department of Marketing, Old Dominion University, Norfolk, VA.

Corresponding author: Susan L. Tolle, RDH, MS; ltolle@odu.edu

References

1. Thomas CM, Ehret A, Ellis B, et al. Perception of nursing caring, skills, and knowledge based on appearance. J Nurs Admin. 2010 Jan;40(11):489-97.

2. Boultinghouse DM. Visible tattoos and professional nursing characteristics: a study on how appearance affects the perception of essential qualities of nurses. [undergraduate honors thesis]. [Fayetteville AK]: Eleanor Mann School of Nursing: University of Arkansas; 2015. 40p.

3. Merrill K. Professional dress vs. employee diversity: patient perceptions of visible tattoos and facial piercings. Poster session presented at: Sigma Theta Tau International 26th International Nursing Research Congress; 2015 Jul 23-27; San Juan, PR.

4. Tiggemann M, Hopkins L. Tattoos and piercings: bodily expressions of uniqueness. Body Image. 2011 Mar 29;8(3):245-50.

5. Heywood W, Patrick K, Smith AM, et al. Who gets tattoos? Demographic and behavioral correlates of ever being tattooed in a representative sample of men and women. Ann Epidemiol. 2012 Jan;22(1):51-6.

6. Harris Poll. Tattoo takeover: Three in ten Americans have tattoos, and most don't stop at just one [Internet]. Chicago: PR Newswire; 2016 Feb 10 [cited 2016 Feb 10]. Available from: https://www.prnewswire.com/news-releases/tattoo-takeover-three-in-ten-americans-have-tattoos-and-most-dont-stop-at-just-one-300217862.html

7. Swami V, Furnham A. Unattractive, promiscuous and heavy drinkers: Perceptions of women with tattoos. Body Image. 2007 Jun 13;4:343-52.

8. Pew Research Center. Tattoo gen nexters [Internet].Washington DC: Pew Research Center; 2008 Dec 9 [cited 2016 Jan 20]. Available from: http://www.pewresearch.org/daily-number/tattooed-gen-nexters/

9. Pew Research Center. Tattoo taboo [Internet]. Washington DC: Pew Research Center; 2010 Mar 24 [cited 2016 Jan 20]. Available from: http://www.pewresearch.org/daily-number/tattoo-taboo/

10. Dorwart SD, Kuntz SW, Armstrong ML. Developing a nursing personnel policy to address body art using an evidence-based model. J Continuing Educ Nurs. 2010 Jun 8;41(12):540-6.

11. Elzweig B, Peeples DK. Tattoos and piercings: issues of body modification and the workplace. SAM Adv Manage J. 2011 Winter;76(1):13-23.

12. Foltz KA. Millenial's perception of tattoos: self expression or business faux pas? Coll Stud J. 2014 Winter;48(4):589-602.

13. Pew Research Center. The tattoo divide [Internet]. Washington DC: Pew Research Center; 2009 Nov 2 [cited 2016 Jan 20]. Available from: http://www.pewresearch.org/daily-number/the-tattoo-divide/

14. Dean DH. Consumer perceptions of visible tattoos on service personnel. Manag Serv Q. 2010;20(3):294-308.

15. Dean DH. Young adult perception of visible tattoos on a white-collar service provider. Young Consumers. 2011 April;12(3):254-64.

16. Westerfield HV, Stafford AB, Speroni KG, Daniel MG. Patients' perceptions of patient care providers with tattoos and/or body piercings. J Nurs Admin. 2012 Mar;42(3):160-4.

17. Verrissimo A, Tolle SL, McCombs G, Arndt A. Assessing dental clients' perceptions of dental hygienists with visible tattoos. Can J Dent Hyg. 2016 Jun10;50(3):103-9.

18. Brosky ME, Keefer OA, Hodges JS, Pesun IJ, Cook G. Patient perceptions of professionalism in dentistry. J Dent Educ. 2003 Aug;67(8):909-15.

19. LaSala KB, Nelson J. What contributes to professionalism? Medsurg Nurs. 2005 Feb;14(1):63-7.

20. Chung H, et. al. Doctor's attire influences perceived empathy in the patient-doctor relationship. Patient Educ Couns. 2012 Feb 26;89:387-91.

21. Quiros CC, McCombs G, Tolle SL, Arndt A. The association between dental hygienists with visible tattoos and professionalism in the commonwealth of Virginia. Int J Evid Based Pract Dent Hygienist. 2016 Summer;2:129-34.

22. Swami V, Tran, US, Kuhlmann T, et al. More similar than different: tattooed adults are only slightly more impulsive and willing to take risks than non-tattooed adults. Pers Indiv Diff. 2015 Sep 5;88:40-4.

23. Swami V, Gaughan H, Ulrich TS, et al. Are tattooed adults really more aggressive and rebellious than those without tattoos? Body Image. 2015 Oct 4;15:149-52.

24. Wittmann-Price RA, Gittings KK, Collins KM. Nurses and body art: what's your perception? Nurs Manag. 2012 Oct;43(10):44-7.

25. Resenhoeft A, Villa J, Wiseman D. Tattoos can harm perceptions: a study and suggestions. J Am Coll Health. 2008 Mar-Apr;56(5):593-6.

26. American Dental Hygienists' Association. Entry level dental hygiene programs. [Internet]. Chicago: American Dental Hygienists' Association; 2017 Nov 17 [cited 2016 Jan 20]. Available from: http://www.adha.org/resources-docs/Entry_Level_Schools_By_States_Public_Site_November_2017.pdf

27. McCombs G, Tolle SL, Arndt A. Visible tattoos in clinical practice as perceived by dental hygiene students: pilot study. J Dent Hyg. 2015 Dec;8(6):404.

28. Timming AR. Visible tattoos in the service sector: a new challenge to recruitment and selection. Work Employ Soc. 2014 Jul 30;29(1):60-78.

29. Burgess M, Clark L. Do the "savage origins" of tattoos cast a prejudicial shadow on contemporary tattooed individuals? J Appl Soc Psychol. 2010 Mar; 40(3):746-64.