

BC3 RN, STEM students showcase findings

Dec. 6, 2018



Butler County Community College second-level nursing students discuss results of their evidence-based practice research on Thursday, Dec. 6, 2018, in AK Steel Lobby outside Succop Theater on BC3's main campus. From left, Tisha Sharrer, of Kittanning; Brooke Fisher, of Butler; Olivia Iseman, of Ford City; and Marissa Marsh, of Butler. The group's evidence-based practice research was titled "Eight-hour vs. 12-hour shifts and nurse fatigue."

(Butler, PA) How does a 12-hour work shift impact nurse fatigue, risk medical errors, and affect patient satisfaction and safety, Butler County Community College second-level registered nursing students wondered, compared to an eight-hour work shift?

The query from a group composed of Olivia Iseman, Marissa Marsh, Brooke Fisher and Tisha Sharrer was one of 14 whose results concluded a 13-week-long research project and were displayed in "New Minds of Nursing at Work," a series of poster presentations in AK Steel Lobby outside Succop Theater on BC3's main campus.

The findings of 63 registered nursing students followed those of nearly 100 BC3 STEM students who May 1 also held a gallery walk-style exhibit in AK Steel Lobby to display their work and discuss with the public results of research projects in courses ranging from biology and chemistry to manufacturing technology and metrology.

Representatives from Butler Memorial Hospital and UPMC Passavant Hospital attended the four-hour Dec. 6 exhibit by second-level registered nursing students – those who expect to

graduate in May, said Julia Carney, an instructor in BC3's Shaffer School of Nursing and Allied Health.

"The purpose of this evidence-based practice is to allow students to start being involved in how to change nursing," Carney said. "This is the new frontier in nursing. These are the new minds of nursing. They will be going to hospital settings and they are going to be understanding what needs to be changed."

Some registered nurses may not participate in evidence-based practice research "until two or three years into their career," Carney said. "These students are doing it now."

Topics of the second-level registered nursing students' investigations included "To gown or not to gown for infections," "Charting inside or outside the room," "Alternative therapies for narcotic use" and "Eight-hour vs. 12-hour shifts and nurse fatigue."

Their studies revealed that many nurses prefer 12-hour shifts, according to Iseman, Marsh, Fisher and Sharrer, and that patients are happier with the continuity associated with having the same nurse for 12 hours.

The group also reported that, short of a nurse working excessive overtime, there is no difference in medication errors, or in patient safety from the nurse's actions, between an eight- and 12-hour shift.

"Through our research we discovered that more people would rather work 12-hour shifts," said Iseman, a Ford City resident who upon graduation hopes to begin her career as a med-surg nurse. "We also discovered that there was no correlation in patient satisfaction being decreased in working the 12-hour shifts or in medication errors. It is really the nurses' preference whether they would rather work eight or 12s."

Marsh, of Butler, who envisions a career as a wound care nurse or a flight nurse, said she and her group surveyed registered nurses at regional hospitals to arrive at their conclusion.

"We said, 'Let's talk to them,'" she said. "'Let's go to the nurses.'"

Their tri-fold poster displayed the advantages of an eight-hour work shift, which included fewer hours each day being exposed to disease and stress, and more personal free time before and after work; and disadvantages such as interference with personal appointments and no psychological break from stress.

Advantages to working 12 hours included a shift-change report having to be given only twice in a 24-hour period – rather than every eight hours and three times daily – "making it less likely to miss important patient information in the handoff," and disadvantages such as exhaustion at shift's end and less staff to cover unexpected call-offs.

"Everything that nurses do nowadays to improve practices is based on evidence-based research," said Kristine Kenny, an instructor in BC3's Shaffer School of Nursing and Allied Health. "So

this provides an opportunity for them to consider how they can make a difference. And they certainly can. But we have to teach them how to do the research so they can come up with their theories. Why do we do it this way? Why do we do it that way? That is how we make changes in the nursing practice.”

Added Carney: “Every new group, every new class, is a new mind. So they are going to look at things differently than some of us who have been in the ranks for 20 years. We have been doing the same thing for 20 years because that is the way we have always done it.”

Fisher, of Butler, who plans to become a nurse on a maternity ward, said she would rather work a 12-hour shift.

“I would be able to have more time and do things,” she said. “I think whenever I have kids it might be a different story. But right now I could do (a work week of 12-hour shifts), be done and have four days off.”

Sharrer, a Kittanning resident and nurse’s aide in a psychiatric unit, said members of the public and hospital representatives would be impressed by the 14 poster stations on the gallery walk-style exhibit.

“I have looked around,” she said, “and everyone had good, solid ideas.”

STEM session “exciting for the community”

The sixth STEM Division poster session included for the first time presentations from BC3’s presidential scholars program and, Dr. Melinda S. Ripper said before the event, will be “exciting for the community.”

“The community invests in this college, and they invest in these students,” said Ripper, a STEM professor who teaches organic chemistry and who has coordinated the presentations since 2013.

“They have the opportunity to see just how much these students have learned, and how well prepared they are, to leave this campus and go to industry or go to a four-year campus to continue their education. They get to see their investment.”



Dr. Melinda S. Ripper, left, a STEM professor at Butler County Community College, works Tuesday, April 24, 2018, in BC3’s Science and Technology Building with sophomores Darienne Yates, of Slippery Rock; Kelly Kabay, of Butler; and Joshua Fischer, of Freeport; on a poster project regarding berberine, a known natural anti-microbial agent found in plants.

Students completing courses in biology, genetics, geology, microbiology, modern instrumental methods in chemical analysis and in organic chemistry gave visitors five- to 10-minute talks on their projects using scientific posters, a standard practice at research conferences.

BC3's presidential scholars, and those in the manufacturing with advanced technology, and measurement science-metrology technology programs, also discussed their research with the public.

"We want to give students this capstone experience in which they apply everything that they have learned in the past two years," Ripper said before the event. "Their individual projects took weeks to months to complete. It will also give them experience in oral presentation of their findings and sharing their knowledge."

Visitors would not only learn about the research findings, but also "how well-prepared and how articulate our students are, and their understanding of science or technology," Ripper said.