Effect of the COVID Pandemic on an Outreach Mentoring Program for Hispanic Youth

OAKLAND UNIVERSITY WILLIAM BEAUMONT

Nathan Shin[1], Caroline Desler[1], Alba Carlos-Banda[2], and Claudio Cortes D.V.M., Ph.D.[3]

[1]M.D. Student, Oakland University William Beaumont School of Medicine, [2]Catholic Charities of Southeast Michigan-La Casa Amiga, Pontiac, MI,
[3]Oakland University William Beaumont School of Medicine, Department of Foundational Medical Studies, Rochester, MI.

Introduction

- The Hispanic Newcomer Outreach (HNO) program is a mentoring program between OUWB School of Medicine and Catholic Charities of Southeast Michigan - La Casa Amiga (CCSM-LCA). Created in 2016, the program aims to enact change by connecting medical student mentors with local Hispanic youth. Mentors and mentees participate in educational activities about health-related topics, from anatomy and nutrition to health disparities and higher education.
- Due to the pandemic, in-person sessions were modified for a virtual classroom setting on Zoom. Given the obstacles presented by online learning[1], the program focused on essential at-home activities and lessons to maintain health and wellness.
- Culturally competent, patient-centered care is needed in our health systems[2]. Medical students can kickstart this growth through greater engagement with the local community to reduce educational and health disparities.

Program Goals

- Transition an in-person mentoring program to a virtual setting while maintaining mentor-mentee connections and positive learning outcomes.
- Prepare children for higher learning topics at earlier stages to combat socioeconomic disparities, and promote both physical and mental wellness.
- Emphasize necessary precautions during the pandemic to students who may have not yet learned about the importance of vaccines and other public health initiatives.
- Develop and strengthen cultural competency and humility among medical students while collaborating with local community service leaders.
- Advocate collaboration using creative team-building exercises and age-appropriate group activities.

Objectives

- To determine the effect of virtual learning on pre- and post-session quiz performance.
- To compare self-rated mentor proficiency before and after program participation.
- To analyze changes in behavioral and emotional intelligence of mentees from pre-COVID to during COVID.

Methods

- The program was evaluated through survey data from youth participants ranging in age from 8-17 years old, their parents, and medical student mentors (approved IRB 1192710-1).
- Medical student surveys included questions related to program satisfaction and communications skills with children.
- Evaluation consisted of formative assessments to determine effectiveness of learning through health educational activities.
- Parts of the Behavioral and Emotional Rating Scale-2 (BERS-2) were used to measure behavioral and social skills.

Organization of Virtual Mentoring Program

Figure 1. Logistical framework of online program. The sequence of events for overall program delivery and the general format of the educational sessions are outlined. The program runs February-November with a summer break, though mentor-mentee pairings continue their weekly phone calls throughout the summer.

Program Outcomes

Table 1: Mentoring Program Overview							*Pre-COVID*	*COVID*
Program Year	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2016-19*	*2020-21*
Number of sessions	8	16	12	15	15	13	51	28
Part of LMSA chapter	No	Yes	Yes	Yes	Yes	Yes		
Number of student coordinators	1	4	2	2	2	2	9	4
Number of professors involved	1	5	2	2	2	1	10	3
Number of medical student mentors	12	18	25	32	33	20	87	53
Number of mentees	11	19	25	32	33	20	87	53
Number of educational topics	5	13	8	11	15	13	37	28
Number of field trips	3	3	4	4	0	0	14	0
Community service hours	471	1,090	1,076	1,800	1,545	1,175	4,437	2,720
Program manual created	No	No	No	Yes	Yes	Yes		
Average service hours per mentor	36.23	49.55	39.85	52.94	44.14	53.41	44.64	48.78

Table 1. Mentoring program overview: 2016-2021. Grey columns indicate years in which the program was conducted virtually.

Table 2: Mentor Survey						
Program Year	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*
Mentoring experience *Q1: Students with mentoring experience* *Q2: Students who previously mentored Hispanic children*	75% 21%	61% 17%	83% 26%	92% 25%	68% 36%	42% 5%
Number of mentors responding to survey	24	18	23	12	28	19
	Average (standard deviation)					
Satisfaction with mentoring program (1 = strongly dissatisfied, 6 = strongly satisfied) *Q3: Overall, how satisfied are you with the mentorship program?* *Q4: Overall, how satisfied are you with the educational activities?*	5.30 (0.59)	4.92 (0.77)	5.17 (0.68)	5.20 (0.72)	5.22 (0.90)	5.39 (0.75)
Self-rated proficiency (1 = none, 5 = expert)** *Q5: How would you describe your proficiency as a mentor BEFORE you completed HNO?* *Q6: How would you describe your proficiency as a mentor AFTER you completed HNO?*	2.71 (0.46) 3.50 (0.51)	2.67 (0.49) 3.44 (0.51)	3.04 (0.82) 3.65 (0.49)	3.00 (0.42) 3.83 (0.57)	N/A	2.84 (0.9) 3.90 (0.78)
Communication (1 = strongly disagree, 6 = strongly agree) *Q7: After this experience, I feel more comfortable interacting with children in general.* *Q8: After this experience, I have learned to better communicate with children.*	5.25 (0.72)	4.83 (0.56)	5.02 (0.49)	4.63 (0.58)*	4.29 (0.82)*	4.50 (0.56)*
Understanding the needs of children (1 = strongly disagree, 6 = strongly agree) *Q9: After this experience I better understand the needs of children in general.*	4.83 (0.71)	4.83 (0.71)	4.87 (0.63)	4.43 (0.51)*	4.07 (0.72)*	4.11 (0.66)*
Recommendations to other students (1 = strongly would not recommend, 6 = strongly recommend) *Q10: Would you recommend the OUWB-HNO mentoring program to other medical students?*	5.54 (0.51)	5.39 (0.70)	5.61 (0.72)	5.58 (1.16)	5.61 (0.74)	5.79 (0.42)
Impact on future career (1 = strongly disagree, 6 = strongly agree) *Q11: Being a mentor as medical student will help me as a future physician.*	5.75 (0.44)	5.11 (0.90)	5.48 (0.90)	4.33 (0.88)*	4.52 (0.75)* (N=27)	4.71 (0.47)* (N=17)
Health-related learning (1 = strongly disagree, 6 = strongly agree) *Q12: I have learned about health-related topics during the mentoring program.*	N/A	4.89 (0.58) (N=18)	4.61 (0.89) (N=23)	3.92 (0.79)*	4.25 (0.65)*	4.44 (0.70)* (N=18)

Note: Data for each area of study was pooled. Averages and standard deviations were calculated.
** A Likert-style scale was given to mentors to rate program attributes from 1 to 5.*
*** Denotes statistically significant results in self-rated mentor proficiency before and after program participation.* *N/A: Data not available*

Table 2. Mentor survey results: 2016-2021. A Likert scale was used to survey medical students who served as mentors in the HNO program. Previous mentoring experience, self-rated proficiency, program satisfaction, and communication skills with children were among the variables assessed. Averages and standard deviations are listed, while grey columns indicate years in which the program was conducted virtually.

Evaluation of Educational Sessions

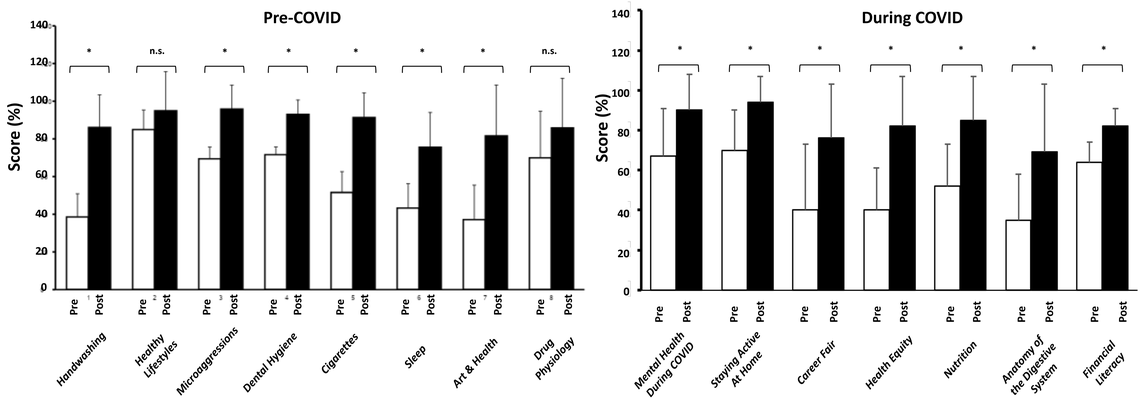

Figure 2. Effectiveness of educational activities pre- COVID and during COVID. Results from eight in-person sessions from the 2017 program, and seven virtual sessions from the 2021 program, were analyzed. The virtual program consisted of a total of 13 virtual, health-related sessions, seven of which were studied using pre- and post-test scores. Paired t-tests were utilized to compare the means on both the pre- and post-test results. *Shows significant difference with a p-value <0.05. n.s. = not significant.

BERS-2 Mentee & Parent Survey Results

		Interpersonal Strength 15 questions (STD)	Family Involvement 10 questions (STD)	Intrapersonal Strength 11 questions (STD)	School Functioning 9 questions (STD)	Affective Strength 7 questions (STD)
Pre-COVID	Mean pre-survey (SD) N=81	2.11 (0.60)	2.25 (0.56)	2.36 (0.31)	2.25 (0.67)	2.22 (0.54)
	Mean post-survey (SD) N=81	2.41 (0.48)	2.50 (0.45)	2.49 (0.47)	2.52 (0.51)	2.44 (0.45)
	P-value	0.0001*	0.0001*	0.0101*	0.0001*	0.0001*
COVID	Mean pre-survey (SD) N=31	2.27 (0.55)	2.44 (0.47)	2.49 (0.40)	2.51 (0.49)	2.32 (0.54)
	Mean post-survey (SD) N=31	2.18 (0.50)	2.41 (0.39)	2.41 (0.42)	2.34 (0.61)	2.23 (0.49)
	P-value	0.332	0.791	0.358	0.176	0.319
	P-value pre-survey: pre-COVID vs. COVID	0.174	0.110	0.066	0.053	0.356
	P-value post-survey: pre-COVID vs. COVID	0.032*	0.332	0.380	0.128	0.038*

Table 3. Partial Behavioral and Emotional Rating Scale-2 (BERS-2) evaluation pre-COVID and during COVID. During the mentoring program, parents completed a BERS-2 questionnaire consisting of 52 questions about their child's improvements in five categories (interpersonal strength, family involvement, intrapersonal strength, school functioning, and affective strength). The mean difference between pre- and post-surveys of Likert scale (0 = statement is not at all like the student; 3 = statement is very much like the student) were analyzed using a paired student's t-test. In the bottom portion of the table (displayed in blue), unpaired t-tests were used to determine the differences between the mean of pre-COVID and COVID results. *Indicates a p-value <0.05.

Discussion

We have transitioned an established partnership between OUWB-LMSA and CCSM-LCA to a virtual setting (Figure 1). Although the pandemic has posed significant challenges for both mentors and mentees, the HNO Mentoring Program has remained successful in its efforts to strengthen the connection between medical students and the local community.

Mentors feel highly satisfied with the program and more capable of positively influencing and developing stronger communication with their mentees (Table 2). According to the mentor surveys, there was a consistent increase in self-rated mentor proficiency throughout the pre-COVID and COVID years. Although field trips and in-person sessions were omitted to comply with health regulations, mentor participation and involvement reached its peak in 2021 with an average of 53.41 service hours per mentor (Table 1). The average service hours per mentor during COVID years was slightly higher than those of pre-COVID years, which was understandably attributed to facilitated communication via methods such as phone calls and Zoom meetings.

While pre-COVID educational sessions displayed a significant improvement from pre-test scores to post-test scores in 6 out of 8 activities, educational sessions during COVID demonstrated a significant improvement in all 7 activities. Learning outcomes do not appear to be impacted whether sessions are in-person or online (Figure 2).

According to the BERS-2 data (Table 3), children showed increased improvement in all five behavioral and emotional categories prior to COVID, but not during COVID. Moreover, student interpersonal and affective strength were significantly greater before COVID than during COVID. The lack of improvement during COVID could be due to intrinsic challenges children have faced during the pandemic. Lack of socialization with peers, reduced time spent outdoors, and social isolation may have affected the mental well-being of children[3]. This suggests that a traditional learning environment is required to positively influence behavioral changes as seen in the pre-COVID era.

This program can continue to serve as a model for developing educational and enjoyable sessions that can create a lasting impact on students both in-person and online.

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