Proceedings from the 2023 Medical College of Wisconsin Innovations in Healthcare Education Research Annual Conference

The following award-winning abstracts were presented during the 10th Annual Medical College of Wisconsin (MCW) Innovations in Healthcare Education Research (IHER) Annual Conference on September 19-21, 2023. Health care educators and researchers from MCW and other national institutions meet annually at IHER to present their research and innovative ideas and to learn from one another about the new and creative approaches to educating students and residents. The 3-day conference includes nationally recognized keynote speakers, panel sessions, workshops, roundtables, oral presentations, and posters which can be viewed at https://www.mcw.edu/IHER2023. Three hundred participants hailed from 22 states and 7 countries. The winning oral presentations and posters in the research and innovations categories are published below.

BEST ORAL PRESENTATION – INNOVATIONS

Development and Trial of a Low-Cost, Simulation-Based Abortion Skills Training

Emily Lambert, BS; Alenna Berosa, MS; Elisha Jaeke, BS; Julie Szczygielski, BS; Allison Linton, MD; Kathryn Dielentheis, MD

Problem Statement: Nearly 1 in 4 people capable of becoming pregnant will obtain an abortion in their lifetime. Thus, it is crucial that graduating medical trainees are equipped to provide abortion care. However, turbulent legal landscapes have limited access to adequate surgical abortion training. Efforts led by various organizations and providers have expanded access to abortion education, though there remains a necessity for supplemental training in the absence of direct patient care experiences. In addition, as learners travel for educational experiences, providing pre-rotation education is critical. The use of simulation training in medical education has shown improvement in skills acquisition, though abortion care simulations are limited by cost, realism, or widespread use. This project addresses these issues with a low-cost, procedurally realistic, and easily implementable task trainer.

Approach: Two board-certified Ob-Gyn physicians with extensive abortion care experience compiled a list of techniques necessary to teach resident trainees, which included paracervical block, cervical dilation, manual vacuum aspiration (MVA), dilation and curettage, and intrauterine device (IUD) placement post-abortion. A design matrix was used to evaluate fruits for use as the uterine model for first- and second-trimester abortion; dragon fruit and papaya were chosen, respectively. A preliminary model comprised of an anatomical pelvis, polyvinyl chloride (PVC) pipe, dance tights, hair ties, silicone, and fruit was created. A group of 14 Ob-Gyn residents evaluated the face validity of the task trainer. A survey was provided to each participant to assess their exposure to abortion education, confidence with abortion techniques, and feedback on the simulation. Resident feedback was compared with physician expertise to create the final model.

Lessons Learned: This low-cost 5-station model received favorable feedback from the Ob-Gyn residents. Feedback included that residents in the PGY-1 and 2 years would likely benefit most from this simulation. Junior residents demonstrated the greatest face validity improvements in perceived confidence performing an MVA and post-abortal IUD insertion, while senior residents demonstrated consistent confidence across the 5 procedures. Learners of all levels demonstrated consistent confidence performing a paracervical block and cervical dilation, likely due to previous direct patient-care interaction as these are two techniques not unique to surgical abortion. The materials for the model are readily available and affordable, making it accessible to a variety of training programs or individual learners.

Significance: This work illustrates the educational use of simulation abortion skills training. Additionally, it further demonstrates the feasibility of creating low-cost, medium-fidelity medical education simulations through the creative adaptation of everyday objects.

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BEST ORAL PRESENTATION – INNOVATIONS

Evaluation of a Health Equity Curriculum to Improve Cultural Competence With Asian American Native Hawaiian Pacific Islanders

Owen Bowie, BS; Anji Li, BSE/MSE; Iaong Vang, BS

Problem Statement: AANHPIs (Asian Americans, Native Hawaiians, and Pacific Islanders) represent 6.1% of the US population, with unique health disparities and social inequities that warrant consideration. However, there is currently limited education on AANHPI health and associated disparities within national health education. Because culturally sensitive training helps reduce health disparities and improve quality of care, our goal is to create a nationally established curriculum for health care trainees on AANHPI health.

Approach: The Health Advancement for Asian Pacific Islanders through Education (HAAPIE) curriculum was designed as the first comprehensive national curriculum on AANHPI health. It addresses AANHPI health issues through an integrative lens of history, intersectionality, and other social determinants of health. An online self-paced learning curriculum with 6 modules was developed and available to Medical College of Wisconsin affiliates. Participants completed an electronic pre- and post-survey that contained 5 domains and 69 items. The pre-survey questions were adapted from the Clinical Cultural Competency Questionnaire, a validated survey tool that measures cultural competency. Survey results were evaluated using paired t tests.

Lessons Learned: Out of 77 interested participants and pre-surveys, 60 enrolled in the curriculum (77.9%) and 22 completed post-surveys (28.6%). On a 5-point Likert scale, pre-survey results showed supportive attitudes towards the AANHPI population (mean = 4.17, SD = 0.99) and the importance of learning about this population and its health disparities (mean = 4.73, SD = 0.7). However, results also indicated a lack of training in cultural diversity (mean=1.9, SD = 1.17), little educational experience in AANHPI health (mean=2.62, SD=1.07), cultural awareness, knowledge (mean=2.98, SD=1.14), comfort in complex situations (mean=2.61, SD=1.22), and skills (mean=2.32, SD=1.08). Evaluation of the impact of the pilot curriculum showed statistically significant improvements in all fields ($P < 0.05$).

Significance: The HAAPIE initiative highlighted and addressed the need for training on AANHPI health. This novel curriculum improved attitudes, knowledge, and skills working with AANHPI populations. Future directions include analyzing the impact of curriculum modules and expanding HAAPIE across the nation.

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BEST ORAL PRESENTATION – RESEARCH

TikTok, Does it Have a Reliable Role in High Quality Nano-learning Within Medical Education?

Akua Asare, MBBS

Introduction: Nano-learning is the condensing of content into small units for learners to achieve an objective. At the forefront of this could be "TikTok." Currently, most medical students' source of information is from subscription websites like "Osmosis" and "Quesmed." These sites deliver high-quality visual information; however, it often can be lengthy and lack insight into patients' experiences. TikTok can be the free, patient-centered alternative, once its video content quality reaches that of its rivals. The aim is to elicit the ability of TikTok to advance the ways we deliver teaching or enhance self-directed learning within medical education.

Methods: Twelve peer-reviewed articles were analyzed to find common pros and cons of TikTok in regard to medical education delivery via a thematic analysis. Articles that used the DISCERN criteria (1-5 scale) for appraising the quality of consumer health videos were analyzed to produce scores quantifying the videos' informative quality.

Results: Four out of 12 studies used a form of the DISCERN criteria. Of these, scores ranged from 0.98 to 3.75 with a combined mean of 2.40, defined as poor quality educational videos. For content created by physicians, the DISCERN score was consistently higher than nonphysician-created videos. Upon thematic analysis, TikTok supports nano-learning strategies, enhances nano-activities with advanced features, and could be useful for medical students lacking patient exposure. However, videos were criticized for being superficial, the algorithm-driven timelines were a concern, and there were worries about misleading information.

Conclusions: Currently, there is "little" reliable role of nano-learning in formal learning environments in medical education as the information produced from informative medical education videos cannot be validated. Therefore, for now, nano-learning modalities--such as educational content on TikTok--are used mainly in informal learning environments. I suggest that future medical education content creators produce TikTok videos with caution and consult evidence-based resources whenever possible. Content developed for TikTok should fit the medium but also link to more in-depth learning, driving learners to more thorough, evidence-based resources grounded in educational theory.

Significance: This study provides a foundation for further research and development of TikTok as a tool for delivering high-quality medical education content.

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BEST POSTER PRESENTATION – RESEARCH

Promoting Health Literacy and Preventive Care: A Monthly Curriculum and Mobile Clinic Initiative

Manvita Mareboina, BS; Diana Orabueze, BS

Introduction: A strong foundation in health literacy is essential for individuals to make informed decisions about their health, par-

ticularly in underserved rural communities where access to health care may be limited. While this skill is built over a lifetime, it is particularly crucial to start developing it in childhood. The early years of cognitive development are an important time to introduce health literacy interventions that can establish health-related behaviors for life. Therefore, we established a partnership between the LION Mobile Health Clinic and the Centre Hall Library System to deliver a comprehensive health literacy workshop curriculum to children in the Centre County community.

Methods: The curriculum, which incorporated the health services provided by the LION Mobile Health Clinic and the reading time services offered by the Centre Hall Library, fulfilled the Pennsylvania Star Forward Program's requirements for public libraries by covering essential topics, such as sleep awareness, nutrition, exercise, and hygiene. During the implementation of the curriculum, the LION Mobile Health Clinic provided health services outside the Centre Hall Library. To assess the effectiveness of the program, pre- and post-surveys were administered to participants, which not only collected demographic information but also targeted health literacy questions.

Results: Findings suggest a significant impact of the Health Literacy Workshop curriculum on children's engagement levels. Results indicate that children remained engaged for up to two activities and were more likely to participate actively when encouraged by their parents. Moreover, surveys of parents indicated that children displayed a strong comprehension of the skills taught and effectively incorporated them into their daily routine. Participants reported enjoying the workshops and post-reading activities. Additionally, there was increased attendance and participation rates of both the Centre Hall Library system and the Pennsylvania State University College of Medicine's LION Mobile Clinic unit.

Conclusions: These findings demonstrate the efficacy of the curriculum and demonstrate the potential for public health interventions to make a meaningful impact on community health outcomes. The partnership between the mobile clinic unit and local libraries in Centre County enables us to leverage current events to boost participation and establish rapport with new communities. The participation of parents in their children's education enhances long-term retention and understanding. These tools enable us to continue refining our programs to better meet the needs of rural communities, with constant potential for collaboration between health care providers and public libraries to promote health literacy.

Significance: This innovative curriculum and approach can easily be adopted by other library systems and educational institutions to increase health literacy while making mobile care units more accessible.

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BEST POSTER PRESENTATION – INNOVATIONS

Closing the Loop: Implementing an Annual Survey to Gauge Student Feedback

Riya Shah, BS; Matthew Brennan, BS

Problem Statement: Wayne State University School of Medicine (WSUSOM) faculty and administration seek consistent, standardized feedback from students to address top student concerns. The Independent Student Analysis (ISA) survey is a comprehensive, student-led survey that provides evaluations of and recommendations for the medical education program at WSUSOM. This survey is conducted every 8 years. At the moment, there exists no regularly administered large-scale student feedback mechanism.

Approach: To establish a more consistent line of communication between students and administration, annual implementation of the ISA survey may better facilitate solutions to student concerns. Student leaders designed a shortened version of the ISA (38 questions) by determining the top priorities for student feedback. Budget allocations were determined with administration to incentivize student participation. Following survey distribution, the committee met to review and summarize the results, as well as brainstorm solutions to student concerns. The ISA Committee then compiled a summary presentation with survey results, analysis, and recommendations for administration. Following this presentation, the committee will continue to work alongside administration to tweak and implement the suggested solutions.

Lessons Learned: Nearly 80% (79.3%) of the student body responded to the ISA survey (n = 967). Of the 38 questions, students overall expressed low satisfaction (<70% combined satisfied and very satisfied) in 20 questions. The ISA Committee placed emphasis on finding solutions to the questions that received low satisfaction rates. By asking pointed free response questions, the team was able to pinpoint which areas students had the most concerns in and factor in student solutions into the final report. In general, the top 3 areas that received the most free-response comments were preclinical curriculum, communication, and clinical curriculum. As such, the team will encourage administration to focus its quality improvement measures on these priority areas. Annually gauging student satisfaction and feedback is vital to measuring the efficacy of the medical education program at WSUSOM.

Significance: There are many institutions that use student feedback surveys to maintain their quality improvement measures. However, WSUSOM is unique with this initiative being 100% student-led at our large, single-campus institution with more than 1200 students. Student feedback helps in identifying shortcomings and refining solutions.

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