Interprofessional Simulation to Prepare Students to Address Medical Misinformation and Vaccine Hesitancy

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Major Findings

- A three-part, hybrid, interprofessional simulation educational program resulted in improvements in:
  - Students' self-efficacy in communicating effectively with individuals who were vaccine hesitant based on medical misinformation.
  - Knowledge and recognition of medical misinformation and vaccine hesitancy.
  - Attitudes toward interprofessional collaboration.
- Students felt this program was impactful and provided them with translatable skills to their clinical experience.

Background

- Medical misinformation, which contributes to vaccine hesitancy, is widespread and promulgated by the internet and social media.
- The healthcare community is well positioned to address misinformation and to advocate for vaccination.
- Health professions students may be lacking the knowledge and/or confidence to communicate with vaccine-hesitant individuals whose position is based on misinformation.
- We sought to develop, implement, and assess an interprofessional educational program aimed at preparing health professions students to address medical misinformation and vaccine hesitancy.

Methods

Time →

Knowledge Assessment #1 → Asynchronous, Online Modules → Virtual Simulation → In-Person Simulation → Knowledge Assessment #2 Post-Program Survey

Participants (N=51)

Public Health 27%; Medicine 24%; Nursing 24%; Pharmacy 25%
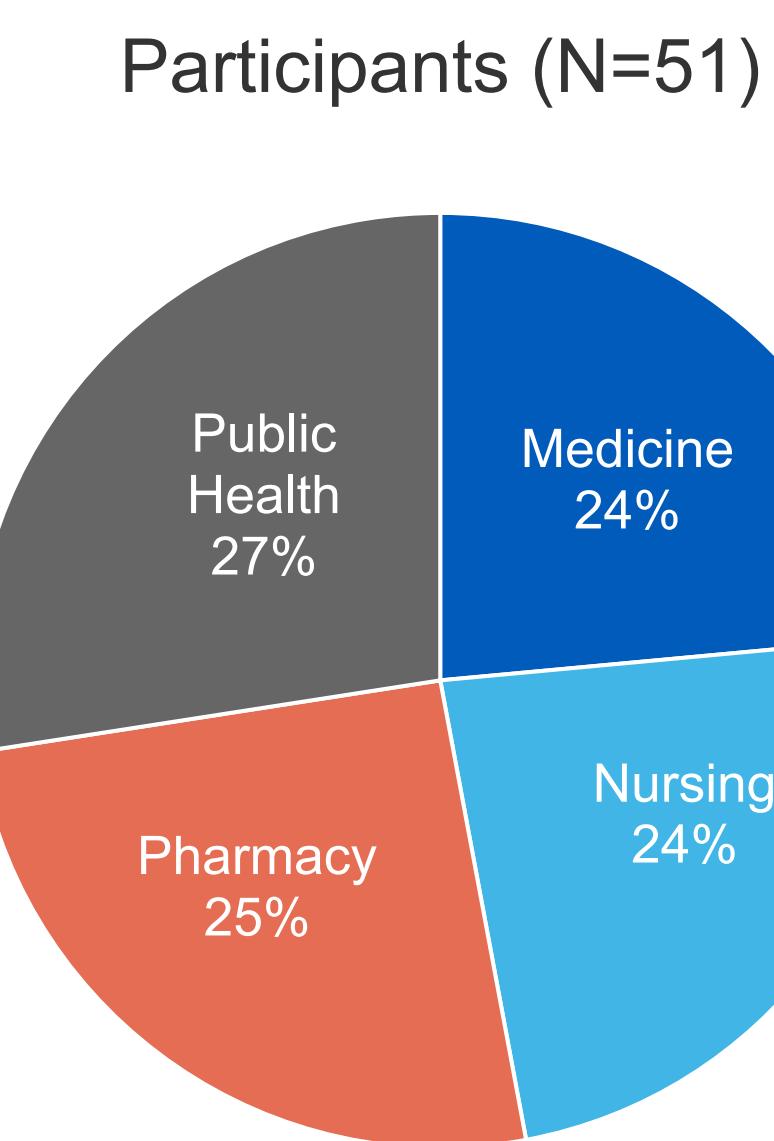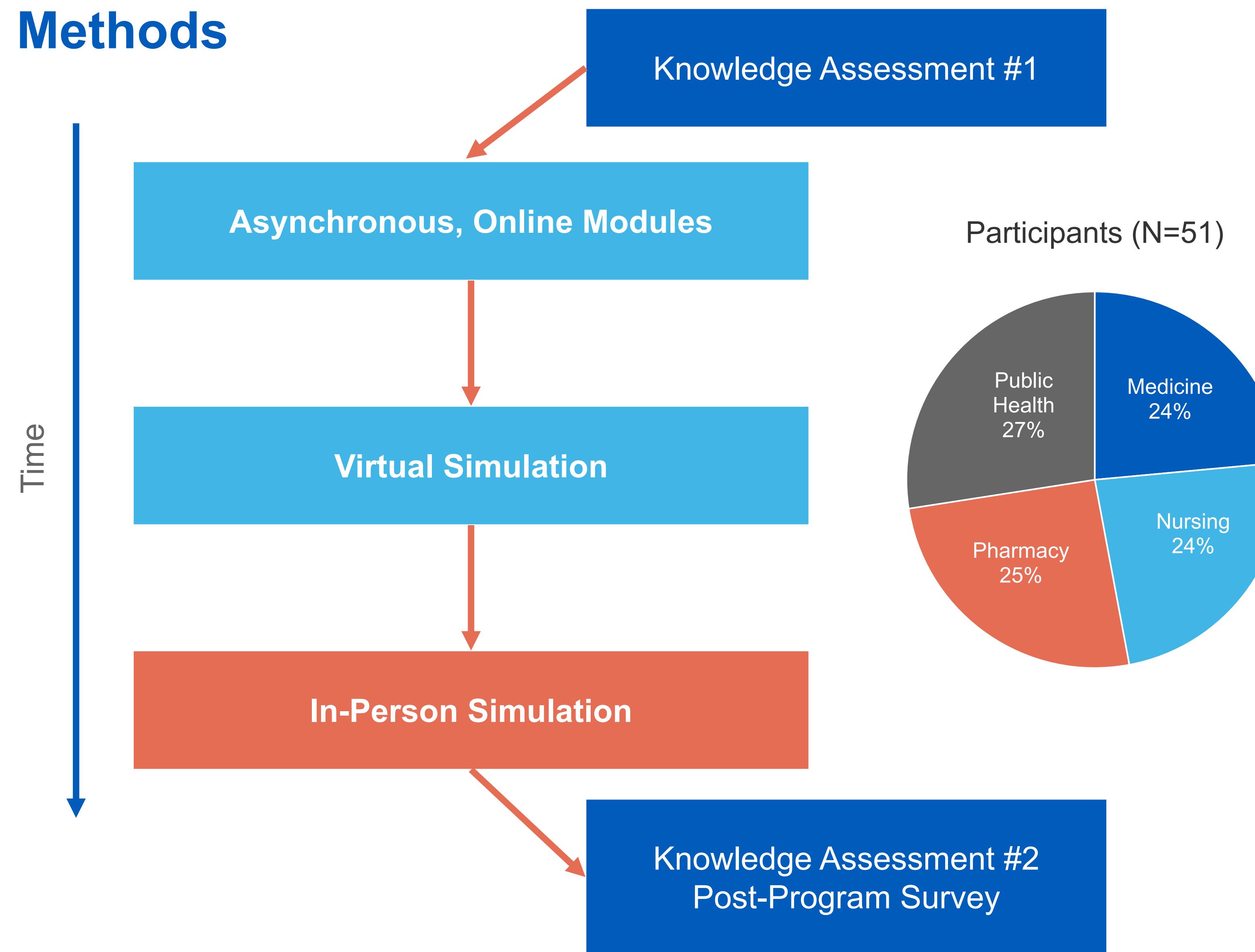
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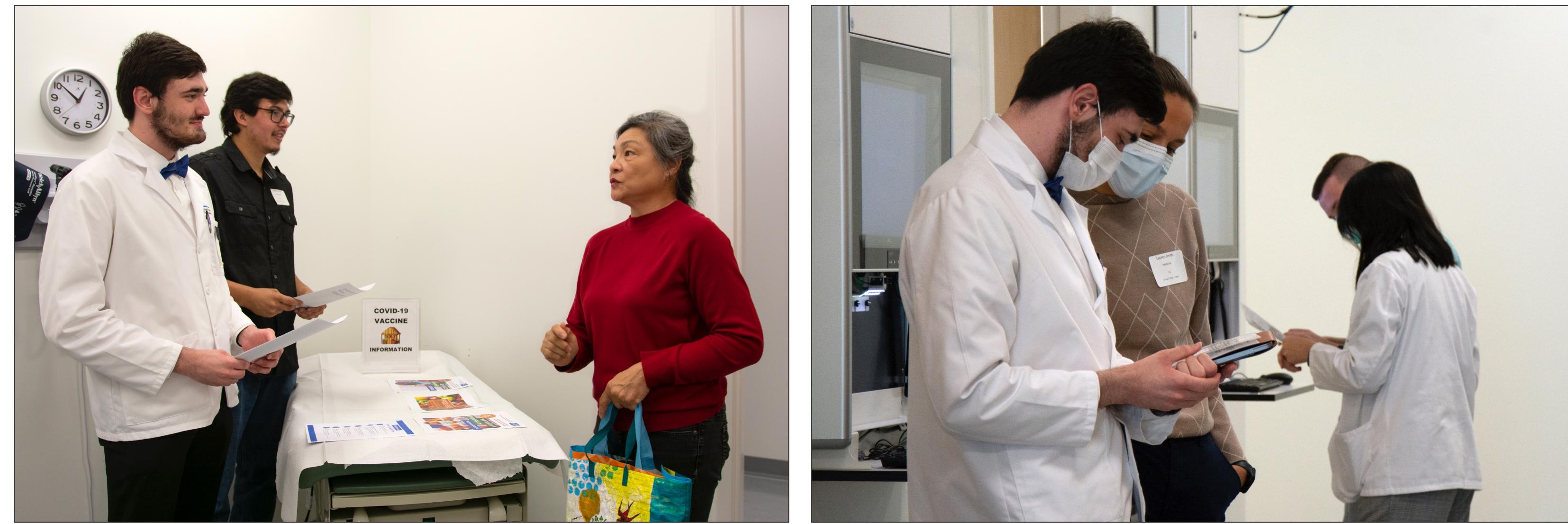
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Knowledge Assessment

Pre-Test 44% | Post-Test 60%

p=0.04
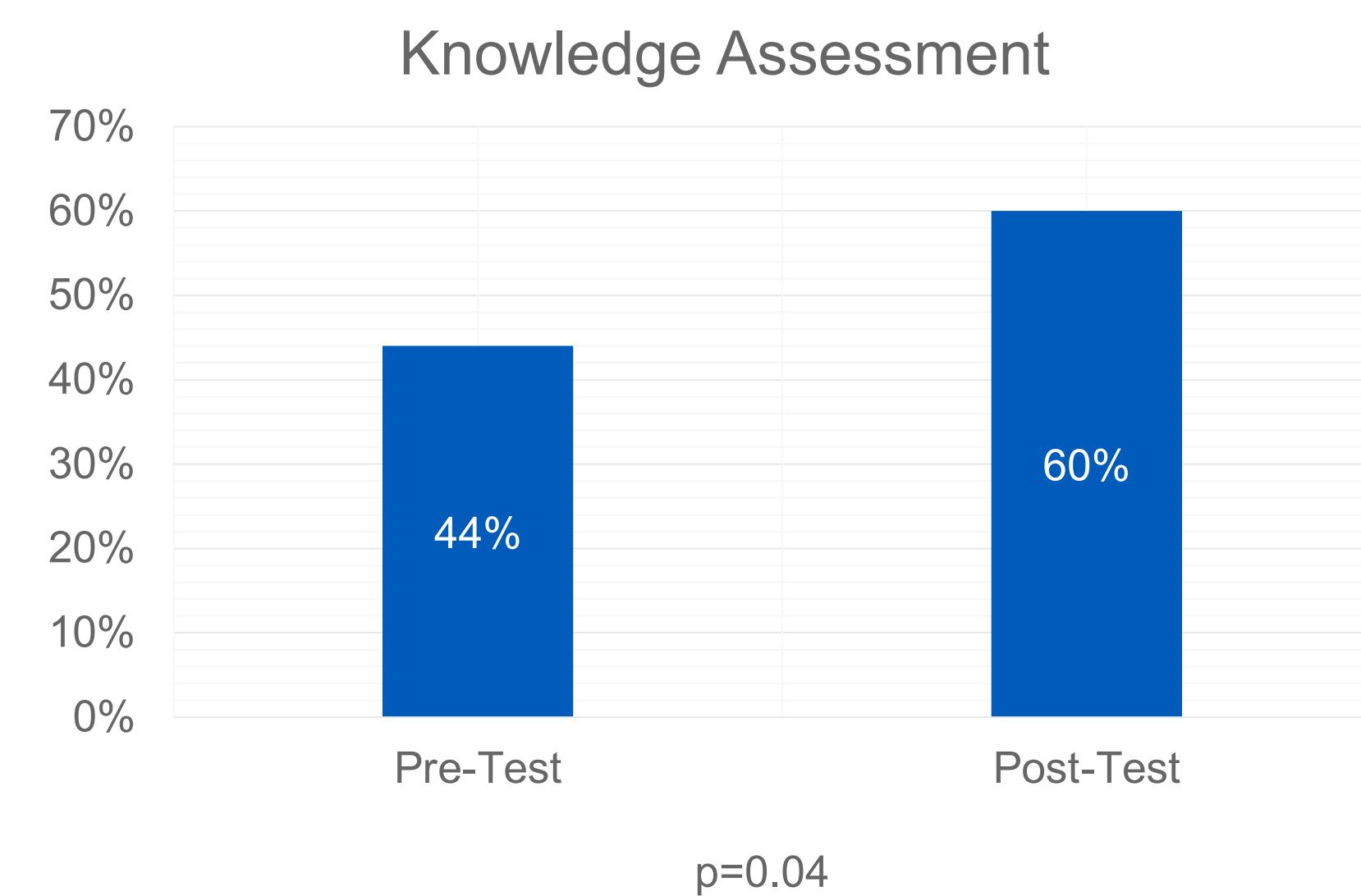
Table 1. Self-Assessed Abilities of Student Participants (N=51)

| Item	Total N (%)
Compared to before, my ability to…	
Collaborate interprofessionally is:	
About the same	12 (23.5)
Somewhat better now	18 (35.3)
Much better now	21 (41.2)
Address medical misinformation is:	
About the same	1 (2.0)
Somewhat better now	28 (54.9)
Much better now	22 (43.1)
Address vaccine hesitancy is:	
About the same	2 (4.0)
Somewhat better now	17 (33.3)
Much better now	32 (62.7)

Table 2. Comparison of Retrospective Pre- and Post-Experience Self-Assessed Skills by Student Participants (N=51)

Item	Pre Mean (SD)[a]	Post Mean (SD)[a]	Diff Mean (SD)[b]	p	Magnitude of Effect[c]
Before/after participating in this experience, my ability to do the following skill was:					
Ask an individual permission to discuss vaccines	2.7 (1.0)	4.0 (0.8)	1.4 (0.9)	<.001	Large
Ask an individual to share their concerns related to vaccines	3.0 (0.9)	4.2 (0.7)	1.2 (1.0)	<.001	Large
Express empathy in relation to an individual's concerns about vaccination	3.0 (1.0)	4.2 (0.7)	1.2 (0.9)	<.001	Large
Assess an individual's level of resistance to vaccination	2.8 (1.0)	3.9 (0.8)	1.1 (0.9)	<.001	Large
Respond applicably to an individual's level of resistance to vaccination	2.3 (0.8)	3.8 (0.8)	1.5 (0.9)	<.001	Large
Incorporate social norms into a conversation about vaccination	2.6 (1.0)	3.9 (0.8)	1.2 (1.0)	<.001	Large
Engage in shared decision making with an individual	2.8 (1.0)	3.9 (0.8)	1.1 (0.8)	<.001	Medium
Affirm an individual's decision about vaccination	2.7 (1.0)	3.9 (0.7)	1.2 (0.9)	<.001	Large
Total Scale Score (pre α=0.90, post α=0.92)	2.7 (0.7)	4.0 (0.6)	1.2 (0.7)	<.001	Medium

[a] The scale scores are based on a five-point rating system and are the mean of the responses to the items; 1=poor, 2=fair, 3=good, 4=very good, 5=excellent
[b] Paired sample t-test was used to determine significance, defined as $p<.05$ between pre and post results.
[c] $d<0.2$ is considered a very small effect size; d between 0.2 and 0.5 is considered small, d between 0.5 and 0.8 is considered medium, and $d>0.8$ is considered large

Table 3. Ratings of Individual Components and Overall Educational Experience Between Professions (N=51)

Item	Total Mean (SD)[a]
The asynchronous, online modules:	
Advanced my foundational knowledge related to this topic	4.2 (0.6)
Prepared me for the virtual simulations	4.2 (0.6)
Prepared me for the in-person simulation	4.2 (0.7)
The virtual simulations:	
Advanced my foundational knowledge related to this topic	4.2 (0.7)
Advanced my skills related to this topic	4.2 (0.7)
Prepared me for the in-person simulation	4.1 (0.8)
The in-person simulation:	
Advanced my skills related to this topic	4.6 (0.6)
Prepared me to apply learned knowledge and skills to patient care	4.7 (0.6)
Large group debriefing helped me further develop my ability to use the skills	4.5 (0.7)
Through participation in the program in its entirety:	
I gained new knowledge and insights about medical misinformation	4.6 (0.6)
I gained new knowledge and insights about vaccine hesitancy	4.6 (0.6)
Total Scale Score (α=0.90)	4.3 (0.5)
This program:	
Was an effective learning experience	4.5 (0.6)
Was important to my professional development	4.5 (0.7)
Was relevant to my profession	4.6 (0.6)
Was well organized	4.7 (0.5)
Should be required for the degree program in which I am enrolled	4.1 (1.0)
Should be required for all health professions students	4.1 (1.1)
Total Scale Score (α=0.89)	4.4 (0.6)

[a] The scale scores are based on a five-point rating system and are the mean of the responses to the items; 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree

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