

## Assessment of the University of Michigan's Dental Hygiene Partnership with the Huron Valley Boys & Girls Club: A Study of Students' and Staffs' Perceptions and Service Learning Outcomes

Sarah Christensen Brydges, RDH, BSDH; Anne E. Gwozdek, RDH, BA, MA

### Introduction

The goal of the Boys & Girls Club of America (BGCA) is to establish a safe environment for children and teens after school and during the summer. Typically serving low-socioeconomic children, the BGCA provides mentorship and guidance to those who would, typically, be left at home unsupervised.

The BGCA requires all clubs to present health-related curriculum each year in order to receive funding. One specific curricular guideline pertains to dental health education. To provide a standard educational format for each club to follow, the BGCA has adopted Crest's Cavity-Free Zone program, which assists by laying out oral health-related topics, objectives and activities. In the past several years, the Huron Valley Boys & Girls Club (HVBGC) in Ypsilanti, Michigan has formed a strong and dependent relationship with the University of Michigan (UM) Dental Hygiene students, creating a bond of service learning reciprocating benefits to both partners. With the assistance of the UM Dental Hygiene students, these oral health curricular requirements have been addressed at the HVBGC through students presenting oral health education to the club members throughout the year. Students have had the opportunity for involvement at the HVBGC through 3 of their dental hygiene courses, Health Education Methods (sophomore year), Community Dentistry (junior year) and Community Practicum (senior year).

### Abstract

**Purpose:** The Boys & Girls Club of America (BGCA) requires a health curriculum be taught. With the assistance of the University of Michigan (UM) Dental Hygiene program, these requirements have been addressed at the Huron Valley Boys & Girls Club (HVBGC) through dental hygiene students presenting oral health education to club members throughout the year. This study assessed the outcomes and benefits of the service learning initiative between the UM Dental Hygiene Program and the HVBGC from both the students' and staffs' perceptions.

**Methods:** Three surveys were distributed: one to the HVBGC staff, one to UM's Dental Hygiene class of 2012 (with no service learning experience at the HVBGC) and one to UM Dental Hygiene classes of 2010 and 2011 (most of whom had experience at the HVBGC). Qualitative and quantitative data were collected and evaluated.

**Results:** The respondents from the class of 2012 were less knowledgeable about the BGCA and access to care issues. The members of the classes of 2010 and 2011, 79% of whom had HVBGC experience, identified they had benefitted from this service learning experience. The HVBGC staff survey indicated a high level of satisfaction with the student presentations and felt their curricular requirements were being met. Future topics of safety, orthodontics and gardening/nutrition were identified.

**Conclusion:** This study indicates the service learning initiative has been beneficial for both the UM Dental Hygiene students and the HVBGC. Future studies should use a longitudinal design to obtain baseline and post-service learning data.

**Keywords:** Service learning, access to care, dental hygiene curriculum, Boys & Girls Club of America

This study supports the NDHRA priority area, **Health Promotion/Disease Prevention:** Validate and test assessment instruments/strategies/mechanisms that increase health promotion and disease prevention among diverse populations.

Research supports dental hygiene programs that include service learning experiences in their curriculum, as it provides various benefits to the students

as well as the communities they serve. Through service learning partnerships, community members are able to gain access to care they otherwise may not be able to receive.<sup>1</sup> Faculty involved reported a rise in students' confidence levels, producing students that are better prepared to work with diverse populations upon graduation.<sup>2</sup> The purpose of this study is to evaluate the partnership formed between the HVBGC and the UM Dental Hygiene Program, specifically the benefits the students receive and outcomes of the partnership as perceived by the HVBGC staff.

### **Boys & Girls Club of America**

Determined to lower the percentage of high school dropouts, teenage parents, teenagers involved with drugs and childhood obesity, the BGCA comprises a national network of 4,300 club facilities, making themselves available in communities where they are needed most, and available to an at-risk generation.<sup>3</sup> As an organization with goals and objectives, the parents find their children learning, being active and building friendships. Typical day-to-day attendance at the BGCA fluctuates. On average the HVBGC serves approximately 100 children per day, according to club director Frank Rigger (Rigger, personal communication, June 2009). Membership primarily comes from a lower socioeconomic status (SES) population in Ypsilanti, Michigan, and members are primarily of African American descent.

### **Demographics of Ypsilanti**

Survey information from the U.S. Census website indicates 13% of Ypsilanti families are below poverty level, which is 3.2% above the national average.<sup>4</sup> The percentage of Ypsilanti individuals below poverty level is almost double that of the national average – while Ypsilanti shows 24.8% of individuals are below poverty, the nation only shows 13.3%.<sup>4</sup> Being below the poverty level may limit the ability for families to seek dental care. As the income of a family decreases, the first expenses cut may be those considered luxuries, including preventive services, such as dental examinations and prophylaxis. Thus, money may be spent only for emergency services. Children of low-income families have a greater tendency to receive episodic or emergency dental care, which may create a fear or dislike of dental visits and treatment.<sup>5</sup> This habit of only going to the dentist when a problem arises may also make treatment more complex and costly.

### **Risks of African Americans and Low Socioeconomic Levels**

In the past, dental caries etiology primarily focused on factors within the oral cavity that cause

decay.<sup>5</sup> However, with an array of known risk factors not inclusive to those within the oral cavity, there is an increased understanding of various contributing factors, including SES status, which may affect an individual's caries rate. Primarily targeting those from minority and low SES families, nearly 80% of dental disease identified in children is found in less than 25% of the child population.<sup>6</sup> These minority and low SES children experience nearly 12 times as many restricted activity days (including being taken away from the classroom and after-school activities) from dental disease compared to children from higher SES families.<sup>6</sup>

A study performed by Tellez et al concluded factors within the neighborhood also have an effect on the caries rate of African-American children in low-SES areas.<sup>7</sup> Results indicated that as the number of grocery/convenience stores increased, so did the caries rate.<sup>7</sup> Energy-dense, highly refined and sugary food choices, such as soda, chips and candy, are common contributing factors to dental caries development.<sup>8,9</sup> Foods and drinks that are numerous in choices and easily accessible in grocery and convenience stores include those that may contribute to the development of caries. With the BGCA population being primarily unsupervised directly after school, it is fairly easy for members to purchase unhealthy food on their way to the HVBGC in the afternoon, increasing their intake of cariogenic foods.

### **Access to Care**

Dental provider availability in the Ypsilanti area consists of local dentists, several dental clinics and the UM School of Dentistry. There are a multitude of private practices, yet many do not accept Medicaid coverage and may not offer a reduced fee schedule. There are a minimal number of reduced fee or donation based clinics within the area.<sup>10</sup> These factors may limit the amount of treatment low SES residents are able to receive. What initially seems like a multitude of resources for this population scales down considerably once taking insurance issues and payment options into account.

### **Crest's Cavity-Free Zone Program**

With an increased risk for caries documented in children from lower SES families, Procter & Gamble® (Crest) developed an oral health promotion program, the Cavity-Free Zone program (Procter & Gamble®, Cincinnati, Ohio), for the BGCA to implement on an annual basis. The month long Cavity-Free Zone curriculum consists of 2 weekly 1 hour sessions. Oral health education lesson plans include: lessons directed at building self-esteem in one's smile, development of appropriate oral hygiene habits, education

with respect to anatomy of teeth and gums, development of a positive attitude towards dental professionals and dental visits and the development of nutritional awareness.<sup>10</sup>

Biesbrock et al implemented such a program at a BGCA facility. Following the Cavity-Free Zone program, the 75 club members in the study achieved a 51% reduction in their gingival index scores and a 29% reduction in their plaque index.<sup>11</sup> While this data was collected immediately following the final presentation of the Cavity-Free Zone program, the results nonetheless are astounding. There is, however, potential for these positive results to decrease over time if the children are not exposed to the oral health information on a regular basis.

Although the Cavity-Free Zone program was available for UM Dental Hygiene students to follow, its plan for delivery during a 1 month time frame did not address the issue of BGCA members' inconsistent attendance. This would mean that not all members would be exposed to the information and even those who are regularly present may not retain the knowledge and habits long-term. In order to sustain a program year-round, the HVBGC and UM Dental Hygiene students have formed a service learning partnership. While the members are being educated about good oral health habits and dental knowledge, students gain insight on underserved populations and have the opportunity to enhance their professional development.

### **Service Learning**

Service learning combines educational goals with service to the community, with the community and school being equal partners.<sup>12</sup> Service learning promotes skills associated with teamwork, community service, problem solving and deeper learning, while students address complex problems in real-world experiences.<sup>13</sup> Because of the skills associated with service learning, this method of learning is thought to be more personally meaningful to the student. It challenges their values and ideas while supporting social, cognitive and emotional learning development.<sup>13</sup> Through engaging in service learning opportunities, students are able to apply what they have learned in the classroom and clinical settings to a new environment. Not only does this provide the student with a unique learning opportunity, but the community gains benefits as well. Jiminez et al discuss the benefits to all who participate in the service learning programs – community members receive access to care while students are provided a rich learning environment.<sup>14</sup> With service learning programs being incorporated into higher educational programs throughout the country, schools are seeing students

become more familiar and comfortable in engaging in new and different settings as they graduate and begin their career. Schools have also noticed their students have an increased awareness of the need to help underserved populations and have committed their services to such communities in need.

Service learning can increase the depth of knowledge of dealing with an array of populations. Coulton found that by integrating service learning into dental and dental hygiene curricula, graduates are better prepared to provide care for diverse populations.<sup>1</sup> By providing the opportunity for students to explore other environments and reach out to different communities, their comfort zone increases in interacting effectively with those from varied backgrounds.

### **Students' Perceptions**

Service learning allows students to experience a wide array of clinical and non-clinical settings. By engaging in these experiences, students see first-hand the underserved populations, problems associated with access to care and the hardships low SES families face. Reising et al found students who participated in service learning benefited from personal and interpersonal development, increased social responsibility and improvements in academic learning.<sup>2</sup> The implementation of service learning has been thought to affect the student's perceptions of their professional responsibility as well. Hood found dental professionals may learn their social responsibility and aspects of professionalism through a well-structured service learning program, preparing them for their career post-graduation.<sup>12</sup> Wehling determined service learning helps to increase professional maturity and ingenuity that cannot be taught within the classroom.<sup>15</sup>

Aston-Brown et al studied the effects of service learning with dental hygiene students. Through the analysis of both qualitative and quantitative data, they witnessed the dental hygiene students' perceptions of service learning transform through their dental hygiene program.<sup>16</sup> Students graduated with an increased awareness of underserved populations, cultural diversity, ethical patient care and knowledge about public health career opportunities.<sup>16</sup>

Brunick conducted a study with the dental hygiene students at the University of South Dakota, which has embedded service-learning in their curriculum.<sup>17</sup> After reviewing and assessing the effects service learning has had on the dental hygiene students, Brunick found graduates to have higher self-esteem, awareness of underserved populations and a desire to be involved with underserved communities post-graduation.<sup>17</sup>

## Methods and Materials

This study assessed the students' perceptions of their professional involvement with the HVBGC and the outcomes of the partnership as perceived by the HVBGC staff. Quantitative and qualitative data were gathered through online Likert-scaled and open-ended question surveys which were developed and administered to 3 classes of dental hygiene students and 2 of the HVBGC full-time staff. The survey, along with other requested information regarding the study, was sent to the UM Institutional Review Board who granted the study exemption status.

Participants of this study consisted of UM Dental Hygiene classes of 2010 (27 students), 2011 (29 students) and 2012 (31 students), and 2 full-time staff members from the HVBGC. The students had varying amounts of experience working with the HVBGC, including an incoming class of dental hygiene students who may not have had any prior experience with the BGCA. The class of 2012 served as a baseline for those without dental hygiene educational experience with the HVBGC since those from the classes of 2010 and 2011 did not participate in a baseline survey prior to beginning the UM Dental Hygiene Program.

Using information gathered from the literature review, in addition to collaboration with UM Dental Hygiene faculty members whose courses provided student placement at the HVBGC, the 3 Likert-scaled surveys were developed.<sup>18-20</sup> Two student surveys were developed: 1 for the class of 2012, which contained 15 questions, and 1 for the classes of 2010 and 2011, which included 21 questions. Both student surveys specifically examined knowledge of the population served at the BGCA, access to care and the perceived benefits from the service-learning experience. A third survey comprised of 12 questions was given to the HVBGC staff members and examined the effectiveness of the service-learning program, determined if the BGCA curricular needs were being met and identified any gaps in the current oral health promotion program. The HVBGC employs 3 full-time staff members, a club director, an education coordinator and an athletic coordinator. The club director and education coordinator were asked to complete this survey.

Prior to dissemination, the surveys were pilot-tested with individuals who had a dental hygiene background, including 2 UM Dental Hygiene faculty members, 2 UM dental hygiene graduates from the class of 2009 who had experience with the HVBGC and 4 dental hygienists with no BGCA experience. Modifications to the surveys were made based on the pilot participants' feedback.

Recruitment of both the students and staff consisted of both in-person and online invitations. First, an in-person announcement was made to the 3 UM Dental Hygiene classes of students, and a phone call was made to the HVBGC director. During these initial contacts, the purpose of the survey was introduced and a request for participation was extended. That same day, an email was sent to students and HVBGC staff members with directions for accessing and completing the survey along with the Survey-Monkey link. A reminder email was sent five days later to the students and HVBGC staff. The survey remained open for a 10 day period. Students and staff participation was completely voluntary and anonymous.

## Results

### Previous BGCA Experience

The overall response rate for the class of 2012 survey was 77.4%. From the class of 2012 respondents, 95.2% (n=20) had never been a members or volunteer of a BGCA, while 1 (4.8%, n=1) indicated they had been a volunteer at a BGCA prior to attending the UM Dental Hygiene Program. The response rate for the classes of 2010 and 2011 survey was 85.7%. Of these respondents, 2.3% (n=1) had been a former BGCA member, 14% (n=6) had volunteered at a BGCA prior to their UM Dental Hygiene education and 83.7% (n=36) had never been a member or volunteer.

Surveys distributed to both the class of 2012 and the classes of 2010 and 2011 were divided into 3 additional sections: access to care, BGCA knowledge and service opportunities at the HVBGC. For the class of 2012, the access to care questions were formatted to allow insight about the student's perceptions of people who lacked ability to obtain dental care in the U.S., and the BGCA questions enabled the authors to determine if the students were knowledgeable about this population prior to their UM Dental Hygiene service learning experience. The service opportunity questions sought to determine what benefits the students felt they would gain from the service-learning experience they would soon encounter. For the classes of 2010 and 2011, a descriptive analysis of the survey responses was used to determine if the service-learning experience at the HVBGC had in fact deepened student knowledge of the club and its population, and if the perceived benefits were gained from their HVBGC service learning experience. These students were also asked additional questions related to future BGCA involvement and lessons learned.

Table I: Professional Benefits Derived from Service Opportunities at HVBGC, Class of 2012

Survey Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Will improve my interpersonal skills (communication, presentation, interaction)	45%	50%	0%	0%	5%
Will develop a greater awareness of oral health needs of BGCA members	40%	50%	10%	0%	0%
Will develop skills to address oral health needs of this community group	40%	55%	0%	5%	0%
Expect to learn about the role of the dental hygienist in public health settings	45%	50%	5%	0%	0%
Will develop skills to present oral health information to a community group	45%	50%	0%	0%	5%
Will help develop confidence in working with this community group	38.1%	47.6%	14.3%	0%	0%

### Access to Care and BGCA Knowledge

Of the class of 2012 respondents, 95.2% believed access to oral health care is a problem facing the nation. Ninety-five percent also agreed service to the community is a professional responsibility of the dental hygienist. Only 4.8% disagreed with these statements, while 3 participants skipped these questions. When asked what they perceived were contributing factors to the access to care problem, a majority (90.5%) responded insurance issues, either a lack of insurance or lack of insurance acceptance by providers. Other contributors addressed in the survey included a lack of financial resources (81% agreeing), the oral health knowledge of individuals (76.2% agreeing), the parent or guardian's perception of importance (71.4% agreeing), the availability of a dental professional in the area (57.1% agreeing) and transportation (42.9% agreeing). Inquiring about their BGCA related knowledge, 42.8% agreed the clubs are located in lower SES areas, and 67% agreed the club's focus is to support at-risk children and adolescents in succeeding in school and developing healthy life habits.

The classes of 2010 and 2011 respondents had a better understanding of the BGCA in comparison to the class of 2012 respondents, with 88.9% agreeing the clubs are located in lower SES areas and 90.5% agreeing about the club's focus. With regard to access to oral health care, 100% believed this was a problem facing our nation and 95.3% agreed service to the community was a professional responsibility of the dental hygienist. Figure 1 identifies factors related to access to care, including financial resources (100% of the classes of 2010 and 2011 agreeing), insurance issues (95.3% agreeing), oral health knowledge and transporta-

tion (90.7% agreeing), parent's or guardian's perception of importance (79.1% agreeing) and availability of a dental professional in the area (74.4% agreeing). Figure 1 also compares the access to care responses from the classes of 2010 and 2011 respondents with the class of 2012 respondents.

### Perceived HVBGC Service-Learning Benefits

The survey results indicated the students from the class of 2012 felt a service learning experience at the HVBGC would provide professional benefits. Ninety-five percent felt this opportunity would improve and further develop their interpersonal skills (which included presentation, communication and interaction skills), awareness of oral health needs of the club members, skills to address oral health needs of this community group and skills to present oral health information to a community group. Eighty-six percent felt this future experience would help develop their confidence in working with this community group. Ninety percent felt their partnership with the HVBGC would benefit the club members (Table I).

The students from the classes of 2010 and 2011 were asked questions that evaluated the benefits they felt they gained from participating in an oral health promotion program at the HVBGC. The survey showed that 55.9% felt their experience at the HVBGC had helped to develop their interpersonal skills. Sixty-seven percent gained confidence in working with this community group, and 64.3% felt they developed skills to present oral health information to a community group. Sixty-one percent felt they had developed a greater awareness of the oral health needs of the club members, and 65.2% felt they developed skills to address the

Table II: Benefits Gained from Participation in Service Opportunities at HVBGC, Classes of 2010 & 2011

Survey Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Applicable
Improve interpersonal skills (communication, presentation, interaction...)	23.3%	32.6%	16.3%	2.3%	0%	25.6%
Greater awareness of oral health needs of BGCA members	18.6%	41.9%	9.3%	4.7%	0%	25.6%
Developed skills to address oral health needs of this community group	4.7%	60.5%	4.7%	4.7%	0%	25.6%
Became aware of the role of the dental hygienist in public health settings	14.3%	50%	9.5%	0%	0%	26.2%
Developed skills to present oral health information to a community group	21.4%	42.9%	7.1%	2.4%	0%	26.2%
Developed confidence in working with this community group	33.3%	33.3%	9.5%	2.4%	0%	21.4%

oral health needs of this community group. This service-learning experience also allowed 64.3% to feel they had become more aware of the role of the dental hygienist in public health settings. Overall, 67.5% felt their partnership with the HVBGC had benefited the club members, and 78.6% felt the year-round involvement the UM Dental Hygiene Program offers has made a positive impact on the club members (Table II).

### Classes of 2010 and 2011: Future BGCA Involvement and Lessons Learned

The survey distributed to the classes of 2010 and 2011 also included 2 open-ended questions in which several key themes emerged. When asked if the students would volunteer or work on an oral health project at the HVBGC in the future, 76.7% responded they would. Those that agreed indicated they would likely do so because it provides benefits to the members, they feel service to the community is a part of the dental hygiene profession, it benefits the community and they enjoy volunteer work. Those who did not think they would volunteer in the future thought so because they didn't like the HVBGC, they would like to volunteer elsewhere, they will be relocating, they felt the presentation information was too repetitive and the members were uninterested. Specific student responses can be found in Table III.

The second open-ended question inquired about the most significant lesson learned from their experience at the HVBGC. Of the responses, 3 common themes emerged: 15% indicated the experience helped them understand teaching methods, specifically strategies to keep children engaged and interested, and 25% identified they were encouraged that many of the children retained knowledge

from previous presentations. Some listed specific topics the children recalled, such as how to properly brush, while others indicated concepts were not retained, including why it is important to brush. Another significant finding addressed by 15.6% of the respondents was that not all people have the same privileges as them and the importance that those more fortunate should offer their services and knowledge in assisting and educating those less fortunate. Detailed student responses can be found in Table IV.

The UM Dental Hygiene Program is considering spearheading the development of a garden initiative at the HVBGC. This garden would not only provide healthy snacks to the club members, who often come to the club hungry and rely on food provided at the HVBGC, but could also teach the members life-long lessons on how to plant and sustain their own food sources. This question was included in the survey to obtain the students' perceptions of the benefits of such an initiative and to determine their interest in implementing this initiative at the HVBGC. Survey results showed 83.8% felt a garden would benefit the HVBGC by providing food to their members as well as work to support the Cavity-Free Zone curricula of the BGCA.

### Staff Survey

The answers from the HVBGC staff survey focused on determining whether or not the oral health curriculum requirements of the HVBGC have been met, and if there were any gaps in the current initiative that should be addressed in future presentations. The results of the HVBGC staff survey showed that full-time staff members were pleased with the outcomes the UM Dental Hygiene student presentations have provided their club mem-

Table III: Students' Likelihood of Future Involvement with the HVBGC

Students' Likelihood of Future Involvement with the HVBGC	Total Postings n=36
Will likely volunteer in future...	
Because they enjoy volunteer work <ul style="list-style-type: none"> <li>• "I enjoy volunteering and would like to do as much as I can to help."</li> <li>• "I enjoy community service activities in general..."</li> </ul>	5.5%
Because of the benefits to the children <ul style="list-style-type: none"> <li>• "I feel all children deserve the right to care. The children should not have to suffer due to lack of care. I think the HVBGC involvement is a great way to help teach children about the importance of oral health."</li> <li>• "I want to help educate the children in the Boys &amp; Girls Club."</li> <li>• "I will because it is benefiting the community and children!"</li> <li>• "...it was obvious some of the children are only exposed to this type of education there and need as much info and encouragement as possible!"</li> <li>• "I really enjoyed working with the kids and being able to provide education for them."</li> <li>• "I would volunteer in the future because I feel that the children that attend the club benefit from our presentations."</li> </ul>	36.1%
Because it is important as a dental hygiene professional <ul style="list-style-type: none"> <li>• "It was a good learning experience, and gave me insight to better explain our role as a hygienist in the community."</li> <li>• "...it is my duty as a future dental hygienist."</li> <li>• "I think working with the children is a great benefit not only for the children learning but for us future hygienists as teachers."</li> <li>• "I feel it is part of my profession to do volunteer work for people at the Boys &amp; Girls Club."</li> </ul>	16.7%
Because of the benefits to the community <ul style="list-style-type: none"> <li>• "I believe that I, as well as other dental professionals, can make a difference by reaching out to the community and stressing the importance of oral hygiene"</li> <li>• "I will because it is benefiting the community and children!"</li> <li>• "Great opportunity to lend a hand to the community"</li> <li>• "Beneficial to the members and gives the hygienist greater involvement with the community."</li> </ul>	13.9%
Will not likely volunteer in the future...	
Because they did not like the HVBGC <ul style="list-style-type: none"> <li>• "It was unorganized and staff seemed to lack control of the children."</li> <li>• "The Boys and Girls Club is not my niche."</li> </ul>	8.3%
Because they would like to volunteer at other places <ul style="list-style-type: none"> <li>• "I will not because in my opinion the first thing people think about when they think about an uninformed or needy population is children. Mostly because children usually have an organized group i.e. BGCA or a school instructor or any other camp of that nature that reach out and ask for help. I feel that I would prefer to work with adults and volunteer my time with the less thought about population."</li> <li>• "I want to see if I can volunteer at other places as well."</li> </ul>	8.3%
Because they will be relocating soon <ul style="list-style-type: none"> <li>• "I may no longer be in this area to help."</li> <li>• "I already worked there and when I graduate I will most likely move back home."</li> </ul>	8.3%
Because they felt the presentations and year-round involvement at the HVBGC was too repetitive <ul style="list-style-type: none"> <li>• "I would be apprehensive about doing so because of the boredom displayed toward the oral health and health eating habits from the members who have heard it repeatedly from the UM Dental Hygiene presentations."</li> </ul>	5.5%

bers. Both staff members strongly agreed the oral health presentations have fulfilled Crest's Cavity-Free Zone requirements. Both strongly agreed the year-round involvement has increased the members' oral health knowledge, as well as allowed for more members to be exposed to the information.

Table IV: Students' Perceptions of Significant Lessons Learned from HVBGC (n=32)

What was the most significant thing you learned during your HVBGC experience and why?	
<p>Effective methods for teaching children</p> <ul style="list-style-type: none"> <li>• "I learned a lot about how kids learn best, and that they love to learn."</li> <li>• "That the children who attend this club need to have hands on learning activities to keep their attentions and engage them to want to sit and learn more. Once we gained the interest of the children they were really cooperative and asked many great questions regarding healthy snacks, and healthy oral habits."</li> <li>• "The thing that these kids need most is love and attention (that it seems some don't get at home). And the learning comes after they become comfortable with us."</li> <li>• "It is difficult to go in there just to "TEACH" the kids. You must first build a relationship with them, before they will really listen to the material you are presenting. Once the relationship is established, the children are sponges to learn the material that is being presented to them."</li> </ul>	15.6%
<p>Many of the children retained information from previous presentations and were more knowledgeable than the students thought they would be</p> <ul style="list-style-type: none"> <li>• "The children at the Boys and Girls club absolutely LOVE when students come to interact with them. They had fun, and we found that they remembered a lot of what we taught them. Seeing their smiling faces and hearing them ask when we were going to come back made me feel like I was really impacting their lives."</li> <li>• "I was surprised when I went to do my oral presentation at the HVBGC of how much information that the kids retained and remembered from the previous year of presentations."</li> </ul>	25%
<p>Not everyone has the same privileges; those more fortunate should offer service and knowledge</p> <ul style="list-style-type: none"> <li>• "Underprivileged child are not as aware of oral health as other children may be. Everyone regardless of social status should understand oral health and why it is so important for overall health, kids and parents both need to understand this concept."</li> <li>• "Not everyone has the same opportunities no matter what we think. It is our responsibility to help lower SES individuals whenever we can to make sure that everyone has the same access to knowledge of oral health care needs."</li> </ul>	15.6%

They also strongly agreed the students have accurately planned age and culturally appropriate lessons. Other than the dental hygiene student's presentations, the staff noted the club members are seldom exposed to any oral health education or activities while at the HVBGC. When inquiring about topics the staff felt should be covered in the future, orthodontic information and safety issues were suggested. Overall, both staff members felt the nutrition and oral health presentations have met and exceeded the curriculum requirements.

## Discussion

The ability to gather a baseline and a post-service learning experience survey from the same sample of students was not feasible. Therefore, the incoming class of 2012 UM Dental Hygiene students' responses provided pre-HVBGC service-learning baseline information. This gathered student insight as to what those with no experience at the HVBGC expected to gain from the service learning initiative, as well as their knowledge about access to care and the BGCA. The responses from the 2010 and 2011 classes provided post-HVBGC service learning information. Answers provided by these respondents reflected their actual experience at the HVBGC, demonstrat-

ing their knowledge gained regarding access to care and the BGCA. They also gathered opinions about what students felt they had gained professionally from this service-learning experience. The strength of the study would have been enhanced if the UM Dental Hygiene classes of 2010 and 2011 were each able to participate in a pre-HVBGC service-learning survey followed by a post-HVBGC service learning survey. The study would be further strengthened if it were continued longitudinally with data gathered from additional students and staff.

When evaluating the students' BGCA knowledge, the classes of 2010 and 2011, who had experience developing and implementing an oral health promotion program at the HVBGC, understood the mission and demographic parameters of the BGCA to a higher degree than the class of 2012, who had not had any UM Dental Hygiene Program experience at the HVBGC. A larger percentage of the respondents from the classes of 2010 and 2011 also had a better understanding of the access to care problem facing our nation and factors affecting this issue. The increased understanding of the BGCA and access to care demonstrated by the classes of 2010 and 2011 may have been higher due to their involvement at the HVBGC. However, other educational experienc-

es and knowledge obtained through UM Dental Hygiene curricula may have also affected the students' responses to these survey questions.

Comparing the results of the questions pertaining to the students' perceived benefits from the service learning experience, the class of 2012 had higher expectations of what they thought they would gain professionally from this experience compared to what the classes of 2010 and 2011 felt they had gained from their experience at the site. One factor influencing this data is only 15 students from the class of 2012 had on-site HVBGC experience, while the remaining 12 students had not participated in service learning at this site. Although a lesser percentage of 2010 and 2011 respondents (31% average) agreed about the perceived benefits than the class of 2012, 21% of these class members did not have HVBGC service-learning experience. This percentage of respondents from the classes of 2010 and 2011 could account for those who responded "not applicable" to the questions inquiring about the benefits gained from the HVBGC service-learning experience. Recommended areas of further study include the investigation of dental hygiene service learning-related curriculum and its impact on student community understanding. Also important would be post-graduation follow-up to determine if these experiences contribute to community volunteer involvement as licensed professionals.

The HVBGC staff survey indicated they are pleased with the year-round involvement the UM Dental Hygiene Program is able to provide, especially with the fluctuation they see with the club member's attendance. Incorporation of additional oral health related topics will benefit both students and club members, allowing the benefit of regular interaction with the members and delivery of oral health information to continue. Expanding topics covered would also address the student concern that content covered was too repetitive.

## Conclusion

This study has shown the service learning partnership between the HVBGC and the UM Dental Hygiene Program has provided benefits to both the students and the club. In addition to understanding the issues surrounding the access to oral health care crisis, the students were able to develop and refine oral health promotion skills to address the needs of this population. The HVBGC staff indicated the content presented in their oral health educational sessions addressed the requirements of the BGCA Cavity-Free Zone curriculum. The UM Dental Hygiene Program has gained insight into additional topics that could be addressed in the future. The staff and student's agreed the year-round involvement has increased the HVBGC member's oral health knowledge.

Future studies should consider incorporating a longitudinal design method for examination, allowing for pre-HVBGC service-learning information and post-HVBGC service-learning information to be gathered from each class. Continuing to examine the outcomes of this partnership will be important to determine if this service-learning initiative sustains in providing a positive outcome for both HVBGC members and UM Dental Hygiene students.

*Sarah Christensen Brydges, RDH, BSDH, is a graduate from the University of Michigan Dental Hygiene Degree Completion Program. Anne E. Gwozdek, RDH, BA, MA, is Director of the Dental Hygiene Degree Completion Programs, Department of Periodontics and Oral Medicine at the University of Michigan School of Dentistry, Ann Arbor, MI.*

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