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College of Health and Human Sciences

Overview & Importance

This project aims to create and evaluate curricular interventions to impact future healthcare worker (HCW) vaccine knowledge, beliefs, and intentions, focusing on employer influenza vaccine mandates.

- ⊗ Vaccines reduce infections, hospitalizations, and deaths associated with many infectious diseases (Whitney et al., 2014)).
- Trends towards reduced vaccine acceptance are a growing global health threat (World Health °Organization, 2019).
- Complex variables interact to influence individual vaccine decision-making (Latkin et al., 2021)
- Healthcare workers (HCW), including nurses, may play important roles in advocating for vaccine acceptance (Wilson et al., 2019).
- Fig. HCW with higher vaccine knowledge may be more effective advocates (Takeuchi et al., 2022).
- 👯 Research indicates that nursing students may have lower vaccine knowledge than other healthcare professions students (Dybsand et al., 2019).
- The influenza vaccination status of healthcare workers (HCW), including nurses, affects HCW infection risks, patient outcomes, and healthcare costs and efficiency (Music, 2012)).
- Interventions to impact HCW knowledge, beliefs, and intentions regarding promoting vaccination may be most effective at the pre-professional (Grimshaw et al., 2002).

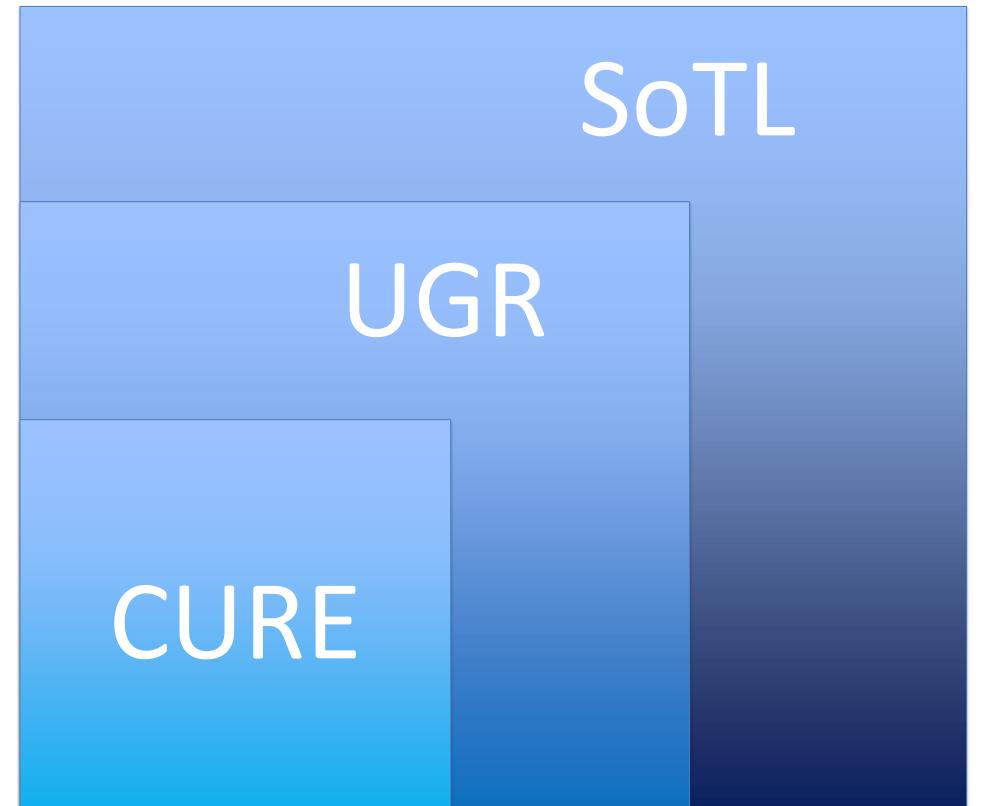


Project Staff Responsibilities:

- School of Health Sciences Faculty
- Content Area Expertise Pre-Nursing Curriculum Expertise
- School of Nursing Faculty
- Professional Needs Expertise
- School of Nursing Curriculum Expertise
- Undergraduate Research Students
- Data Collection & Analysis

Project Framework:

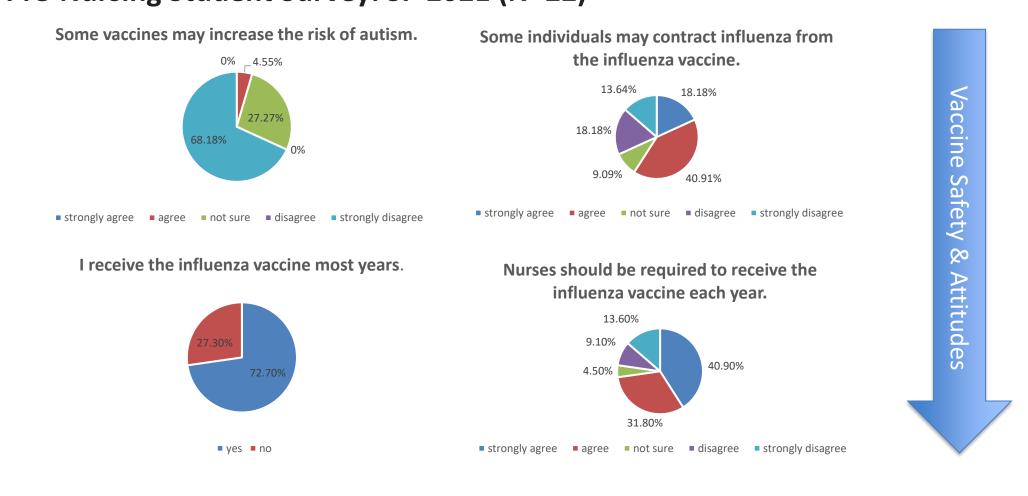
- Scholarship of Teaching and Learning (SoTL)
- Traditional, Mentored Undergraduate Research (UGR)



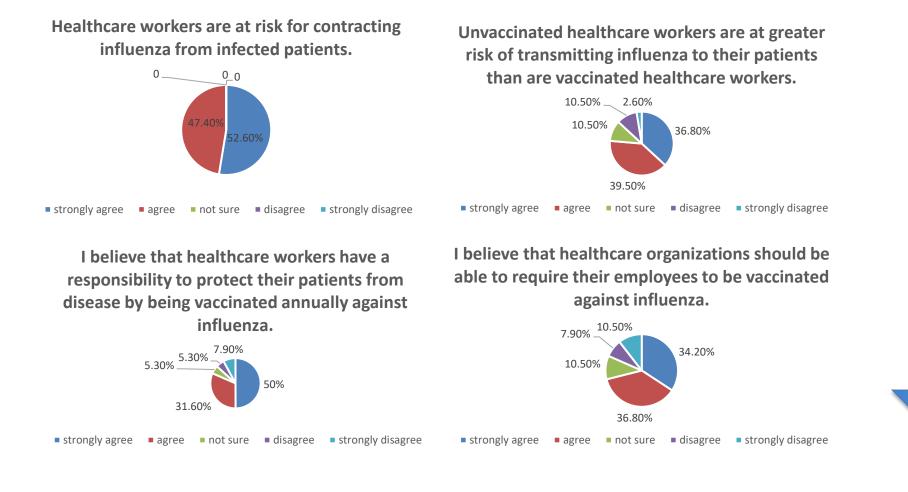
- This project engaged pre-nursing students in a CURE to impact knowledge and attitudes regarding influenza disease and vaccination in healthcare settings.
- CURE development and impact evaluation were aided by UGR students.
- Overall project impacts were described using SoTL methodology.

Describing the Problem

Pre-Nursing Student Survey: SP 2021 (N=22)



Nursing Student Survey: SP 2022 (N=38)



Nurse Interviews: SP 2023 (N=5)

Do Nurses Have a Personal Responsibility to Protect Their Patients by Being Vaccinated? "No, not really because...if you're practicing...adequate PPE you shouldn't be transmitting to staff or "There's some of us...in the middle, like well I'm gonna get it just because I don't wanna give it to somebody else...and then feel guilty... "(An) infectious disease doctor told me one time it wasn't so much for my protection it was for my patients' protection and that's when I started taking it because I always refused to take it until then." **How Do You Feel About Employer Vaccine Mandates?** "I don't like being told what to do..." "I don't think it's right (as an employee)...but as a manager I can see why they do it so I kind of have two different thoughts on it." "...you're already resentful...I think they're very resentful being mandated to do something..." "I think it should be a choice...they should give reasons why it's better to do it..." "I believe that I went through school long enough to know what's right and wrong and that I know how to take care of my patients."

Summarizing the Challenges

- Vaccine Safety/Efficacy: Evidence from multiple groups indicate low knowledge/lack of trust in the safety and efficacy of some vaccines.
- HCW Risk vs. Patient Risk/Outcomes: Future and current HCW may understand their own infection risks based on work environment but show less understanding of how their vaccination status can impact healthcareassociated infection risk.
- HCW Responsibility vs. Employer Mandates: Pre-Nursing Students, Nursing Students, and Nurses generally indicate greater support for personal responsibility to vaccinate than for employer vaccine mandates.

Developing Relevant Curricula

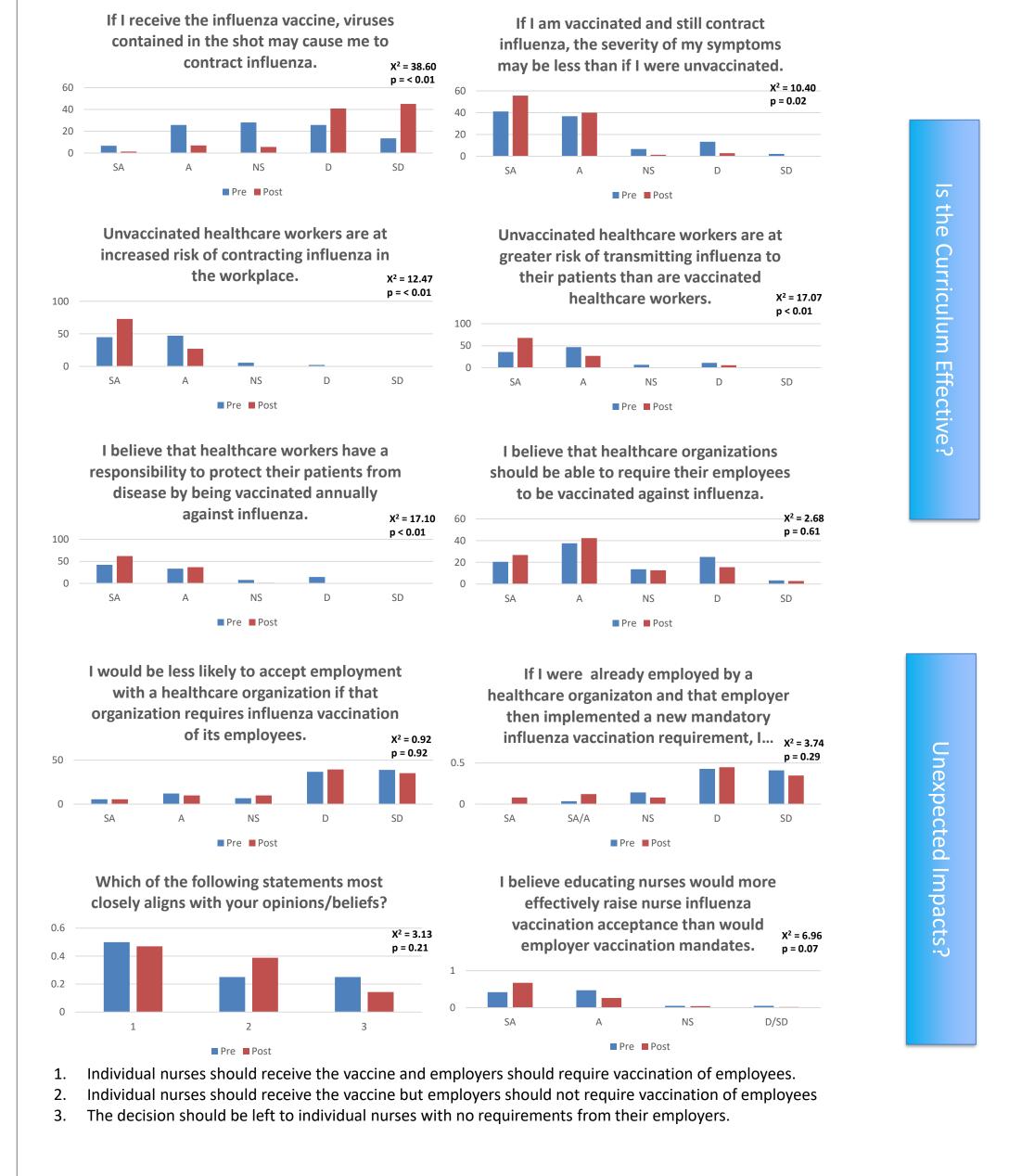
A CURE curriculum challenges pre-Nursing students enrolled in an infectious diseases course to utilize data to develop professional training strategies to increase influenza vaccine acceptance among employees of a hypothetical large, long-term care network.

Anonymous pre/post surveys describe changes in student knowledge and attitudes before and after completing the curriculum.

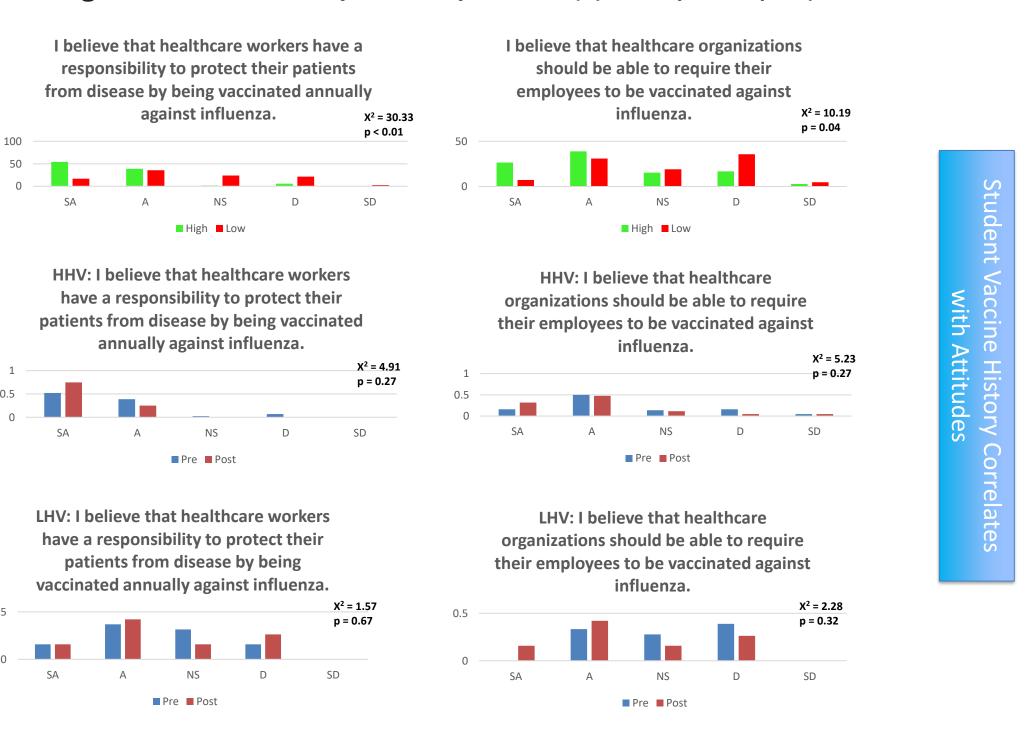
Curriculum details are revised based on ongoing analysis of student impacts. For example, recent iterations focus on increasing vaccine acceptance among employees who have traditionally chosen to mask during flu season rather than receiving the annual flu vaccine. New analyses are then used by students to develop training strategies.

Curriculum Impacts & Opportunities

Pre-Nursing Students: SP 2023/FA2023/SP 2024, (N = 90 pre, 70 post)



High Historical Vaccinating (HHV) vs Low Historical Vaccinating (LHV) Pre-Nursing Students: SP 2023/FA 2023/SP 2024, (N = 44 pre, 19 post)



Summarizing Curricular Impacts

- Curricula significantly improved Pre-Nursing Student knowledge of vaccine safety and efficacy, as well as the importance of HCW vaccination status on patient outcomes.
- Beliefs regarding HCW responsibilities were significantly impacted, but support for employer mandates showed little change.
- Knowledge and beliefs differed significantly in several areas between HHV and HLV students.
- The curriculum may strengthen students' preference for employee education over mandates to ensure adequate vaccination rates.

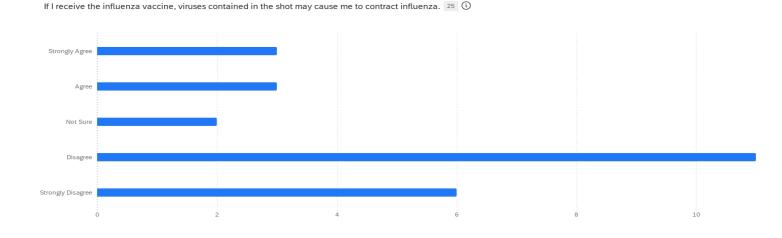
Discussion & Conclusions

- Collaborative research partnerships between faculty with diverse expertise, traditional undergraduate research students, and students conducting course-based undergraduate research (CURE) informed curricular modifications and led to increased curricular relevance.
- By linking course content directly to professional responsibilities, the **CURE** & Evidence-Informed Practice curriculum challenged students to reflect on future professional responsibilities, attracted future undergraduate research students, and fostered a pipeline of research-oriented health professionals.
- This interdisciplinary framework—integrating faculty and undergraduate student research, CURE curriculum, and evidence-based practice—can serve as a model for enhancing curriculum relevance and student engagement across academic disciplines.

Next Steps

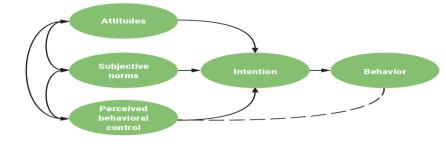
Appropriate Population: Evidence indicates that LHV students are heterogeneous in knowledge, beliefs, and their response to curricula. A focus on HHV vs LHV students resulted in impactful curricular updates, but future research is needed to better understand these impacts based on starting knowledge and beliefs rather than vaccination status.

Evaluating Long-Term Curricular Impacts & Needs: Ongoing research seeks to describe the long-term impacts of the CURE & Evidence-Informed Practice curriculum. Do final-semester Nursing Students retain the knowledge gains observed soon after completing the curriculum as Pre-Nursing Students? Evidence indicates a need for continuing curricula to maintain knowledge status. This will require coordination with School of Nursing faculty.



Describing Psychological Factors Impacting Beliefs Towards Mandates:

Further research is needed to understand the varied and complex social and psychological factors that influence vaccine decision-making and attitudes towards employer vaccine mandates. Undergraduate research students will lead this effort and faculty will incorporate findings into curriculum updates.



Citations

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