# A feasibility study to evaluate the implementation of a virtual community health worker training among high school students participating in a summer STEM enrichment program



## Archana Bhavani Vasanth Kumar

Department of Epidemiology and Public Health, University of Maryland School of Medicine

## **INTRODUCTION:**

- A community health worker (CHW) is a member of the community whom one intends to serve.¹
- CHWs are paid workers or volunteers working in liaison with the local health care system by providing education, outreach and, resources to community members to promote access to healthcare.<sup>2</sup>
- Morehouse School of Medicine (MSM) developed a virtual CHW training program curriculum for high school students and young adults.<sup>3,4</sup>
- The MSM CHW summer training program consists of shadowing experience and self-guided and interactive sessions performed virtually.<sup>3</sup>
- The University of Maryland Baltimore (UMB) Continuing Umbrella of Research Experiences (CURE) program has been training the CURE scholars to become Community Health Workers (CHW) by introducing the MSM CHW training program in the summer STEM enrichment program of 2020.
- The CURE Connections (C2) summer STEM enrichment program is a 6 weeklong program.
- Modified version with more hands-on activities (Figures 1 and 2.) was implemented in 2021.
- Hands-on activities are fun and effectual ways to learn,<sup>5</sup> propagating learning by doing.
- Hands-on sessions transform passive learners into active participants.<sup>6</sup>
- The purpose of this study is to evaluate and compare scholar experiences with the virtual MSM CHW training program between the scholars of the 2020 and 2021 batch after implementing more hands-on sessions.

## **METHODS:**

## MSM CHW Curriculum

- The scholars from 2020 (Year 1) were required to complete all the 18 modules from the MSM CHW curriculum on the Canvas app.
- The 2021 (Year 2) summer program required scholars to complete 12 modules.

## **Participants**

- Convenience and quota sampling procedures employed.
- Interview participants consisted of scholars from both Year 1 and 2.
- IRB consent was obtained.
- Four scholars belonged to Year 1 and two scholars to Year 2.

### Interview

- One-on-one semi-structured interview for 15-20 minutes.
- Open-ended and closed-ended questions.
- The interview questions addressed the scholars' experience and feedback pertaining to the overall summer program, Morehouse modules, and recommendations to improve the program for future scholars.
- Interview recording deleted after transcription.
- Open coding was done, followed by more focused coding that merged all the open codes.
- Thematic analysis done, and themes were developed from the generated codes.



Figure 1. Hands-on Kits provided for 2021 summer program

# Hydraulic Robotic Arm Hydraulic Robotic Arm CHEMISTRY OF FROM EXPERIMENT KIT Lung Volume Bag Kit LNGKIT Gty. 1 Kit Baten No. 03 023 Lung volume kit Sugar metabolism kit

Figure 2. Hands-on Kits provided for 2021 summer program

**THEMES** 

Overall summer program experience

Positive Feedback

Negative Feedback

**About the Morehouse curriculum** 

Complexity of assignments

Length of modules

**Advice for Future Scholars** 

**In-Person Vs Virtual Program** 

**Recommendations for the Program** 

# HANDS~ON MORE~TIME FUNDINGER LEARNED C U U EXPERIENCE

Figure 3. Common codes that emerged from the interview

## **EXAMPLE QUOTES**

Umm it was really good... it was a good learning experience. I had a lot of fun.

The thing I like most is when we did like the physical labs..... And also, we did the virtual escape rooms

...like one thing I didn't like about the virtual experience was it was really hard to communicate. Like you had to find a quiet place in your room

irtual

I didn't like doing the prezis because I found them hard. I didn't like finish some of them and I had to finish them in the summer. I had to get help on them cos I didn't like really understand how to do it. So, I thought that part was hard for me.

watching the videos took a lot of the time and just like analyzing the whole video

Umm don't necessarily give up just yeah...
just ask your teachers for help. Teachers and
mentors are there to help you and you can
use that extra help

So, some directions on the modules were confusing... I think it might be better to get a real-life example from another student in-person

directly told what to do

I'm not good at like focusing and stuff so like more hands-on stuff like being

to have more interactive things as a group..... If people would communicate on their progress more

when you're sitting at home you can get distracted easily and just

like walk away from the computer and just not come back..... If

you're slacking off (in-person), they can tell you to focus

...it was made up of different things of science like engineering, chemistry, anatomy. So, that was very interesting.

I like the fact that....we would just work on our own....., and if we needed help, we could ask for help.

What I didn't like, like I said was, us being on a computer, and not in-person

.... read some articles, and then make a voice

recording so I believe that's like really the only

times when it took a long time to like complete

some of the modules

like that took longer than like, expected

.afterwards it was almost like homework, so

not to let the modules to build up and if you can just

only suggestion that I have is to kind of be proactive

like knock a couple out a day..... So that's really the

# 5. Recommendations for the Program.

**RESULTS:** 

completed.

• 52 participants overall (2020 and 2021), 32 males and 20 females.

• 6 scholars consented and participated in the qualitative interview.

• The time spent on the Canvas app did not correspond to the number of assignments

• From the common codes (Figure 3.), evolved 5 overarching themes (Figure 4.).

• The mean age of the participating scholars was 15 years.

1. Overall summer program experience.

Mostly positive scholar feedback.

2. About the Morehouse Curriculum.

3. Advice for Future Scholars.

Seek mentor and peer support.

Assignment length – Some were longer.

Learned new things.

• The average time spent on the canvas app was 33.37 hours.

Submission format – Prezi and VoiceThread were complex.

Communication and being proactive are the key to success.

■ The CURE summer program switched to virtual for 2020 and 2021.

MSM CHW training program is a virtual curriculum completed through in-

4. In-Person Vs Virtual Summer CURE Program.

person or virtual UMB CURE summer program.

Universal preference for in-person program

- All the scholars from the 2020 recommended to have more hands-on activities and interactive sessions.
- CURE program introduced more hands-on activities for the 2021 summer program.
- The 2021 scholars recommended finding a way to make the hands-on more interactive and progress update of co-scholars.

# **CONCLUSION:**

- 1. Scholars prefer to work on the virtual MSM CHW curriculum in an interactive and in-person environment.
- 2. The Morehouse modules for the CHW training program can be used as a tool by completing the online assignments after an interactive, hands-on session with peers and mentors.
- Year 1 scholars preferred to have more hands-on activities, and Year 2 scholars welcomed the increased hands-on activities offered to them.
- The CURE summer program should be modified to include more interactive sessions and hands-on activities that can be performed in-person, provided the then pandemic regulations permit. Scholar feedback through surveys or interviews should be collected to assess if the modifications were beneficial.

### References:

- Center for Chronic Disease Prevention N, Promotion H, of Community Health D. Collaborating with Community Health Workers to Enhance the Coordination of Care and Advance Health Equity Using Community Health Workers to Enhance the Coordination of Care and Advance Health Equity. Published online 2014.
   Role of Community Health Workers, NHLBI, NIH. Published 2014. Accessed September 1, 2021. https://www.nhlbi.nih.gov/health/educational/healthdisp/role-
- of-community-health-workers.htm

  3. Williams-Livingston AD, Ervin CE, McCray GG, Author C, Livingston AW. Practice Notes Bridge Builders to Health Equity: The High School Community
- 3. Williams-Livingston AD, Ervin CE, McCray GG, Author C, Livingston AW. Practice Notes Bridge Builders to Health Equity: The High School Communit Health Worker Training Program. Published online 2020.
- Health Worker Training Program for High School Students & Young Adults | Morehouse School of Medicine. Published 2021. Accessed September 7, 2021.

  Roden WH, Howsmon RA, Carter RA, Ruffo M, Jones AL. Improving Access to Hands-On STEM Education using a Mobile Laboratory. J STEM Outreach.
- 2018;1(1):3681. doi:10.15695/JSO.V1I2.4550S.

  Sivan A, Wong Leung R, Woon CC, Kember D. An implementation of active learning and its effect on the quality of student learning. Innov Educ Teach Int.

Figure 4. Themes and sub-themes with example quotes