

# Issues in Dental Hygiene Education

## Self-Care Practices of Dental Hygiene Students

Liridona Krasniqi, RDH, MS; Linda D. Boyd, RDH, RD, EdD; Lori Giblin-Scanlon, RDH, MS, DHSc; Jared Vineyard, PhD

### Abstract

**Purpose:** Little is known about the self-care practices of dental hygiene students. The purpose of this study was to explore the self-care practices among dental hygiene students to examine the relationships between self-care practices, work hours, and caregiver responsibilities.

**Methods:** The validated Health-Promoting Lifestyle Profile [HPLP II] survey was used to assess a convenience sample of dental hygiene students (n=416) in the United States (US) and Canada. The survey instrument consisted of 61 items in six subscales; spiritual growth, nutrition, interpersonal relations, health responsibility, physical activity, and stress management and was distributed to dental hygiene students through program directors and student social media sites. Data was analyzed using correlation, Mann-Whitney U, Kruskal-Wallis and regression to explore relationships between the variables.

**Results:** Eighty-one percent of the target population opened the link and completed the survey (n=337). Mean scores for interpersonal relations (M=3.00) and spirituality (M=3.03) subscales indicated respondents were often engaging in these behaviors. Mean scores for physical activity (M=2.26), stress management (M=2.31), nutrition (M=2.44), and health responsibility (M=2.30) sub-scales suggested respondents sometimes practiced these health promoting behaviors. Respondents working more off-campus hours reported stress management behaviors less frequently ( $p<0.05$ ). Participants with children living in the home had the median scores of stress management behaviors (Md=2.07, IQR=0.41) across all types of living situations ( $p=0.002$ ).

**Conclusion:** Outcomes from this study identified the need for improvement in health promoting behaviors related to nutrition, physical activity, and stress management in dental hygiene students. In addition, students with off-campus work and caregiver obligations may need additional assistance with self-care and stress management strategies to support academic success, given the academic and clinical rigors of the dental hygiene program.

**Keywords:** dental hygiene students, self-care, wellness behaviors, stress management, health promotion

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### Introduction

Self-care, actions taken by an individual to support their personal well-being, is essential to prevent disease and maintain health.<sup>1,2</sup> Individuals who engage in self-care and health-promoting activities have been shown to experience life satisfaction, improved health status, and a general sense of well-being.<sup>3</sup> Major components that contribute to a healthy lifestyle include a sense of personal responsibility for one's health, nutrition, physical activity, spiritual growth, sleep, and stress management.<sup>4,5</sup> Self-care also encompasses making time for self-reflective and social activities, including spending time with family and friends, going to movies, and vacationing. Participating in mindfulness activities such as

meditation, yoga, and religious practices are considered part of self-care.<sup>6</sup>

Dental and dental hygiene curricula can be very stressful, resulting in negative impacts on students' health.<sup>7,8</sup> The most significant stressors for dental hygiene students are academic performance in didactic and clinical courses, general workload, patient care, and licensure exams.<sup>9,10</sup> In addition, students can also experience increased stress due to the demands of employment, family, and social obligations.<sup>3</sup> Significant amounts of stress for dental and dental hygiene students can impact their mental, physical health, and performance as well as quality of life.<sup>8,10</sup> Stress can lead to

psychological problems including anxiety, depression, and burnout.<sup>9</sup> There are growing concerns that this stressful educational environment may lead to exhaustion and burnout before graduates enter the workforce. This can be particularly problematic considering that dental hygiene has been identified as a high-risk profession for burnout due to work stress, musculoskeletal disorders, long work hours, patient demands, job dissatisfaction, and work-life balance.<sup>10-12</sup> Neglecting self-care can lead to stress-related illnesses, including digestive disorders, decreased immunity, sleep issues, depression, headaches, irritability, and anger.<sup>3,6</sup>

Self-care is especially important among health professionals, because they are viewed as role models for patients.<sup>2,3</sup> Early interventions in self-care behaviors are critical to incorporate into the health care programs to assist in educating future health care providers in stress management and self-care strategies. Students can gain the necessary skills to handle stress once in the work force, minimize adverse health risks and potential job dissatisfaction.<sup>6,13</sup> Self-care practices among health care students are critical due to the many challenges encountered during the education process.<sup>3,13,14</sup> In a review of the literature, Younas found that while nursing students were aware of the importance of diet, sleep, and exercise, they neglected their own self-care practices due to work overload, academic stress, and lack of effective self-care strategies.<sup>14</sup> Other researchers have examined nursing students' perspectives on self-care and health promotion and found that perceptions of students' own health were correlated with their personal patterns of sleep, exercise, and diet.<sup>15</sup> Additionally, these nursing students expressed interest in improving their health and needed guidance from educators.<sup>15</sup>

Avenues for addressing health care student concerns may include incorporating self-care interventions in their respective professional programs and assistance in understanding the importance of self-care.<sup>13</sup> Health care educators should assess self-care behaviors and identify the challenges students may be facing early in the education process, to assist in maintaining or improving self-care behaviors.<sup>14-16</sup> Outcomes from previous research suggest that including health promotion criteria in courses, may encourage healthy behaviors in students.<sup>3</sup> Educators are well positioned to teach self-care and model health promoting behaviors to assist students in incorporating health promotion and self-care strategies.<sup>15</sup> A study by Stark et al. included a self-care intervention in a required course for nursing and occupational therapy students and found an increase in health promoting behaviors and overall health responsibility in the participants.<sup>3</sup> Another study conducted by Ashcraft and Gatto integrated health promotion interventions over a three year time frame into the course content of a nursing program.<sup>13</sup> Students created a care plan that included

self-care goals, implementation, evaluation, and self and peer reflection.<sup>13</sup> Likewise, Stark et al. evaluated self-care behaviors amongst nursing students as well as other student health professions.<sup>3</sup> Both studies demonstrated significant increases in healthy behaviors among students receiving the curricular intervention.<sup>3,13</sup>

Current research on self-care for health professions students has focused on nursing programs. Little is known about self-care practices among dental hygiene students. The purpose of this study was to explore the self-care practices of dental hygiene students and examine the relationships between self-care practices, work hours, and caregiver responsibilities.

## Methods

A cross-sectional survey research design was used to assess a convenience sample of dental hygiene students (n=416) in the US and Canada. The validated Health-Promoting Lifestyle Profile [HPLP II] survey<sup>19,20</sup> was distributed on dental hygiene social media sites and through dental hygiene program directors. Non-probability sampling, along with a snowball sampling technique, was utilized for recruitment. Inclusion criteria were being >18 of age, ability to read and understand English, and current enrollment in an entry-level dental hygiene program. A power analysis (G\*Power),<sup>17,18</sup> for a point biserial correlation, medium effect size (R<sup>2</sup>=.3),  $\alpha=.05$ , and 80% power, suggested a minimum sample size of n=80. A target sample size of 155 was recommended to account for attrition of 30%. The MCPHS University's Institutional Review Board granted exempt status to this study.

### Survey instrument

The final survey instrument included 61 questions that included the HPLP II instrument (52 items) and demographic questions (9 items). Permission for the use of the Health-Promoting Lifestyle Profile [HPLP II]<sup>19,20</sup> was obtained from the authors. The HPLP II contained the following six subscales designed to measure elements of a health-promoting lifestyle: health responsibility (9 items), physical activity (8 items), nutrition (9 items), spirituality (9 items), interpersonal relations (9 items), and stress management (8 items). Responses used a 4-point Likert scale (never, sometimes, often, and routinely) and were scored by averaging each item related to the six subscales. A total health promoting score was calculated by averaging the participants' responses across all 52 items from the HPLP. Mean sub-scale scores >2.5 were considered to be more positive.

### Procedures

An invitation to participate in a web-based survey were posted on dental hygiene student social media sites including seven different Facebook and Instagram pages; follower numbers for the social media sites ranged from 1000 to

over 172,000. Due to the initial low response rate, emails to directors of dental hygiene programs in the US (n=291) and Canada (n=15), were sent requesting assistance in the survey invitation dissemination. Twenty-two program directors agreed to disseminate the invitation to participate. Reminders were posted on social media sites weekly and the survey was open for approximately six weeks. There was no follow-up with program directors because an adequate sample size had been reached.

### **Data analysis**

Data were analyzed using the Statistical Package for the Social Sciences (SPSS23®, IBM; Armonk, NY, USA) software. Sample demographics and survey responses were summarized and reported with measures central tendency and variance (e.g., standard deviation, IQR). Variables were analyzed for statistical assumptions including normalcy and co-linearity and were assessed for transformation to address issues of non-normal distributions. Outliers were identified and removed, however, if the findings were consistent when including outliers, those cases were used in the main analysis. To explore the relationship between variables, Correlation, Mann-Whitney U, Kruskal-Wallis and regression were used. Adjustments to family-wise error (e.g., Bonferroni) were made for multiple statistical tests, where appropriate. Acceptable alpha level was set at .05, and all measures of effect size (e.g. 95% Confidence Interval, R<sup>2</sup>, Phi Coefficient) were determined.

### **Results**

Four hundred and sixteen surveys were opened; 79 participants were removed because they did not complete any survey questions for a completion rate of 81% (n=337). Seventy-two percent of the sample identified as white, 11% as Hispanic or Latino, 3% as black or African American. The mean age of participants was 25.3 years (SD=6.6), 96% were female (n=323), and worked, outside of school, an average of 21.0 hours (SD=14.6) weekly (n=173). The average number of hours students were employed in jobs on campus was M=22.3 hours (n=40; SD=16.2, 95%CL [17.1, 27.4]) versus off campus jobs was M=17.2 hours (n=160; SD=9.3, 95%CL [15.7, 18.6]). The combined total of those who were employed (on/off campus) and those who were not, is less than the total sample size because some participants did not provide the number of hours worked. Forty-one percent reported caregiver obligations outside of work hours. Demographic variables are summarized in Table I.

The six subscales demonstrated excellent reliability ( $\alpha=0.84$ ). Descriptive statistics for the items in the HPLP II (mean score for each subscale and total HPLP score) are

presented in Tables II and III. The interpersonal relations (M=3.00, SD=0.51, 95%CI [2.94, 3.05]) and spirituality (M=3.03, SD=0.51, 95%CI [2.98, 3.09]) subscales showed the highest mean scores while physical activity scores (M=2.26, SD=0.65, 95%CI [2.19, 2.32]) suggested that students often practiced these behaviors. Stress management (M=2.31, SD=0.51, 95%CI [2.26, 2.36]), and health responsibility (M=2.30, SD=0.56, 95%CI [2.24, 2.36]) were average frequencies, suggesting students sometimes practice those health promoting behaviors.

To examine the relationship between health promoting lifestyle and age, hours worked weekly, (both on and off campus) each of the subscales and the total HPLP score were analyzed using Spearman's Rank Order correlations. As age increased, the frequency of health responsibility ( $\rho=0.16$ ,  $p<0.001$ ) and health promoting behaviors also increased. Working more hours on campus was also associated with an increase in frequency of the health responsibility behavior ( $\rho=0.39$ ,  $p<0.05$ ). Increased off campus work hours were associated with decreases in the frequency of stress management health promoting behaviors ( $\rho=-0.19$ ,  $p<0.05$ ). All other correlations between age and hours worked (total, on and off campus) were not statistically significant ( $p>0.05$ ) (Table IV).

A Kruskal-Wallis test of medians was used to examine median differences for each categorical demographic variable and the subscale scores. Participants living at home with children, had the lowest frequency of stress management behaviors (Md=2.07, IQR=0.41) across all living situations ( $p=0.002$ ). Each subscale and overall scores by living situation is shown in Table V. A Bonferroni correction was calculated to adjust for family wise error and resulted in a new  $p$ -value cutoff of  $p<0.007$ . All other tests between living situation and subscale scores, fell above  $p>0.007$ , and were not statistically significant.

To examine whether those with caregiver and work responsibilities had different frequencies of health promoting behaviors as compared to respondents without caregiver and work responsibilities, a Mann-Whitney U was conducted comparing the median scores of the two groups for each subscale along with overall health. Participants without caregiver or work responsibilities had a higher median frequency of health promoting behaviors (Md=2.25, IQR=1.00) than those with caregiver and work responsibilities (Md=2.13, IQR=0.88) ( $p=0.047$ ). Additionally, participants without caregiver or work responsibilities had a higher median frequency of stress management behaviors (Md=2.37, IQR=2.25) than those with caregiver responsibilities (Md=2.15, IQR=0.50). It is notable that the IQR for median stress management behaviors amongst those without caregiver or work responsibilities

**Table I. Sample demographics (n=337)**

			95% Lower CL**	95% Upper CL**
	n*	%	%	%
<b>Age (n=335)</b>				
18 to 30	284	84.8	80.6	88.3
31 to 40	42	12.5	9.3	16.4
41 to 50	4	1.2	0.4	2.8
51 to 60	3	0.9	0.3	2.4
60+	2	0.6	0.1	1.9
<b>Gender (n=337)</b>				
Male	13	3.9	2.2	6.3
Female	323	95.8	93.3	97.6
Transgender	—	—	—	—
Prefer not to say	1	0.3	0.0	1.4
<b>Ethnicity (n=336)</b>				
White	242	72.0	67.1	76.6
Black or African American	17	5.1	3.1	7.8
Native American	3	0.9	0.3	2.4
Hispanic or Latino	39	11.6	8.5	15.4
Asian or Pacific Islander	24	7.1	4.8	10.3
Other	11	3.3	1.8	5.6
<b>Location (n=337)</b>				
US	318	94	91.5	96.5
Canada	19	6.0	3.5	8.5
<b>Housing situation</b>				
Live at home with parent(s)	115	34.1	29.2	39.3
Dorm	25	7.4	5.0	10.6
Apartment or house independently	70	20.8	16.7	25.3
With significant other	81	24.0	19.7	28.8
With significant other and children	46	13.6	10.3	17.6
<b>Marital status</b>				
Married	80	23.7	19.4	28.5
In a relationship	142	42.1	37.0	47.5
Single	108	32.0	27.2	37.2
Divorced	7	2.1	0.9	4.0
Widowed	0	0.0	—	—
<b>Caregiver obligations</b>				
Children	55	16.3	12.7	20.5
Parents	27	8.0	5.5	11.3
Grandparents	8	2.4	1.1	4.4
Other outside commitments	49	14.5	11.1	18.6
None	198	58.8	53.4	63.9

\*Sample sizes (n) vary; not all participants answered each of the demographic questions

\*\* Confidence levels for the proportion.

indicated considerable variance within that category. All other comparisons of median subscale scores or total health promoting behaviors between the two groups were nonsignificant ( $p>0.05$ ).

## Discussion

This study explored self-care practices among dental hygiene students. Study findings indicated that dental hygiene students scored slightly higher than the HPLP II mean subscale score of >2.5 for the interpersonal and spirituality subscales however physical activity, stress management, health responsibility, and nutrition had lower mean scores, demonstrating a need for improvement in self-care practices to help support academic success. Relationships between demographic variables and self-care behaviors among dental hygiene students were examined and it was found that frequencies of healthy responsibility promoting behaviors increased with age. Differences in self-care behaviors were also noted among the respondents based on their living situation. To evaluate the relationships more in depth, differences in self-care behaviors among students who worked and had caregiver obligations were compared to those who did not. The findings demonstrated a negative association with the total number of hours worked per week, and positive nutrition behaviors.

A mean score of  $\geq 2.5$  on the HPLP II survey instrument,<sup>15</sup> suggests positive health behaviors. The mean total health score for participants in this study was 2.57, indicating a slightly positive health promoting lifestyles in the sample population. However, when comparing the mean score of these participants to other health professions, dental hygiene students scored lower. Stark et al noted a mean score of 2.88 on the HPLP II pretest among students in allied health profession programs (not including dental hygiene).<sup>3</sup> In another study by Stark et al, Arab nursing students reported an average score of 2.64



**Table II. Item response frequencies (n=337)**

	Never/ Sometimes	Sometimes/ Always		Never/ Sometimes	Sometimes/ Always
	n (%)	n (%)		n (%)	n (%)
<b>Health Responsibility</b>			<b>Nutrition (continued)</b>		
Report any unusual signs or symptoms to physician or other health professional.	167 (49.6)	170 (50.4)	Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs and nuts group each day.	150 (44.5)	187 (55.5)
Read or watch TV programs about improving health.	270 (80.1)	67 (19.9)	Read labels to identify nutrients, fats and sodium content in packaged food.	154 (45.7)	183 (54.3)
Question health professionals in order to understand their instructions	148 (44.0)	188 (56.0)	Eat breakfast.	158 (46.9)	179 (53.1)
Get a second opinion when I question my health care provider's advice.	252 (74.8)	85 (25.2)	<b>Spiritual Growth</b>		
Discuss my health concerns with health professionals.	165 (49.1)	171(50.9)	Feel I am growing and changing in positive ways.	101 (30.0)	236 (70.0)
Inspect my body at least monthly for physical changes/ danger signs	202 (59.9)	135 (40.1)	Believe that my life has purpose.	60 (17.8)	277 (82.2)
Ask for information from health professionals about how to take good care of myself.	222 (65.9)	115 (34.1)	Look forward to the future.	36 (10.7)	301 (89.3)
Attend educational programs on personal health care.	283 (84.0)	54 (16.0)	Feel content and at peace with myself.	170 (50.4)	167 (49.6)
Seek guidance or counseling when necessary.	201 (59.6)	136 (40.4)	Work toward long-term goals in my life.	27 (8.0)	310 (92.0)
<b>Physical Activity</b>			Find each day interesting and challenging.	138(40.9)	199 (59.1)
Follow a planned exercise program.	243 (72.1)	94 (27.9)	Am aware of what is important to me in life.	41 (12.2)	294 (87.8)
Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	222 (65.9)	115 (34.1)	Feel connected with some force greater than myself.	139 (41.2)	198 (58.8)
Take part in light to moderate physical activity (e.g. sustained walking 30-40 minutes 5 or more times a week).	229 (68.2)	107 (31.8)	Expose myself to new experiences and challenges.	137 (40.7)	200 (59.3)
Take part in leisure- time (recreational) physical activities (such as swimming, dancing, bicycling).	249 (73.9)	88 (26.1)	<b>Interpersonal Relations</b>		
Do stretching exercises at least 3 times per week.	244 (72.4)	93 (27.6)	Discuss my problems and concerns with people close to me.	144 (42.7)	193 (57.3)
Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	113 (33.5)	224 (66.5)	Praise other people easily for their achievements.	44 (13.1)	293 (86.9)
Check my pulse rate when exercising.	235 (69.9)	101 (30.1)	Maintain meaningful and fulfilling relationships with others.	61 (18.2)	275 (81.8)
Reach my target heart rate when exercising.	215 (64.0)	121 (36.0)	Spend time with close friends.	146 (43.3)	301 (89.3)
<b>Nutrition</b>			Find it easy to show concern, love and warmth to others.	63 (18.8)	273 (81.3)
Choose a diet low in fat, saturated fat, and cholesterol.	240 (71.2)	97 (28.8)	Touch and am touched by people I care about.	65 (19.3)	271 (80.7)
Limit use of sugars and food containing sugar (sweets).	235 (69.7)	102 (30.3)	Find ways to meet my needs for intimacy.	167 (49.6)	170 (50.4)
Eat 6-11 servings of bread, cereal, rice and pasta each day.	260 (77.2)	77 (22.8)	Get support from a network of caring people.	89 (26.4)	248 (73.6)
Eat 2-4 servings of fruit each day.	211 (62.8)	125 (37.2)	Settle conflicts with others through discussion and compromise.	99 (29.5)	237 (70.5)
Eat 3-5 servings of vegetables each day.	203 (60.2)	134 (39.8)	<b>Stress Management</b>		
Eat 2-3 servings of milk, yogurt or cheese each day	173 (51.5)	163 (48.5)	Get enough sleep.	227 (67.4)	110 (32.6)
			Take some time for relaxation each day.	185 (54.9)	152 (45.1)
			Accept those things in my life which I cannot change.	154 (45.7)	183 (54.3)
			Concentrate on pleasant thoughts at bedtime.	211 (62.6)	126 (37.4)
			Use specific methods to control my stress.	227 (67.4)	110 (32.6)
			Balance time between work and play.	186 (55.2)	151 (44.8)
			Practice relaxation or meditation for 15-20 minutes daily.	285 (85.1)	50 (14.9)
			Pace myself to prevent tiredness.	240 (71.4)	96 (28.6)

**Table III. Subscale scores (n=337).**

	Mean	SD	Lower 95% CL	Upper 95% CL
HPLP Sub-Scales				
Physical Activity	2.26	.65	2.19	2.32
Health Responsibility	2.30	.56	2.24	2.36
Stress Management	2.31	.51	2.26	2.36
Nutrition	2.44	.45	2.39	2.48
Interpersonal Relations	3.00	.51	2.94	3.05
Spirituality	3.03	.51	2.98	3.09
HPLP Total Score	2.57	.40	2.52	2.61

While the overall mean HPLP score of 2.57 in this study is considered slightly positive, the actual health promoting frequency behaviors of the participants was more nuanced. Dental hygiene students fell below the cut-off of 2.5 on four out of six HPLP subscales including health responsibility, physical activity, nutrition, and stress management. While a score of  $\geq 2.5$  suggested slightly positive self-care behaviors, dental hygiene students would benefit from improvement in the majority of subscales.

In this study, more than half of the respondents (71%) reported sometimes or never choosing a diet low in fat, limited sugar intake (69.7%), ate 2-4 serving of fruit (62.8%), ate 3-5 serving of vegetables (60.2%), or ate 2-3 serving dairy (51.5%). All these intakes are aspects of a healthy diet based on the 2015-2020 Dietary Guidelines for Americans<sup>21</sup> and poor eating patterns increase the risk for many chronic diseases.<sup>1,22</sup> Students who lived with parents or in a dorm also had the lowest nutritional scores suggesting that students living in

**Table IV. Demographic variables and subscale scores, Spearman's rank order correlations (n=337)**

	Total	Health Responsibility	Physical Activity	Nutrition	Spirituality	Interpersonal Relations	Stress Management
Age	-.03	.16**	-.07	.02	-.10	-.10	-.08
Total hours	-.09	-.02	-.01	-.19*	.002	-.05	-.15
Off campus	-.12	-.12	.06	-.20*	-.02	-.02	-.19*
On campus	.07	.39	-.16	-.13	.08	-.01	-.06

\* $p < 0.05$  \*\* $p < 0.001$

**Table V. Subscale scores by living situation\* (n=337)**

	R		P		N		S		I		Str		O	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Live at home with parent(s)	2.22	.57	2.18	.63	2.35	.47	2.99	.62	2.93	.57	2.29	.54	2.50	.44
Dorm	2.06	.54	2.22	.57	2.38	.53	3.03	.60	2.92	.64	2.42	.50	2.51	.44
Apartment or house independently	2.35	.52	2.44	.73	2.47	.45	3.08	.47	3.10	.50	2.43	.53	2.65	.38
With significant other	2.42	.55	2.34	.64	2.53	.42	3.08	.40	3.09	.41	2.33	.45	2.65	.34
With significant other and children	2.33	.57	2.04	.54	2.43	.40	3.00	.42	2.90	.44	2.07	.43	2.48	.33

\*R=Health Responsibility, P=physical activity, N=nutrition, S=Spirituality, I=Interpersonal relations, Str=Stress management, O=Overall Health score  
M=mean subscale score; SD= standard deviation of the mean.

dorms and with parents may need additional support in making healthy eating choices. This finding is consistent with research suggesting students living in dorms are not making healthy food choices.<sup>23</sup> In a study of nursing students, fruit and vegetable consumption improved following a self-care intervention in the curriculum;<sup>13</sup> a similar intervention could be implemented for dental hygiene students to increase healthy diet choices and improve their nutrition.

Exercise plays an important role in physical and mental health.<sup>24</sup> Two-thirds of the respondents in this study (66.0%) reported that they never, or only sometimes, exercised (e.g., brisk walking, bicycling, aerobic dancing) vigorously for 20 or more minutes at least 3 times a week; and 72% reported never, or only sometimes, performed regular stretching exercises. These findings were similar to a study where 70% of the nursing students reported that they did not exercise enough.<sup>15</sup> Lack of physical activity is especially concerning since dental hygiene students need to learn good self-care behaviors to manage stress and avoid burnout later in the profession.<sup>9,13</sup> In the previously cited nursing student study, it was suggested that educators assist students in developing methods to improve and maintain self-care practices.<sup>15</sup> Additional suggestions for educators include guidance on time and stress management and making healthy lifestyle choices.<sup>15</sup> Supporting students in their development of self-care behaviors during their entry-level professional education may also result in their ability to educate and model healthy lifestyle behaviors for their patients.<sup>15</sup>

Results from this study also identified an association between work hours and survey subscales. Higher numbers of hours worked off campus per week were correlated with poorer nutrition habits and fewer stress management health promoting behaviors. A study by Garcia-Vargas et al. demonstrated that paid work during nursing students' studies had a negative impact on student academic success.<sup>25</sup> Findings from the current study may be helpful in supporting recommendations for students to work fewer hours during their dental hygiene education program.

Overall the findings suggest the need to educate and support students in managing stress and practicing daily self-care to support academic success.<sup>9,24</sup> Implementation of stress management strategies into course curriculum should be considered.<sup>13</sup> Recognizing the need for self-care early among students and providing the appropriate interventions can help decrease poor self-care practices among students.<sup>13</sup> Findings from this study indicated that dental hygiene students need improvement in the following subscales: health responsibility, physical activity, nutrition, and stress management. By

educating students on self-care and incorporating health promotion activities into the curriculum, students can develop an understanding of the behaviors needed to support success during the program with the goal of continuing these behaviors once they enter the workforce.<sup>13</sup>

The non-probability sampling and possibility of self-report bias limit the generalization of the study findings. The availability of the survey at the beginning of the fall semester presented challenges as students may have been less willing to participate due to the timing. Also, due to the low initial response rate on social media, program directors were used to invite students to participate in the survey. It is possible that some participants could have completed the survey more than once. The type of education program and the participant's year in the program were not included in the demographics limited additional comparisons, however the use of a validated survey and findings similar to those of nursing students were strengths of this study.

Future research recommendations include the need to identify effective interventions, including exploring complementary alternative therapies, to enhance student self-care. Further studies are needed to examine dental hygiene student self-care practices on a larger scale and study longitudinal changes within the academic program to better tailor interventions to support students.

## Conclusion

Dental hygiene students in this study were not adequately engaging in health promoting self-care behaviors related to nutrition, physical activity, and stress management behaviors. Caregiver and work obligations negatively correlated with mean health behavior scores. Dental hygiene students experienced stressors from family, employment, and academic sources. Dental hygiene education programs should consider implementing self-care interventions focusing on overall health to support academic success and career longevity.

*Liridona Krasniqi, RDH, MS* is an adjunct clinical faculty member, Springfield Technical Community College, Department of Dental Hygiene, Springfield, MA, USA.

*Linda D. Boyd, RDH, RD, EdD* is a professor and the Associate Dean for Graduate Studies; *Lori Giblin-Scanlon, RDH, MS, DHSc* is an associate professor and the Associate Dean for Clinical Programs; *Jared Vineyard, PhD* is an adjunct faculty member and statistician; all from the Forsyth School of Dental Hygiene, MCPHS University, Boston, MA, USA.

Corresponding author: Linda D. Boyd, RDH, RD, EdD;  
linda.boyd@mcphs.edu

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