

Final Evaluation Report
Focused Nurse Education: ItcGAIN
Long-Term Care Geriatric Advancement in Nursing
December 2019

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Evaluation Report Executive Summary

LeadingAge Ohio joined together with the Optimized Care Network, the Ohio State University College of Nursing and the Office of Geriatrics and Interprofessional Aging Studies to better understand how a focused curriculum for RNs, LPNs and STNAs in long term care facilities could increase their ability to communicate accurately, effectively, and confidently the conditions of the long term residents in their facilities, thereby improving these residents' healthcare and reducing unnecessary hospitalizations and emergency room visits. Civil Monetary Penalty Funding was received through the Ohio Department of Medicaid and the Centers for Medicare and Medicaid Services to undertake the pilot project and the ItcGAIN Program was developed.

Pilot testing occurred at four LeadingAge Ohio member long-term care organizations, with at least 80% of the nursing staff at each completing the eight on-line ItcGAIN modules over a period of four months (March-June 2018). Data relating to hospital transfers and readmissions were then compared at each facility for the six months prior to the education and the six months following completion of ItcGAIN. The initial goal was an overall 20% reduction of hospital readmission and an overall 10% reduction of emergency room visits, with the hope of looking at the rates by diagnosis.

Analysis of the data compiled through the INTERACT tool, as well as some information from PointClickCare revealed that:

- Four of the six pilot facilities, whose data were included in the final analysis, had lowered 30-day readmission rates for the post-acute and chronic long-term care residents, thus lowering the rates overall in the post-intervention period.
 - Of the facilities whose rates decreased, percent change for overall residents from pre to post-intervention period ranged from -14% to -31%.
- Four of the six pilot facilities lowered transfers that resulted in inpatient admissions.
- Four of the six pilot facilities lowered transfers that resulted in observation admissions. [Not the same four as mentioned in the previous two bullets.]
- Three of the six pilot facilities lowered the number of transfers that resulted in Emergency Department only visits.
 - Of the facilities whose rates decreased, percent change for Emergency Department only visits from pre to post-intervention period ranged from -5.9% to -42.9%.

30-day Readmission Rates by facility for Post-Acute Care, Chronic Long-Term Care, and All Residents (Percentage)

	Post-Acute			Chronic LTC			All		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Facility A	11.5	8.3	-27.8	6.3	5.6	-11.1	11.3	7.8	-31
Facility B	13.0	17.9	+37.7	9.3	13.3	+43	10.6	15.8	+49
Facility C	13.9	20.5	+47.5	6.7	24.2	+261	13.3	21.5	+61.7
Facility D	14.1	13.8	-2.1	21.8	8.7	-60.1	15.7	13.5	-14
Facility E	20.1	12.7	-36.8	22.2	14.4	-35.1	18.1	12.8	-29.3
Facility F	17.6	14.8	-15.9	10.8	5.6	-48.1	18.2	14.0	-23.1

Number of Emergency Department Only Visits, by facility

	ED only visits		
	Pre	Post	Percent Change
Facility A	17	16	-5.9%
Facility B	7	17	142.9%
Facility C	6	9	50%
Facility D	19	21	10.5%
Facility E	23	19	-17.4%
Facility F	7	4	-42.9%

Results are promising, though unfortunately, we were not able to look at rates by diagnosis. Challenges in data collection and reporting and the small numbers of individuals with specific diagnosis, when broken down in several categories, did not allow for this type of analysis. This is further detailed in the report on pages 12 to 15, and 25 to 28.

The greatest challenge confronted in the pilot project was the ability to extract the data in a HIPAA compliant and user-friendly way. It was evident that data analysis is not an area where most nursing facility leadership excel and more technical assistance provided in this area may result in better usage of data at the facility level in a way that can impact practice and outcomes. Additionally, software improvements shared widely and more collaboration among providers may help the entire Ohio long-term care provider community use data in smarter and more efficient ways.

We know that change does not happen easily in institutions or within individuals. This nurse education program, however, showed very promising results and the changes should continue to be studied in a number of ways

and with new facilities, if possible. The use of implementation science to help guide this evaluation allowed us to focus not only on the end-goal or the health outcome of fewer hospitalizations and transfers, but on the processes leading to those outcomes as well, and to the changes in the knowledge, behavior, and skills of the nurses included in the pilot project.

In regard to education, paired-samples t-test comparisons of the pre- vs post-test scores for each module indicated that there was a significant difference in pre- vs post-test scores, overall. The effect size for the analysis was on par with Cohen's (1988) convention for a large effect. In other words, the magnitude of difference between the pre-test and post-test scores for each module was large. Findings of the pilot evaluation indicate

- Nurses of varying educational levels, from LNPs to NPs, can and did learn new information and gain knowledge from the ItcGAIN Program;
- Nurses were able to identify individual behaviors and skills they now have knowledge to employ and put into practice;
- Nurses provided valuable feedback to improve the Program going forward.

Pulling apart and distinguishing effectiveness of implementation from the effectiveness of intervention/treatment is critical for pilot projects such as ItcGAIN (Proctor et al., 2010) -- doing so can impact how the intervention is refined and revised, how it is scaled up and implemented in other settings. While pilot evaluations like this one do not typically result in causal evidence, there is reason to be very optimistic that ItcGAIN Program can impact important key indicators and help to reduce 30-day Readmission Rates and Emergency Department only visits.

Project Overview

Potentially avoidable emergency department (ED) visits and admissions to hospitals from nursing facilities continue to be costly issues, and readmissions have increased in the last decade (Fuller, Goldfield, Hughes, McCullough, 2019; Jencks, Williams, & Coleman, 2009; Mileski, Topinka, Lee, Brooks, McCeil, Jackson; 2017; Ouslander, Bonner, Herndon, Schutes, 2014). One method recommended to reduce avoidable admissions/readmissions is improved clinical nursing care (Ouslander, Bonner, Herndon, Schutes, 2014). In an effort to create and test a distance education program with the aim of improving nursing clinical care and thereby reducing preventable hospitalizations and emergency department visits, LeadingAge Ohio led a collaborative pilot project focused on seven diagnosis categories that greatly contribute to the hospitalization of nursing home residents.

LeadingAge Ohio believes that given the complexity of the health care needs of older adults, ensuring direct care staff such as registered nurses (RNs), licensed practical nurses (LPNs) and state tested nurse aides (STNAs) are up to date on the most recent assessment and treatment protocols is imperative not only to reaching the triple aim outlined by CMS, but to reducing preventable nursing home residents' hospitalizations as well. To that end, LeadingAge Ohio partnered with Optimized Care Network (OCN), Ohio State University (OSU) College of Nursing faculty, Ohio State University College of Medicine's Office of Geriatrics and Interprofessional Aging Studies, and several of their own member agencies who provided skilled nursing care. Faculty members from the OSU College of Nursing who are expert in geriatric medicine authored modules on the following topics: congestive heart failure (CHF), pressure injuries, pneumonia, chronic obstructive pulmonary disease (COPD), diabetes, stroke, and urinary tract infections (UTI). LeadingAge Ohio and the OSU College of Nursing worked together with the Optimized Care Network on curriculum design, and OCN collaborated with program development leadership to include telehealth technology as a teaching tool within the curriculum. The Office of Geriatrics and Interprofessional Aging Studies provided a web-based platform to host the distance education/online modules which included videos recorded using the OCN CareSpace. Staff training interventions utilized at Blue Skies of Texas, a San Antonio life plan community, and the successes they were seeing in the reduction of hospital admissions and readmissions provided important motivation for pursuing this pilot project.

This highly collaborative project resulted in the creation of the ItcGAIN Program: **L**ong-**T**erm **C**are **G**eriatric **A**dvan**I**nces **I**n **N**ursing. It provides focused curriculum for NPs, RNs, LPNs, and STNAs in long-term care facilities

to enhance communications for accurate, effective and confident assessment and reporting of the conditions of the long-term residents in nursing facilities. It was envisioned that STNAs would gain valuable insight into assessment and communication standards across nursing practices, which are not uniformly part of their training. The overall goal was to improve the residents' healthcare outcomes and reduce unnecessary hospitalizations and emergency room visits.

The ItcGAIN curriculum is comprised of the seven disease-specific on-line learning modules, topics as mentioned above, because it is believed there can be significant impact within these seven areas. For each of these conditions, the module provides geriatric-specific training on the basic physiology, pathophysiology, signs and symptoms of concern, and evaluation techniques to discern patient condition. The modules place considerable emphasis on professional communication strategies to support and improve communication between nurses and physicians, with the goal of improving patient care and minimizing unnecessary patient transfers or other interventions. Each module is intended to take approximately one hour to complete. The SBAR communication technique (Situation Background Assessment Recommendation) is a primary teaching tool in the ItcGAIN Program. SBAR provides a framework for communication between members of the health care team about a patient's condition and is an easy-to-remember, concrete mechanism useful for framing any conversation, especially critical ones, requiring a clinician's immediate attention and action. Additionally, SBAR and INTERACT (Intervention to Reduce Acute Care Transfers), to be discussed further later in this report, are both identified in a systematic review as useful components of successful Quality Improvement initiatives to decrease avoidable 30-day readmissions (Mileski et al., 2017).

After an initial review of the modules by directors of nursing from the four participating LeadingAge Ohio members/pilot organizations, instructions for registration and completion of the modules was disseminated to nursing staff at each facility. The initial goal was to have at least 80% of nursing staff complete all the modules; some exceeded that goal. Nurses were incentivized with peer competitions, prizes and the like in order to complete the modules in a timely manner.

Evaluation of any new educational intervention is an important consideration, and therefore each module included a pre- and post-test to assess knowledge, attitudes, and beliefs relating to each topic area. Nurses were required to earn an 80% on the post-test in order to "pass" and earn the continuing education hours for completing the module. There was also a

formative and summative evaluation component for each individual module. This was used to assess clarity of the material being presented and to improve the modules during the course of the pilot and afterward. Nurses were also asked if and how they would change the care they provide as a result of the ITCGAIN Program, to identify new assessment skills they had learned, and so on. This report will detail those findings.

Finally, the primary goal of reducing hospital admissions and emergency department visits will be examined. Data were provided by participating pilot organizations primarily using the INTERACT Safely Reduce Hospitalization Tracking Tool v5.4, and also records from PointClickCare. This provided evaluators with an opportunity to report 30-day readmission rates for a pre- and post- intervention period. Also reported are data regarding whether or not a resident was admitted, only visited the emergency department, and whether or not the transfer was primarily at the request of the clinician.

The education took place from March through June of 2018, and we examined the six-month time period before the educational intervention and the six-month time period after the intervention. The six-month period was adequate as averages during this period resembled the entire year but did not require as much effort regarding data collection for the pre-intervention time period.

Pilot Nursing Facilities

Four LeadingAge Ohio member organizations participated in the pilot of the ITCGAIN Program. These sites represent a cross-section of LeadingAge Ohio members and are described in detail below.

Bethany Lutheran Village

Bethany Lutheran Village is part of Graceworks Lutheran Services, a not-for-profit organization, located in a suburban setting in Dayton, Ohio. Bethany Lutheran Village was established in 1942 as Bethany Lutheran Home for the Aged, becoming Bethany Lutheran Village in 1947. As part of a continuing care retirement community, the campus offers independent living, assisted living, skilled nursing, dementia care and rehabilitation, with 252 licensed long-term care beds. There is also a 49-bed dedicated rehabilitation unit on site. Additionally, the Graceworks organization has services for home care and enhanced living for developmentally disabled communities throughout Ohio, Indiana and Kentucky.

Bethany Lutheran Village had identified that their nursing staff needed additional education to help reduce hospital readmissions, and therefore accepted the opportunity to be part of the ItcGAIN pilot program. According to the Director of Nursing, "The importance of having a low readmission rate is valued not only for the excellence and consistency of care a resident in our facility receives, but also to show quality in our publicly reported data as a facility. The Medical Director and Director of Nursing were the stakeholders initially, with the Director of Nursing continuing throughout the project to work closely with LeadingAge Ohio and The Ohio State University."

Kendal at Oberlin

Kendal at Oberlin is located in Oberlin, Ohio, a college town with slightly over 8,000 citizens in Lorain County, with a county population of slightly over 300,000. Opening in 1993, Kendal at Oberlin is a not-for-profit life plan community with 340 residents – 223 independent living cottages and apartments, 67 assisted living residents and 12 skilled nursing facility beds (there were 42 skilled nursing facility beds when the study began; reduced to 12 in October 2018). Additionally, Kendal at Oberlin is home to the Kendal Early Learning Center that is accredited by the National Association for the Education of Young Children and has attained a Five Star Rating from the State of Ohio, along with other program awards.

Kendal at Oberlin, repeatedly a Medicare five-star facility, is an affiliate of the Kendal System, comprised of 14 different affiliate not-for-profit senior living communities, programs and services founded on the principles of the Religious Society of Friends (Quakers).

Kendal at Oberlin was interested in participating in the ItcGAIN pilot project due to their dedication to innovation and working collaboratively to develop model practices that improve the health and quality of life for older adults.

Shepherd of the Valley

Shepherd of the Valley (SOV) Lutheran Home and Retirement Center was formed in 1972 by a group of representatives from local Lutheran churches in the Youngstown/Warren area of Ohio. Between 1972 and 1974 several parcels of property and buildings were acquired and became what is now referred to as the original site of Shepherd of the Valley in Niles, Ohio. Today, Shepherd of the Valley Lutheran Retirement Services, Inc., a not-for-profit organization, is comprised of four locations and offers a continuum of care, including independent, congregate and assisted living, as well as skilled nursing and rehab to over 700 older residents at four sites.

Additionally, Shepherd of the Valley offers home health care and other community programming.

The four skilled nursing facilities are all situated in the north east part of Ohio and have 57, 80, 79, and 32 beds respectively. Each of these facilities are located on life plan (or Continuing Care Retirement Communities) campuses except for one. Shepherd of the Valley joined the ItcGAIN pilot project at the request of their CEO and in the spirit of their ongoing pursuit of opportunities to improve and expand services. All four Shepherd of the Valley nursing facilities participated in this project.

Eliza Bryant

Founded in 1896 by Eliza Simmons Bryant as the Cleveland Home for Aged Colored People, today Eliza Bryant Village stands as the oldest continually operating African American-founded long-term care facility in the United States, serving more than 1,200 residents and program participants annually with more than 260 employees and nearly 300 volunteers.

Eliza Bryant Village provides services for seniors along the continuum of care with skilled nursing with memory-care and rehabilitation as well as on-site dialysis care, an adult day care and senior outreach program that includes transportation and nutritious meals, and affordable independent senior housing. Home care is available to Eliza Bryant Village seniors as well as to aging neighbors. Eliza Bryant Village is located on 17 acres in the heart of Cleveland, Ohio's Hough neighborhood; the same neighborhood as its original 1896 site. The 158-bed nursing facility is located on the same campus as the three independent senior living buildings.

They are one of only six such Critical Access Facilities in the state, located in urban inner-city neighborhoods and serving largely minority communities. A high proportion of residents are identified as indigent and chronically ill, often because they have lacked access to good health care all their lives.

Eliza Bryant joined the pilot project because, like LeadingAge Ohio, they want 'to create a safe and strong workforce to create a better, safer and healthy place for aging adults.' They believe it is important to invest in their talented, motivated, and compassionate workforce. The Board and Executive Team, COO, Administrator, and DON engaged in this pilot to continue to cultivate a culture of caring staff who understand the value of continuing education and will always serve the needs of seniors with dignity and respect.

Implementation: Challenges and Facilitators

There is a lot to learn from the implementation of this pilot project. Though not yet an evidenced-based program, the ItcGAIN collaborative team identified components of implementation science that could help understand both challenges and facilitators of implementation – not only implementation of the distance education modules, but of the subsequent step of changing the clinical decision making and behavior of nurses, and ideally, the health outcomes of residents: namely, whether or not someone is transferred to the hospital. Implementation Science is “the scientific study of methods to promote the systematic uptake of research findings and other EBPs into routine practice, and hence, to improve the quality and effectiveness of health services” (Bauer et al., 2015, p. 1).

The use of implementation science to help guide this evaluation requires that we focus not only on the end-goal or the health outcomes, but on the process leading to those as well. A number of studies have reported that an evidence-based practice can take an average of 17 years to become a fully incorporated general practice in a health care setting (Balas & Bore, 2000; Grant, Green, & Mason, 2003; Morris, Wooding, & Grant, 2011) and that does not include the time it is being tested as an innovation. We know there are a number of contextual factors and factors related to the actors involved in the adoption of innovation (Wejnert, 2002). Many contextual factors such as high turnover and high workloads, attitudes, insufficient support from leadership and senior staff, communication and cooperation have been identified as challenges to implementation of innovation and to change within a nursing facility (as cited in Low et al., 2015). Having opinion leaders within the organization who are advocating for the adoption and implementation, who are championing the change are known to make a difference (Dearing et al., 2017). In addition, having infrastructure challenges, such as technological difficulties; opposing priorities; having a more traditional, versus innovative, culture; having time-related challenges; and misalignment with other workplace guidelines, policies, and frameworks, could impact implementation of not only the educational component of the intervention, but of implementation of the new knowledge as well (as cited in Low et al., 2015; Tworek, 2019).

These are all challenges that were potentially at play during this pilot project. Early conversations with Directors of Nursing, for example, highlighted some difficulty with regards to time and the availability of nurses to ‘get off the floor’ to complete the modules. In some cases, having continuous access to devices (e.g. desktop computers, tablets, etc.) was a

challenge, and others expressed some concern that they were not accomplished users of technology and had never participated in distance learning before. In some facilities, leaders were encouraging their staff to complete the modules before they themselves found time to complete them. The ideas of “competence” and “confidence” came up during these conversations as well. Confidence, being something that can be gained by practice and/or by receiving affirmation from a supervisor or leader, among other things, is a piece of process implementation that can be difficult to measure and easy to dismiss when implementing an education program that is meant to produce behavior change. In this particular instance, the nurse manager reported there were discussions post-module completion and “it does seem to be resonating!” This indicates that there was specific follow up with nurses who completed the learning, even though that was not a specific part of this pilot project’s protocol. Where this occurred, it was likely a facilitator of the behavior change step in the process. And while that is positive, even when considering all of the complex implementation factors, we also know that changing staff behavior does not necessarily improve resident outcomes in nursing homes (Low et al, 2015). Research has confirmed that improving knowledge does not imply behavior change (McCluskey & Lovarino, 2005), highlighting the great challenge it can be to impact something like hospitalization, when there are expectations of change at multiple phases.

One of these phases, known as knowledge translation (KT) is commonly accepted as a foundation for the successful integration of new research and evidence-based practice into complex healthcare environments such as hospitals and long-term care facilities (Hudson, Gervais, & Hunt, 2014). And, in multi-part interventions such as this one, KT is only one step. In gaining the knowledge, one must then be supported and encouraged to practice the new behavior and to try new things. This might include debriefing conversations about the on-line learning modules, ensuring the proper supplies and equipment are in place to try the new skills, and providing hands-on supervision to those willing to adopt an innovation or simply try something they have never tried before. It is said it takes at least two months for something to become a habit, personally; this time period is likely longer when considering a professional skill or changing the way you have been doing something for many years. According to ‘diffusion of innovation’ models, an individual actor will weigh the cost/benefit of adoption when considering change (Wejnert, 2002). In this project, one cost to trying something newly learned from a module (or adopting innovation) might be that it does not work well and one is embarrassed, or worse,

causes harm to a resident. Of course, a benefit may be that trying the new technique improves the mood or well-being of a resident, or ideally, keeps them from having to be transported to the hospital. These benefits can also be facilitators to adoption, not too different from incentives that act as facilitators, like the possibility of winning a gift card if one completes all modules in a given time period. Facility leadership and the ItcGAIN Program team considered these and other facilitators in the formative evaluation discussions.

Evaluation: Challenges and Facilitators

As with all pilot projects, there was some difficulty in regard to evaluation planning and data collection. First, the evaluator was not a part of the project planning from the beginning. It was not clear early on if an outside evaluator would be required or how involved that individual might need to be during the preliminary planning of the project. This left a gap in the initial evaluation plans. At first, there was lack of understanding related to the outcomes measures that were already being collected and whether or not data would be available from each facility to allow for an “apples-to-apples” comparison. It was also unclear how accessible data would be and how that data would be shared with the evaluation team in an ethical and HIPAA-compliant way. Given all the questions within facilities and lack of awareness regarding data collection practices, there was also some question of confidence in the data being collected. For example, data input may vary from nurse to nurse. One administrator may consider all hospital transfers “unplanned” and another may look more carefully at the context in making that determination.

An immediate facilitator, however, was the discovery that all participating nursing facilities were using, in at least some capacity – though potentially a limited capacity – the INTERACT Safely Reduce Hospitalization Tracking Tool. Because this tool provided ‘CMS approved’ 30-day readmission rate calculations automatically, it was an easy decision to adopt it as the primary data collection tool for the outcome measures. Most facilities, however, had only one employee who was particularly familiar with the INTERACT tool. When there were questions, if that person was out sick, on vacation, or if that position was recently vacated, challenges and time delays occurred. Generally, nurse managers, administrators, and other leaders did not have good working knowledge of the tool, even when it had been in use at the facilities for a considerable amount of time. In some cases, it took many months for facilities to send the required data. In some instances when data

appeared to be fully intact and useable, it was not until further investigation and preliminary analysis that discrepancies were found. Some challenges arose with the de-identification of the data despite INTERACT providing specific instructions on how to complete this de-identification. Some experienced some sort of glitch in the tool that resulted in missing and inconsistent data files. Even with the de-identified files, some facilities took extra precautions by utilizing services such as New Zix secure email messaging to transmit their data to the team. These options were additional facilitators during the data collection period.

A unique circumstance occurred during the course of the project that led the team to make a decision not to include outcome measures for Facility G. As mentioned in the description, at the start of the project, there were 42 skilled nursing facility beds, which were then reduced to 12 beds in the middle of the post-data collection time period. With such a drastic change in bed count, it no longer seemed appropriate to consider those numbers for this evaluation purpose. The pre- and post-test scores and comments from Facility G nursing staff are still included in the module-related portion of evaluation. The team believes the change in bed count would not have impacted those education activities which had already taken place earlier in the project.

Data Analysis and Results

The primary goals of the pilot were to reduce hospital re-admission rates and preventable emergency room visits. As described, acquiring measurable outcome data was a challenge. To examine hospital readmission rates, pilot facilities provided the INTERACT 30-day rehospitalization rates for the six months prior to the educational intervention period and six months after the intervention period: September 2017 – February 2018 and July 2018 – December 2018, respectively. The table below shows the pre- and post-rates by facility, by resident type. 30-days are reported as a percentage. Where the cell is green, the rate showed positive movement, a decrease; when the cell is red, the rate showed negative movement, an increase. This is true throughout the remainder of the report. No color in the adjacent, post-cell, shows the rate was static. These data are primarily descriptive and include the percent change from the pre to post-intervention time period. Information is reported by facility in alphabetical order.

Table 1. 30-day Readmission Rates, by facility for Post-Acute Care, Chronic Long-Term Care, and All Residents (Percentage)

	Post-Acute			Chronic LTC			All		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Facility A	11.5	8.3	-27.8	6.3	5.6	-11.1	11.3	7.8	-31
Facility B	13.0	17.9	+37.7	9.3	13.3	+43	10.6	15.8	+49
Facility C	13.9	20.5	+47.5	6.7	24.2	+261	13.3	21.5	+61.7
Facility D	14.1	13.8	-2.1	21.8	8.7	-60.1	15.7	13.5	-14
Facility E	20.1	12.7	-36.8	22.2	14.4	-35.1	18.1	12.8	-29.3
Facility F	17.6	14.8	-15.9	10.8	5.6	-48.1	18.2	14.0	-23.1

Table 2. Number of Emergency Department Only Transfers, by facility

	ED only visits		
	Pre	Post	Percent Change
Facility A	17	16	-5.9%
Facility B	7	17	142.9%
Facility C	6	9	50%
Facility D	19	21	10.5%
Facility E	23	19	-17.4%
Facility F	7	4	-42.9%

Limitations in data collection and missing data in the INTERACT Safely Reduce Hospitalizations Tracking Tool did not allow for ED only visit rates to be calculated for the pre and post-intervention period. Alternatively, we examined number of transfers that resulted in ED only visits and were able to do so across the board for all facilities. Regarding the number of ED only visits, percent change from the pre to post-intervention period was calculated for each facility, as indicated in Table 2 above.

The INTERACT and PCC data were used to identify the outcomes of hospital transfers: admitted, inpatient; admitted for observation; ED only visit; or some other or unknown outcome was recorded. This information is presented by facility, in some cases with other unique pieces of data included, which varied based on what was provided to the evaluation team. For example, some facilities put particular thought into if the decision to transfer was or was not driven primarily by the clinician and report that data to the evaluation team. Or in some cases, the clinician may have felt confident to manage a health episode within the facility, but the family or resident may have insisted on the transfer.

Tables below indicate Admissions by Outcomes and Number of Individuals Transferred. Data is reported by facility in alphabetical order (within SOV facilities).

Table 3. Facility A	Pre	Post
	Total (family/resident insisted on transfer)	
Admitted, Inpatient	65 (6)	54 (6)
Admitted, Observation	22 (4)	8 (1)
ED Visit Only	17 (2)	16 (0)
Total	104	78

* All unplanned

At Facility A, all transfers included in the INTERACT tool were unplanned transfers.

Table 4. Facility B	Pre	Post
	Total (Transfer not primarily clinician driven)	
Admitted, Inpatient	50 (8)	41 (11)
Admitted, Observation	8 (2)	6 (3)
ED Visit Only	7 (3)	17 (9)
Other	8 (2)	9 (7)
Total	73	73

Table 5. Facility D	Pre	Post
	Total (Planned)	
Admitted, Inpatient	62 (2)	46 (1)
Admitted, Observation	2 (1)	1 (0)
ED Visit Only	19 (0)	21 (1)
Other	4 (2)	6 (2)
Total	87	74

Table 6. Facility E	Pre	Post
	Total (Planned)	
Admitted, Inpatient	35 (2)	29 (2)
Admitted, Observation	1 (0)	2 (0)
ED Visit Only	23 (0)	19 (0)
Other	2 (1)	4 (3)
Total	61	54

Table 7. Facility F	Pre	Post
	Total (Planned)	
Admitted, Inpatient	21 (1)	24 (2)
Admitted, Observation	1 (0)	0 (0)
ED Visit Only	7 (0)	4 (1)
Other	3 (0)	1 (0)
Total	32	29

Table 8. Facility C	Pre	Post
	Total (Planned)	
Admitted, Inpatient	23 (2)	26 (3)
Admitted, Observation	1 (0)	2 (0)
ED Visit Only	6 (0)	9 (0)
Other	2 (0)	5 (2)
Total	32 (2)	42 (5)

Module Pre-Post Test Data and Module Evaluation Data

The eight component modules of the ItcGAIN Program were developed to provide continuing education to nurses on topics that likely influence care and potentially divert residents from a preventable hospital visit. In order to determine if nurses were gaining knowledge or skills, and/or changing their attitudes and/or beliefs, pre-post tests were administered with each module; they were required of all pilot facility participants.

A paired-samples t-test was conducted to compare the results of the pre-test vs post-test scores for the modules. The Real Statistics Resource Pack software (Release 5.4) Copyright (2013 – 2018) Charles Zaiontz. www.real-

statistics.com was utilized. Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$) were employed, and effect size was measured with Cramer's V (Kim, 2017). Effect size is considered to be a more practical, real world measure versus a classical significance test (such as the t-test). It can give us an idea how important or impactful a difference is in a way that statistical significance does not.

The following is a summary of the results of an overall review of the eight modules. Paired-samples t-test comparison of the pre- vs post-test scores for each module indicated that there was a significant difference in pre- vs post-test scores, overall. The effect size for the analysis was on par with Cohen's (1988) convention for a large effect. In other words, the magnitude of difference between the pre-test and post-test scores for each module was large.

The results of individual item analysis were variable. Many of the individual items did not demonstrate a significant difference between the pre- and post-test scores for that particular item. For those items that did show a significant difference, many had a small effect size suggesting that more study is needed to determine if the results are truly meaningful. The remaining items indicated that there was both a significant and large effect between the pre- vs post-test scores suggesting a true gain in knowledge as a result of the education. The detail can be found in individual module item analysis.

For each module the following are reported: 1) a bar graph is presented to show the total percentage of correct pre-post-test responses per item, with significance and effect size reported; 2) a table that shows pre-post-test scores by organization and by level of education (e.g. LPN, RN, etc.); 3) a graph demonstrating level of agreement in meeting learning objectives; and 4) the items that comprised the pre-post-test. Details for all modules are included in the Appendix, but below the COPD module is highlighted to illustrate a typical ItcGAIN Program module.

COPD Module:

Completions: 261

Pre- vs Post-Test Scores:

A paired-samples t-test was conducted to compare the results of the pre- vs post-assessment scores for the module. There was a significant difference in the pretest scores ($M=0.69$, $SD=0.13$) and post-test scores ($M=0.89$,

SD=0.06), $t(260) = -22.24$, $p < 0.001$. The effect size for this analysis ($d=0.81$) was on par with Cohen's (1988) convention for a large effect ($d=0.80$) (Salkind, 2010).

Item Analysis:

- The result for Item 2 suggests that the intervention provided no new knowledge gained for this item (Figure 1).
- The results for Items 1, 4, 6, 7, 10, 11 and 12 indicate that while there is a significant difference between the pre- and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- Results for Items 3 and 9 suggest that the intervention had a significant and measurable effect on the results (Figure 1).
- The result for Item 5 and 8 suggests that the intervention had both a significant and large effect on the result (Figure 1)

Scores by Level of Education:

Pre- and post-test scores increased for all levels of education from LPN to NP/PhD, indicating that this distance education program is useful across levels of education. We know that many nurses working in long-term care have not necessarily received focused geriatric education, therefore this level of detail is clearly useful for many nurses. This was a question in the beginning of the program and a concern voiced by Directors of Nursing, specifically, so it was added to the evaluation at a later time.

COPD Pre-Post Assessment Items:

1. What might a patient experiencing an exacerbation of COPD complain of?

- A. - Shortness of breath
- B. - Cold-like symptoms
- C. - Cough
- D. - Increased sputum

E. - All of the above.

2. COPD is curable.

T. - True

F. - False

3. The main risk factor for COPD is air pollution.

T. - True

F. - False

4. Patients with emphysema will often present with:

A. - A fever of over 100 degrees.

B. - Barrel chest and pursed lip breathing

C. - Increased respiratory rate, chest symmetry

D. - Constant cough with hyper secretion of mucous

5. The diagnosis of COPD is confirmed by spirometry.

T. - True

F. - False

6. The goal of pharmacological treatment for COPD is

A. - Reduce COPD symptoms

B. - Reduce the frequency and severity of exacerbations

C. - Improve health status and exercise tolerance

D. - All of the above

7. A beta agonist relaxes the smooth muscles of the airways, widening the airways, and making it easier to breathe. It may be short acting or long lasting.

T. - True

F. - False

8. Your long-term care COPD patient will probably be on steroids for the rest of their life.

T. - True

F. - False

9. _____ has the greatest capacity to influence the natural progression of COPD.

A. - Medication compliance

B. - Prophylactic antibiotic therapy

C. - Providing education to the patient and family pertaining to the disease process, its treatment, and prevention.

D. - Smoking cessation

10. Mr. J is admitted to your facility after hospitalization for a COPD exacerbation. His medication list indicates he has been on oral prednisone for one year. You know that oral steroids are the most beneficial because of decreased side effects.

T. - True

F. - False

11. Mr. J is a 68-year-old male transferred from the hospital to your facility after an exacerbation of COPD for rehab. He is two days post-admission and has been doing well with therapy. This morning he is complaining of shortness of breath, increased sputum production changing to a green color, cough, and cold-like symptoms. His shortness of breath increases when he attempts physical therapy. 102/64, P. 104, R. 28, temp 98.6. Breath sounds, bilateral wheezing, Pulse Ox 88%. He has a 62-pack year history and continues to smoke ½ pack of cigarettes a day. After assessing the patient, your first action is:

A. - Call the patient's family

B. - Call an ambulance and have the patient transported to the hospital

C. - Give the patient Tylenol from the standing orders, get a UA, and tell the MA to check his vital signs in one hour.

D. - Prepare information using an SBAR format to report to the provider.

12. Mr. J is a 68-year-old male transferred from the hospital to your facility after an exacerbation of COPD for rehab. He is two days post-admission and has been doing well with therapy. This morning he is complaining of shortness of breath, increased sputum production changing to a green color, cough, and cold-like symptoms. His shortness of breath increases when he attempts physical therapy. 102/64, P. 104, R. 28, temp 98.6. Breath sounds, bilateral wheezing,

Pulse Ox 88%. He has a 62-pack year history and continues to smoke ½ pack of cigarettes a day. In what order would you present the following information when reporting to the provider? 1. Elevated HOB, Bilateral Wheezing 2. Shortness of breath, increased sputum production, cough and cold-like symptoms 3. Chest x-ray to rule out pneumonia vs AECOPD, supplemental O2, antibiotics, smoking cessation, counseling 4. Patient is s/p hospital admission for exacerbation of COPD

A. - 4, 2, 1, 3

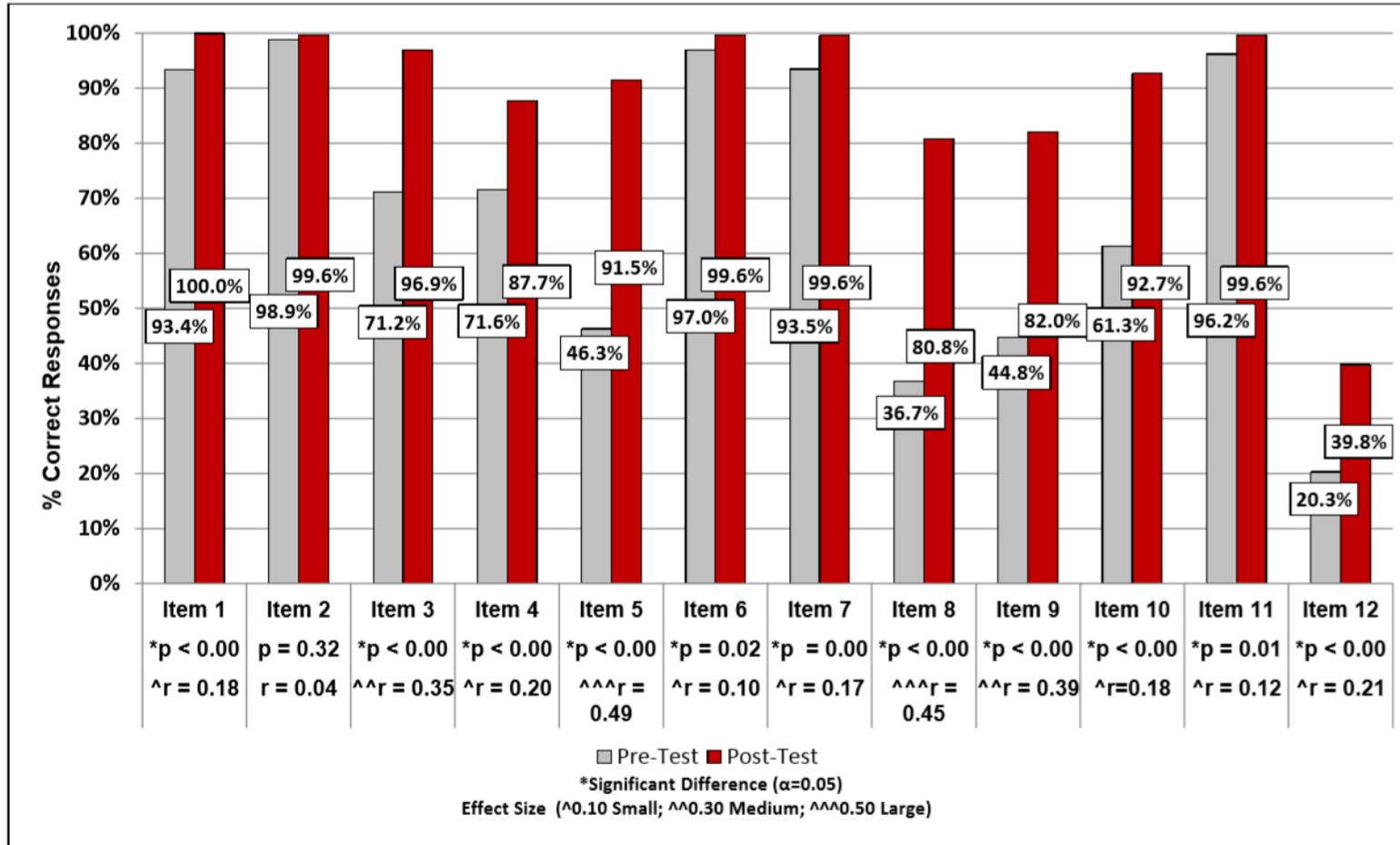
B. - 3, 4, 2, 1

C. - 2, 4, 1, 3

D. - 4, 1, 2, 3

COPD Module Summary

Figure 1: Results Summary Pre-Test vs Post-Test COPD

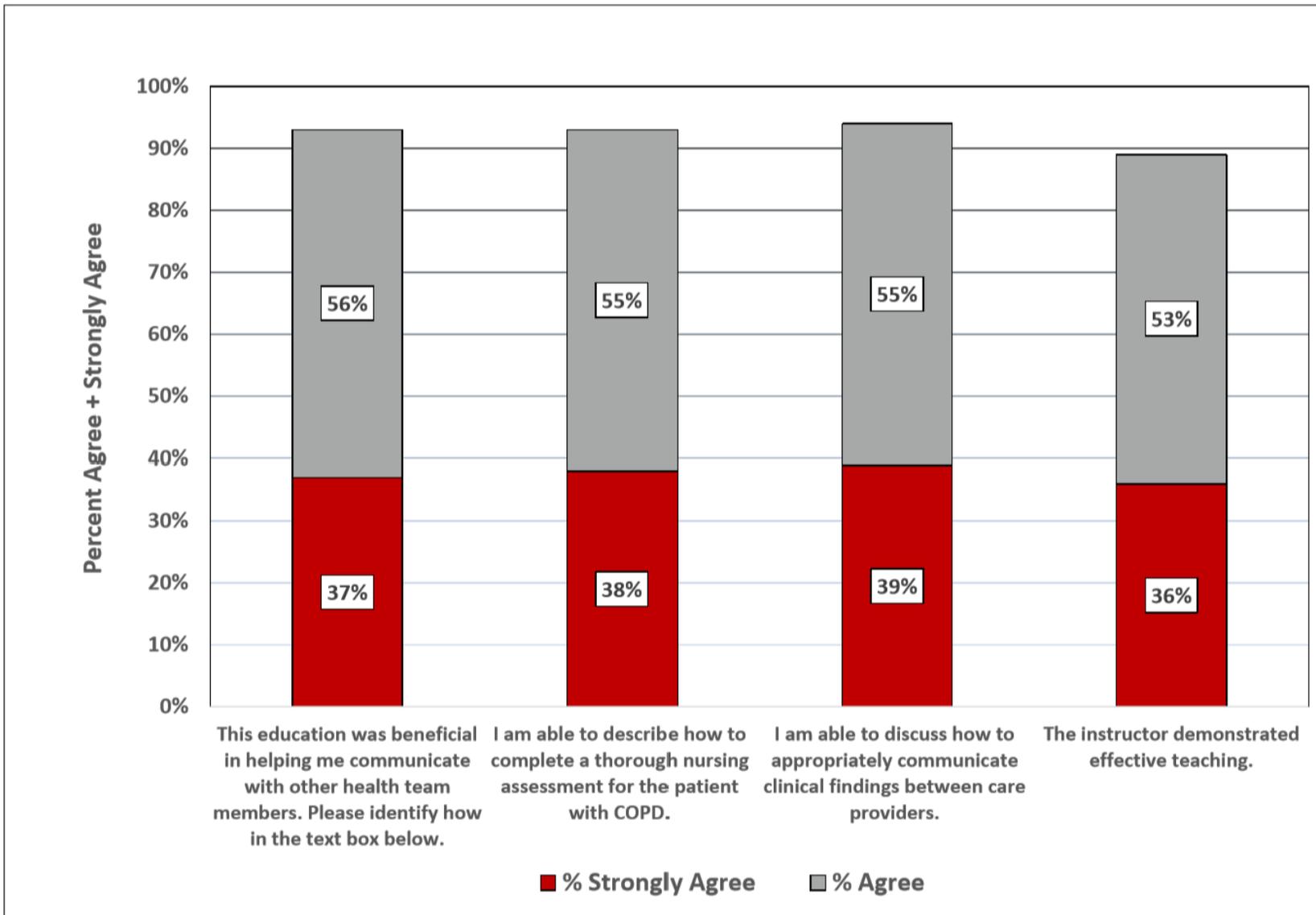


Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

COPD Module Summary

Location	Level of Education	Results of Pre- vs Post-Test						Total Count
		Number of Scores Decreased		Number of Scores Increased		Number of No Change in Score		
		Count	%	Count	%	Count	%	
Bethany Village n=103	LPN	2	3.1%	57	87.7%	6	17.1%	65
	RN-AD			18	85.7%	3	14.2%	21
	RN-BSN/Diploma			14	87.5%	2	12.5%	16
	NP-PhD/Masters					1	100%	1
	TOTAL	2	1.9%	89	86.4%	12	11.7%	103
Eliza Bryant n=47	LPN			32	94.1%	2	5.9%	34
	RN-AD			7	87.5%	1	12.5%	8
	RN-BSN			1	50.0%	1	50.0%	2
	NP-PhD/Masters			3	100.0%			3
	TOTAL	0	0%	43	91.5%	4	8.5%	47
Kendal of Oberlin n=27	LPN	1	7.1%	13	92.9%			14
	RN-AD			3	60.0%	2	40.0%	5
	RN-BSN/Diploma			7	100.0%	0		7
	NP-PhD/Masters					1	100.0%	1
	TOTAL	1	3.9%	23	85.1%	3	11.0%	27
Shepherd of the Valley n=84	LPN	2	4.3%	39	83.0%	6	12.8%	47
	RN-AD	1	5.0%	16	80.0%	3	15.0%	20
	RN-BSN/Diploma	1	5.9%	14	82.4%	2	11.8%	17
	Not Indicated	N/A		N/A		N/A		N/A
	TOTAL	4	4.8%	69	82.1%	11	13.1%	84
All Locations n=261	LPN	5	3.1%	141	88.1%	14	8.8%	160
	RN-AD	1	1.9%	44	81.5%	9	16.7%	54
	RN-BSN/Diploma	1	2.3%	36	85.7%	5	11.9%	42
	NP-PhD/Masters			3	60.0%	2	40.0%	5
	TOTAL	7	2.7%	224	85.8%	30	11.5%	261

Evaluation of Learning Outcomes



In some cases, the data taught us that questions were either not challenging enough, that the nurses were already very familiar with a particular concept, or that authors were not focused on the right material, etc. In other words, there is something that needs to be modified either in the lesson or in the pre- and post-test. For example, one true/false question in the COPD module has nearly 100% of participants answering it correctly both at pre- and post-test. This kind of information can be used formatively to make changes and improve the ItcGAIN Program.

Following the completion of each module post-test, participants were required to complete a brief evaluation of the module, the results of which can be used to further promote, improve, or enrich the program. Overwhelmingly, participants evaluated the modules as effective in increasing their knowledge, skills, or beliefs.

One indicator of learning often examined is the individual learner's self-evaluation of whether or not the learning objectives were met. Here, all modules showed strong evidence the learning outcomes were met. In all cases, nearly all learners either Strongly Agreed or Agreed that learning outcomes were met. For each module, these included:

- Will help me communicate with health team members;
- I can explain communication strategies that impact patient outcomes;
- The instructor demonstrated effective teaching.

- Areas of change of behavior as a result of completing the module varied from improved patient care, improved communications, improved assessment of symptoms, and improved efficiency in daily tasks. For example, nurses shared:
 - "I feel that I have a better understanding of how to explain heart failure to my patients."
 - "Will be able to communicate assessment findings better for recommendations."
 - "[I can] perform a more thorough assessment and use same terminology as other team members."
 - "I will focus on more accurate vital signs for the patient with pneumonia, provide more adequate hydration and help reduce work load and provide rest and make sure antibiotics are given on time to help cure infection process and promote clapping the lung areas to help loosen up secretions and mucous from lungs."

- Participants reported a number of different assessment skills gained as a result of this education.
 - “I learned the difference between the types of UTIs and what S/S to look for.”
 - “Better observation skills to use when working with a resident that may have CHF.”
 - “Make sure the SBAR is complete with every resident who has a change in status to better communicate with MD.”
 - “If your patient has a CRB score of 1-2 you shouldn’t call the squad for transport to the hospital.”

- Participants provided valuable feedback and suggestions for improvement of the modules. Areas of particular note include:
 - Additional or improved content, especially interactive content or content with alternative modes of engagement (e.g. video, audio).
 - The addition of more case studies to practice developing skills and knowledge.
 - Improved format including downloadable and printable content.

All evaluation comments can be found in the Appendix following the pre-posttest information for each individual module.

Key Results Discussion and Implications

It is important to note that most of the facilities enrolled in this pilot project were already below the national average of approximately 20%-25% and below the CMS Ohio Target Benchmark of 21.7% for 30-day Readmission Rates. The lowest rate for a pilot facility was for Chronic Long-Term Care at 6.3%, and the highest, which was in the post-period, was 24.2%, also for Chronic Long-Term Care (non-Medicare). These facilities are already high performers and doing many things well, likely evidenced by their willingness to participate in the pilot project in the first place. During the pre-intervention period, the average 30-day Readmission Rates for all pilot facilities for the three areas identified in the INTERACT tool were as follows: Post-Acute, 15%; Chronic Long-Term Care, 12.8%; and for all residents, 14.5%. These averages all went down in the post-test period, though very slightly. This is not to suggest that the intervention was the sole reason for this decrease; this was a pilot project and not a research project attempting

to control for any number of confounding variables. The fact that four of the six facilities, (when examining the four Shepherd of the Valley facilities separately) had a decrease in 30-day Readmission Rates is, however, quite promising. With the exception of two facilities, all other facilities had decreases in all three resident population areas from pre to post-test period. The difference from pre to post period decreases were small, but in two facilities, they were greater than 7% and in one as high as 13.1%. This is better examined by looking at percent change, where there was a range of -14% to -31% for facilities which showed improvement: Facility D (-14%), Facility F (-23.1%), Facility E (-29.3), and Facility A (31%). While there are some additional forces at play, given the high rates of knowledge gained by nurses as evidenced by the pre- and post-test scores and nurses' self-identified behavior change intentions, it is certainly reasonable to believe the ItcGAIN Program is making a difference in some facilities' readmission rates.

In spending time talking with DONs, nurse managers, MDS nurses, and others involved in the data collection, it is easy to see how a small number of choices made by residents or family members, or one bad week during flu season, can make a big difference in readmission rates. Although the data elements reported by each facility were not identical, there were a few items of note. There was positive movement at three of the six facilities regarding ED only visits: Facility A (-5.9%), Facility E (-17.4%), and Facility F (-42.9%). It should be noted these percent changes are being reported for small numbers of transfers. Emergency Department only visits for each facility during both pre and post time periods ranged between 4 to 23 transfers.

Again, limitations of data collection and missing data, specifically in the INTERACT tool, created data analysis challenges. There are also contextual factors that impact this data, as with all hospital transfers. At Facility A, there were a small number of cases where the resident or family insisted on the hospital transfer, and when that happened, more often than not the individual was admitted either inpatient or for observation. The advocacy by a family member may be impacting that particular outcome. Similarly, Facility B reported a large number of transfers, with 41% of the transfers in the post-period coded as primarily the result of something other than the "clinician insisting" on the transfer. [Note: some facilities did not report on this particular variable.] The "other" transfers are potentially worth investigating as 41% of all transfers (30 individual transfers) can make a big impact not only on individual health, but on the overall 30-day readmission rate of the facility as well. Four of the six facilities showed declines in individuals admitted, inpatient: Facility A, Facility B, Facility D, and Facility

E. Over all categories, four of six reduced total transfers (Facility A, Facility D, Facility E, and Facility F), and Facility B remained the same.

The promising pilot evaluation results are an indicator that the ItcGAIN Program should continue to be used and evaluated in additional nursing and long-term care facilities. In addition, more investigation could be done with the original pilot facilities to try to tease out other things that were happening in the facilities at the time of the pilot project. For instance, anecdotally we observed changes in leadership, a high amount of turnover among front line staff, facility infrastructure changes taking place, new physicians or nurse practitioners associated with the SNF, and so on. A more systematic review of these changes, i.e. a deeper dive into the circumstances around the decline in Readmission Rates, could provide further explanation and/or further tie the decline to the ItcGAIN Program. Implementation Science and Knowledge Translation tell us that we should provide continuous monitoring and feedback as part of promoting behavior change and innovation adoption.

Conclusions and Future Recommendations

Pulling apart and distinguishing effectiveness of implementation from the effectiveness of intervention/treatment is critical for pilot projects such as ItcGAIN (Proctor et al., 2010) -- doing so can impact how the intervention is refined and revised, how it is scaled up and implemented in other settings. While no pilot evaluation did not result in causal evidence that the ItcGAIN Program reduces 30-day Readmission Rates or ED visits, there is reason to be very optimistic that it can impact these important key indicators. The findings of the pilot evaluation indicate that nurses of varying educational levels, from LNPs to NPs, can and did learn new information and gain knowledge from the ItcGAIN Program, that they can identify individual behaviors and skills they now have knowledge to employ, and they also provided valuable feedback to improve the Program going forward. The learning outcomes measured indicate there is a need for additional education related to the topic areas of the ItcGAIN Program, and likely others. We know that it is possible to gain employment in nursing facilities without having received specialized education or training in geriatrics, the care of older adults, or in the specific syndromes and diagnoses that are likely to send nursing home residents to the hospital, therefore this type of very targeted continuing education and professional development is warranted.

Plans should be made to continue to evaluate the ItcGAIN program, if at all possible, in the same ways, and potentially to use comparison groups. This could be possible by finding comparable LeadingAge Ohio members to those who might plan to use the Program in the future and examining their 30-days Readmission Rates, and the like, for the same time periods. If these data are available, it would be a cost-effective way to learn more about the utility of the intervention. In addition, follow up with the original pilot sites is recommended. Nurses could be questioned about behavior change and look retroactively at the months following their participation in the ItcGAIN Program. Lines of inquiry should focus on whether or not they were willing to try to implement what they had learned in the Program, if leadership and management continued to foster a culture of innovation that allowed for trial and error and a willingness to do something new without fear of negative repercussions, and the importance of having a champion who continues to emphasize the program's value. Additionally, some form of secondary data analysis might be considered for one or two or more successful pilot facilities to further examine what the differences might have been to produce significantly lower rates and to investigate whether or not the low rates continue over the next several months and beyond. There is potential to work with existing staff to help learn how to examine some of the measures on their own, internally. A lack of understanding one's own data collection tools and how to utilize data for decision making and planning was evident to the evaluation team as they talked with key personnel at several nursing facilities. There is a wealth of information at the fingertips of leadership that is being underutilized, at best, and not examined at all in some cases. Data goes in, so to speak, but never comes out to be used as part of quality improvement or other initiatives.

The Program team should also continue to utilize the feedback from pilot testers in order to make improvements to the ItcGAIN Program. Some have already begun, which is only good news for those just starting the Program. It should be marketed widely to LeadingAge Ohio members and the successful pilot participants should tell their stories of success and share their facilitators.

LeadingAge Ohio and its collaborating partners (the Optimized Care Network, The Ohio State University College of Nursing, and the OSU Office of Geriatrics and Interprofessional Aging Studies), are grateful for the opportunity to conduct this exciting pilot project. Civil Monetary Penalty Funds made this work possible. We thank the Ohio Department of Medicaid and the Centers for Medicare and Medicaid Services for the grant funding and hope that others will not only provide the opportunity for the nursing

staff in their long-term care facilities to complete the ItcGAIN Program, but also recognize the value of ongoing education and professional development. We are excited to have demonstrated through this pilot project that geriatric-specific training truly does influence quality of life for the older adults who are most in need of responsive care.

Submitted by:

Kathryn Brod, President/CEO, LeadingAge Ohio, 614-545-9014,
kbrod@leadingageohio.org.

Prepared by:

Cynthia Dougherty, Director, Office of Geriatrics and Interprofessional Aging Studies, Ohio State University College of Medicine

Linda Mauger, Community Health and Aging Advisory, OCN ConnectedCare™

Kathryn Brod, President/CEO, LeadingAge Ohio

APPENDIX TO FOLLOW

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SBAR Communication Module Evaluation

- Average Time to Complete: 39 minutes
- Completions: 270
 - Bethany Village: 106
 - Eliza Bryant: 50
 - Kendal of Oberlin: 27
 - Shepherd Valley: 87
- Post-Test Count: 270
- Evaluation Count: 279 *varies with item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge and/or beliefs with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The results for Items 1, 2, 4, 5, and 8 (Table 1) suggest that the intervention provided no new knowledge gained. Item 10 results suggested no significant change in attitude or belief (Figure 1).
- The results for Items 3, 7, and 9 indicated that while there was a significant difference between the Pre and Post Test results, the effect size was negligible. More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- Of particular importance are the results for Item 3. The % correct responses decreased Pre Test → Post Test. Since significantly more people gave the incorrect response Post Test, this item as well as the content of the module, should be reviewed for clarity and accuracy.
- Item 6 indicated that the intervention had a significant and measurable effect on the results.

Pre- vs Post-Test Scores

- A paired-samples t-test was conducted to compare the results of the pre- vs post-assessment scores for the module. There was a significant difference in the pretest scores ($M=0.85$, $SD=0.63$) and post-test scores ($M=0.90$, $SD=0.50$), $t(269)=-22.24$, $p<0.001$. The effect size for this analysis ($d=0.81$) was on par with Cohen's (1988) convention for a large effect ($d=0.80$) (Salkind, 2010).

SBAR Communication Module Evaluation

Table 1. Assessment Items

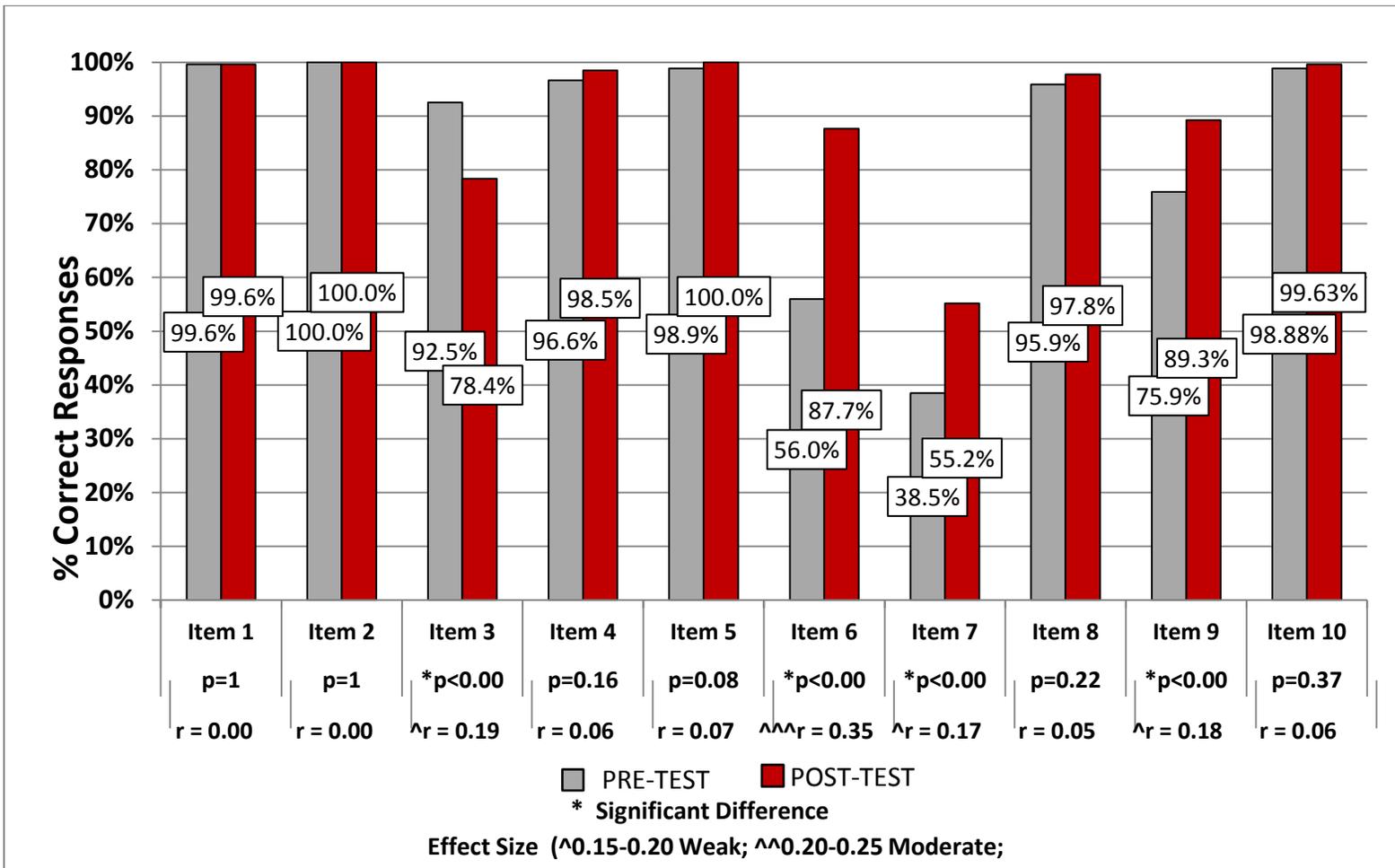
<p>Item 1: SBAR stands for:</p>	<p>Item 6: Identifying yourself and the resident, and providing a brief report of physical assessment are part of which component of the SBAR?</p>
<p>Item 2: The SBAR Situational Briefing Model is one proven approach to facilitating effective communications between team members.</p>	<p>Item 7: The CUS strategy is a means of communicating about secondary situations that do not require immediate attention.</p>
<p>Item 3: Reporting on exam findings and severity of the condition(s) is part of the Assessment portion of the SBAR Communication Strategy.</p>	<p>Item 8: When using the SBAR communication strategy, you should review the chart and complete every section of the SBAR tool before calling/communicating, speak clearly, and document the SBAR in progress notes.</p>
<p>Item 4: Which of the following can be an outcome of ineffective team communications?</p>	<p>Item 9: Providing information on the resident's medical history, medications and vital signs are part of which component of the SBAR?</p>
<p>Item 5: The SBAR standardizes communication and sets clear expectations for all participants.</p>	<p>Item 10: Understanding the common causes of transfers, admissions and readmissions is an important component of communications, quality improvement and staff training.</p>

Item: Assessment of Knowledge

Item: Assessment of Attitude

SBAR Communication Module Evaluation

Figure 1 Result Summary: % Correct SBAR Pre-Test vs Post-Test



Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V.

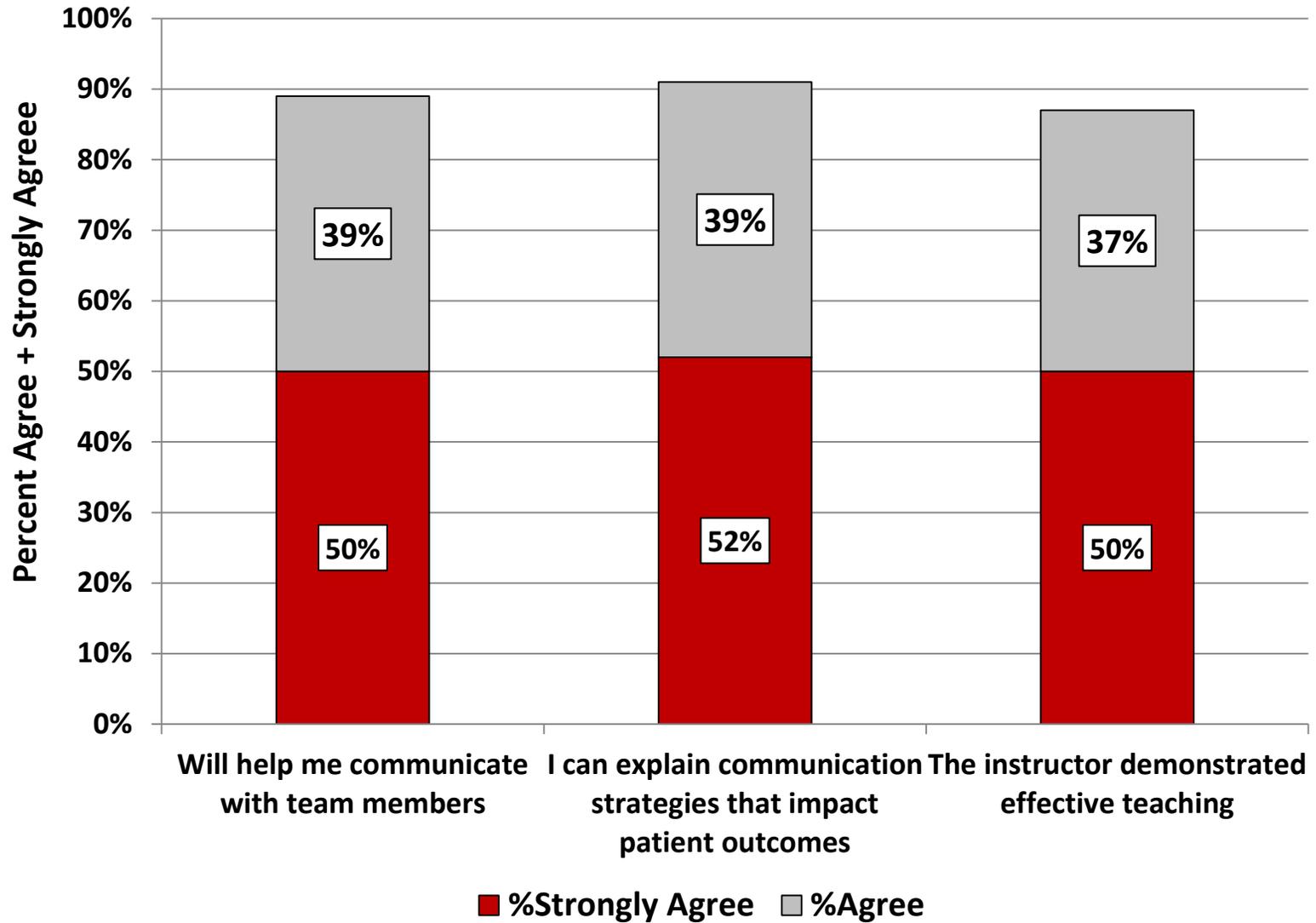
SBAR Communication Module Evaluation

SBAR Results of Pre Test vs Post Test Results by Location and Level of Education

Location	Level of Education	Results of Pre vs Post Test						
		Number of Scores Decreased		Number of Scores Increased		Number of No Change in Score		Total Count
		Count	%	Count	%	Count	%	Count
Bethany Village n=106	LPN	10	14.9%	33	49.3%	24	35.8%	67
	RN-AD	6	27.2%	8	36.4%	8	36.%	22
	RN-BSN/Diploma	2	12.5%	5	31.2%	9	56.3%	16
	NP-PhD/Masters					1	100%	1
	TOTAL	18	16.9%	46	43.4%	42	39.7%	106
Eliza Bryant n=50	LPN	4	11.1%	18	50%	14	38.9%	36
	RN-AD	1	12.58%	6	75.0%	1	12.5%	8
	RN-BSN	1	33.3%			2	66.6%	3
	NP-PhD/Masters			1	33.3%	2	66.6%	3
	TOTAL	6	12%	25	50%	19	38%	50
Kendal of Oberlin n=27	LPN	2	14.3%	7	50.0%	5	35.7%	14
	RN-AD	1	20.0%	1	20.0%	3	60.0%	5
	RN-BSN/Diploma	2	28.6%	3	42.9%	2	28.6%	7
	NP-PhD/Masters	1	100%					1
	TOTAL	6	22.2%	11	40.7%	10	37.1%	27
Shepherd of the Valley n=87	LPN	14	28.0%	21	43.0%	15	30.0%	50
	RN-AD	5	25.0%	7	35.0%	8	40.0%	20
	RN-BSN/Diploma	3	18.8%	7	43.8%	6	37.5%	16
	Not Indicated			1	100%			1
	TOTAL	22	25.3%	376	41.4%	29	33.3%	87
All Locations n=270	LPN	30	18.0%	79	47.3%	58	34.7%	167
	RN-AD	13	23.6%	22	40.0%	20	36.4%	55
	RN-BSN/Diploma	8	19.0%	15	35.5%	19	45.2%	42
	NP-PhD/Masters	1	16.7%	2	33.3%	3	50.0%	6
	TOTAL	52	19.3%	118	43.7%	100	37.0%	270

SBAR Communication Module Evaluation

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

SBAR	THEME	COMMENTS
6	Comprehension	will help get a better understanding about the resident situation help figure out the situation it will give me a clearer understanding of whats going on
4	Patient Care	Making sure the SBAR is completed with every res who has a change in status Be more proactive at the onset of symptoms A more thorough investigation [...] Better able to implement the nursing process with colleagues in helping resident return to optimal help
26	Communication	It will help me to be better prepared for communications with staff. This method allows for information exchanged on a client to be a much smoother process I will communicate my findings with the STNA [...] providing a more effective communication to MDs, ER, PA, NP, Patient and family member Encourage other staff to complete SBAR Encourage staff to always report any changes in residents
0	Call 911	
6	Assessment	I will be sure to utilize the tool completely prior to notifying physicians of patient changes in condition Able to paint a picture of the situation This education will help me with assessment and communication with other caregivers. Perform a more thorough assessment and use same terminology as other team members.
24	Efficiency	Will be more organized and clear I will take my time, read, and go over what I have read I will be efficient when completing tool Not to be so upset when filling out the SBAR. Being more proactive at the onset of symptoms
3	Not Applicable	
206	No Response	
4	Out of Context/Indeterminate	It was to the point and effective. Outcome will be good The information was very thorough and to the point. THOUGHTFULLY
0	Will not change	
279	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

SBAR	THEME	SAMPLE COMMENTS
96	Communication	Not afraid to make recommendations SBAR is an effective way of communicating an assessment of a patient to a physician Utilizing SBAR to communicate essential information to make sound clinical decisions Clarify Dr. order by repeating it back. CUS tool. This was a new approach that I was unfamiliar with and did not encounter in my past experience.
44	Assessment	ISBAR- You should give a brief introduction of you, the resident and mini assessment of your concerns to start the communication process SBAR assessment Providing more detailed background of resident One new assessment skill that I have learned from this module is to repeat the orders back to the physician.
10	Will not change/Will Not Use	SBAR has been taught extensively in nursing school, no new information presented. nothing new, already familiar with them I do not currently use SBAR as part of my documentation to the process is new to me. I more accustomed to SOAP notes or narratives.
81	Comprehension	Knowing exactly the meaning and steps of the SBAR Knowing how important it is to have all your info research and ready for the medical staff you are working with understanding the background of a pt. to apply acute care situations Organizing thoughts prior to calling physician for change in condition Using the situation part of the SBAR will help you focus on a better assesment of the disease process and focus on better interventions for residents
10	Not Applicable	No actual assessment skills covered in this module none already familiar with sbar N/A
31	Out of Context/Indeterminate	The SBAR IS EFFECTIVE TO INSURE YOU HAVE GATHERED ALL IMPORTANT INFO. I feel this information was accurate and made simple to understand. this was good information vitals
8	No Response	
1	No comment	No comments
6	Efficiency	organization of information How to organize your information. What it important. Taking notes before calling MD
287	TOTAL	

How can we improve this learning experience?

SBAR	THEME	COMMENTS
124	No Changes Needed/All good	This format was very helpful and easy to navigate This experience was a good one. No improvements No need to improve, this was informative and easy to follow Was effective This process was easy to understand this is better than in the past
34	Not Applicable	
9	Assessment	add more diverse questions test out with pre test score Providing the answers to the questions that were answered incorrectly would be beneficial I missed one answer and this module did not give me the answer to the question I miss. When a question is missed it should be "highlighted"
9	No comment	
9	Out of Context/Indeterminate	This is already incorporated in our facility should have speakers on our computers so we can do at work.
4	Format	Provide handout for those who do better with paper paper I would rather have it on paper instead of logging in and out on a computer
11	No Response	
45	Content	Use more power points as visual aids. try and use shorter videos to explain . To do more situations and how we used the S-BAR. By creating a complete syllabus on the unit for recall and completion of a correct way to complete a SBAR. I would have liked to see more interaction. Click drag questions, Pictures and such for visual learners.
11	Add, Revise Case Studies	Maybe use more clinical situations and visual aides Increase the amount of case studies to practice with.
34	Other	Information should be more organized rather than having to click on different links. The drag and click activity was hard to use on the computer because it made me scroll too far down and was very awkward. Take the time to communicate more thoroughly Not so many links to different pages and having everything located in one spot. make it more interactive
290	TOTAL	

COPD Module Summary

- Average Time to Complete: 22 minutes
- Completions: 261
 - Bethany Village 103
 - Eliza Bryant 47
 - Kendal of Oberlin 27
 - Shepherd Valley 84
- Evaluation Count: 261
- Post Test Count: 261

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pretest assessment of knowledge with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Item 2 (Table 1) suggests that the intervention provided no new knowledge gained for this item (Figure 1).
- The results for Items 1, 4, 6, 7, 10, 11 and 12 indicate that while there is a significant difference between the pre- and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- Results for Items 3 and 9 suggest that the intervention had a significant and measurable effect on the results (Figure 1).
- The result for Item 5 and 8 suggest that the intervention had both a significant and large effect on the result (Figure 1).

Pre- vs Post-Test Scores

- A paired-samples t-test was conducted to compare the results of the pre- vs post-assessment scores for the module. There was a significant difference in the pretest scores ($M=0.69$, $SD=0.13$) and post-test scores ($M=0.89$, $SD=0.06$), $t(260)=-22.24$, $p<0.001$. The effect size for this analysis ($d=0.81$) was on par with Cohen's (1988) convention for a large effect ($d=0.80$) (Salkind, 2010).

COPD Module Summary

Table 1. Assessment Questions

Item 1: What might a patient experiencing an exacerbation of COPD complain of?

Item 2: COPD is curable.

Item 3: The main risk factor for COPD is air pollution.

Item 4: Patients with emphysema will often present with:

Item 5: The diagnosis of COPD is confirmed by spirometry.

Item 6: The goal of pharmacological treatment for COPD is:

Item 7: A beta agonist relaxes the smooth muscles of the airways, widening the airways, and making it easier to breathe. It may be short acting or long lasting.

Item 8: Your long-term care COPD patient will probably be on steroids for the rest of their life.

Item 9: The greatest capacity to influence the natural progression of COPD is:

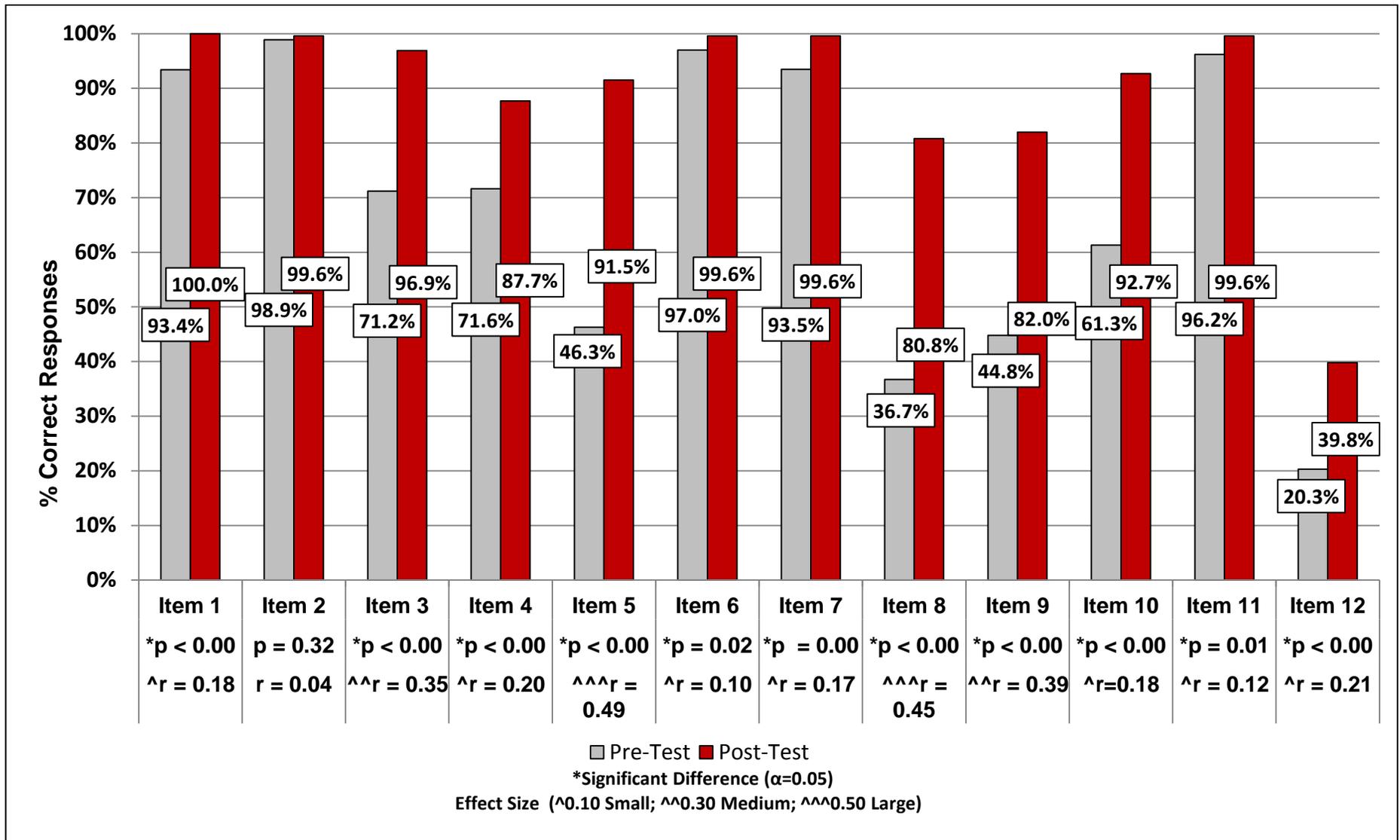
Item 10: Mr. J is admitted to your facility after hospitalization for a COPD exacerbation. His medication list indicates he has been on oral prednisone for one year. You know that oral steroids are the most beneficial because of decreased side effects.

Item 11: Mr. J is a 68-year-old male transferred from the hospital to your facility after an exacerbation of COPD for rehab. [...] After assessing the patient, your first action is:

Item 12: Mr. J is a 68-year-old male transferred from the hospital to your facility after an exacerbation of COPD for rehab [...] In what order would you present the following information when reporting to the provider?

COPD Module Summary

Figure 1: Results Summary Pre-Test vs Post-Test COPD



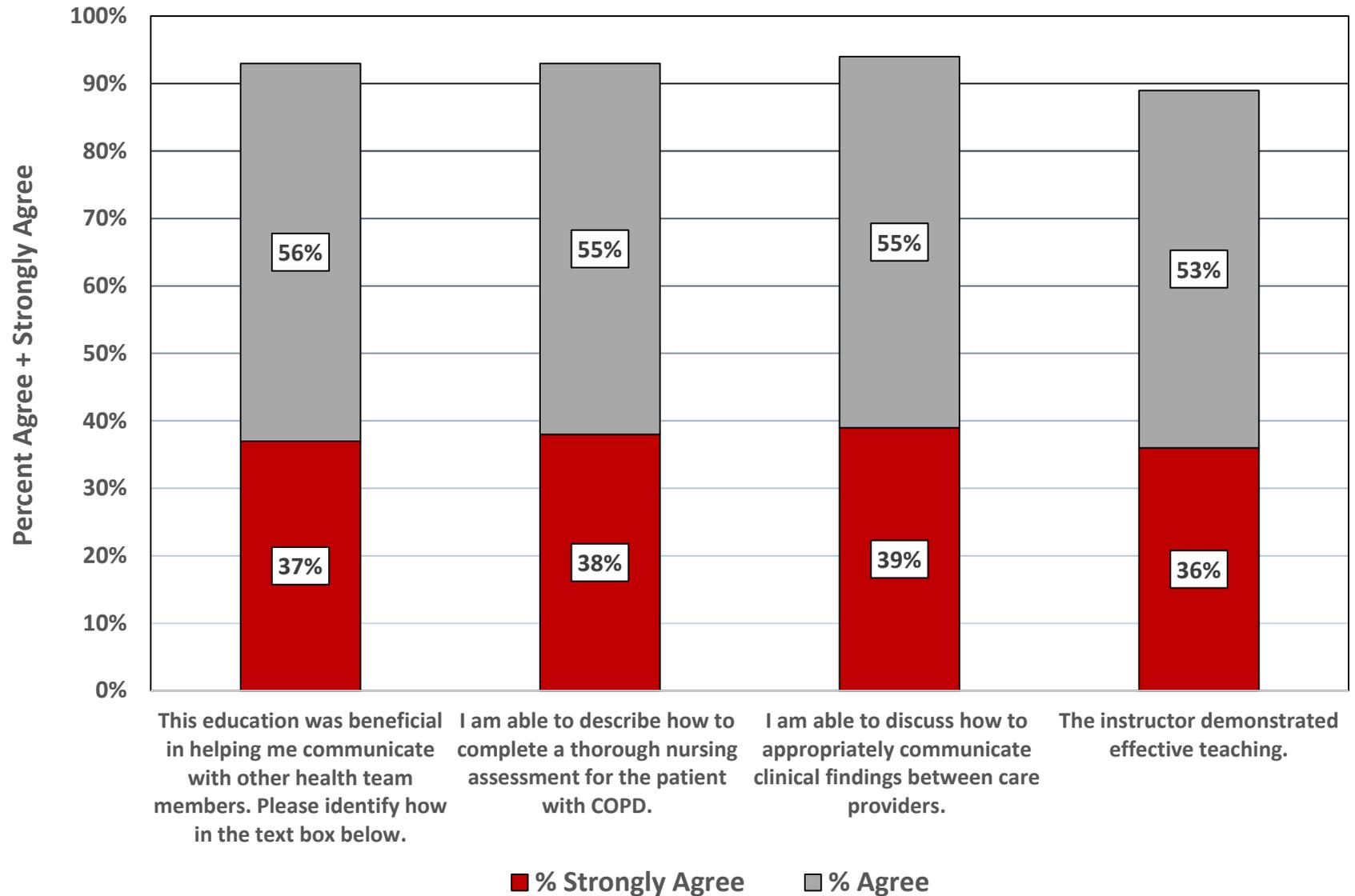
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

COPD Module Summary

Location	Level of Education	Results of Pre- vs Post-Test						Total Count
		Number of Scores Decreased		Number of Scores Increased		Number of No Change in Score		
		Count	%	Count	%	Count	%	
Bethany Village n=103	LPN	2	3.1%	57	87.7%	6	17.1%	65
	RN-AD			18	85.7%	3	14.2%	21
	RN-BSN/Diploma			14	87.5%	2	12.5%	16
	NP-PhD/Masters					1	100%	1
	TOTAL	2	1.9%	89	86.4%	12	11.7%	103
Eliza Bryant n=47	LPN			32	94.1%	2	5.9%	34
	RN-AD			7	87.5%	1	12.5%	8
	RN-BSN			1	50.0%	1	50.0%	2
	NP-PhD/Masters			3	100.0%			3
	TOTAL	0	0%	43	91.5%	4	8.5%	47
Kendal of Oberlin n=27	LPN	1	7.1%	13	92.9%			14
	RN-AD			3	60.0%	2	40.0%	5
	RN-BSN/Diploma			7	100.0%	0		7
	NP-PhD/Masters					1	100.0%	1
	TOTAL	1	3.9%	23	85.1%	3	11.0%	27
Shepherd of the Valley n=84	LPN	2	4.3%	39	83.0%	6	12.8%	47
	RN-AD	1	5.0%	16	80.0%	3	15.0%	20
	RN-BSN/Diploma	1	5.9%	14	82.4%	2	11.8%	17
	Not Indicated	N/A		N/A		N/A		N/A
	TOTAL	4	4.8%	69	82.1%	11	13.1%	84
All Locations n=261	LPN	5	3.1%	141	88.1%	14	8.8%	160
	RN-AD	1	1.9%	44	81.5%	9	16.7%	54
	RN-BSN/Diploma	1	2.3%	36	85.7%	5	11.9%	42
	NP-PhD/Masters			3	60.0%	2	40.0%	5
	TOTAL	7	2.7%	224	85.8%	30	11.5%	261

COPD Module Summary

s



Describe how the education received in this module will change the way you provide care.

COPD	THEME	COMMENTS
21	Comprehension	Being more of aware of s/s can guide my questions addressed to the Res to determine best treatment practices to provide and/or recommend. Remember that COPD presents like a cold I will be more observant when recognizing exacerbation of COPD symptoms. Help me understand COPD Help me understand COPD
8	Patient Care	this new info will make me look at residents differently It will enable me to care for my patients effectively. I know how to better care for a resident with COPD.
12	Communication	I will be able to communicate SBAR easier with the physician. Will assist in communicating assessment to dr. Being detailed but brief with information. i can provide better imformation on COPD
7	Not Applicable	
9	Assessment	Being aware of the s/s of disease and the disease process will assist in the assessment process BETTER EVALUATION SKILLS It will help me be able to asses a COPD resident better learning the history of their disease it taught me how to properly assess a resident with copd
0	Call 911	
4	Efficiency	Better prepared for s/sx of respiratory problems
195	No Response	
5	Out of Context/Indeterminant	very good copd and sbar not at all
0	Will not change	
261	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

COPD	Theme	Sample Comments
18	Communication	Communication with other health care team with the situation of the resident. Making sue flu and pneumonia shots are up to date Providing education to patients regarding COPD Utilize SBAR to communicate effectively
115	Assessment	Auscultation lung sounds more effectively I learned more about the signs/symptoms of COPD and what to look for with an exacerbation Assessing for more abnormal respiratory symptoms. With the increased sputum production and knowing about cessation of cigarette smoking I didn't know that COPD could be confirmed by spirometry One assessment skill I learned that I will incorporate into my practice was being aware of the family or those that may have exacerbated the COPD while visiting the Pt.
9	Will not change/Will Not Use/No new knowledge	The COPD/resp assessment was a review Only basic assessment skills were shown All material was review.
37	Comprehension	the importance of reinforcing medication compliance I learned more about the risk factors for COPD and how to go about taking care of someone with COPD. The symptoms leading up to the debilitating illness that can be prevented or lessened if recognized and implemented proper treatment. additional symptoms COPD presents worth versus emphysema Increased knowledge of COPD symptoms and physiology
15	Not Applicable	N/A
47	Out of Context/Indeterminate	Steroid useage Pharmacologics recommendation copd
21	No Response	
0	No comment	
3	Efficiency	Reading questions slower more organized Using SBAR more effectively.
265	TOTAL	

How can we improve this learning experience?

COPD	THEME	COMMENTS
110	No Changes Needed/All good	Had just right amount of information I thought it was full of learning information that anyone can use while taking care any patient was a good learning needs no improvement Everything was well explained
47	Not Applicable	
16	Assessment	Have situational intermittent feed back or questions to increase retention of knowledge via e-mail or otherwise Although you have a pre-test. Quiz questions would be nice throughout the module. Post test should allow you to see the correct answer. Question 9 seems to be worded oddly. It is asking which item increases the natural progression, but the options are all items that decrease the progression, unless I'm reading it wrong.
4	No comment/Unsure	
7	Out of Context/Indeterminate	
5	Format	printable power point, i learn best by taking notes, it
15	No Response	
32	Content	The you tube videos seem amateurish. They are reading mostly from the slides. While the scenarios are nice....I can assure you that most facilities do not have a video link to a physician and the physician is not always as patient in hearing the SBAR in full. Have more learning stories so we can use the S-Bar to solve them. improved ability to relay critical information to make sound clinical decisions No suggestions Maybe include breath sounds that a COPD patient would display in an exacerbation
1	Add, Revise Case Studies	Add more examples of cases studies
24	Other	8 mentions of needing improved presentation Presenter should possibly review material prior to actual recording. Provide a more conspicuous module for the power points. Can be more interactive/ Choose a better speaker or re record over stuttering or repeat speaking
261	TOTAL	

Stroke Module Summary

- Average Time to Complete: 40 minutes
- Completions: 258
 - Bethany Village 103
 - Eliza Bryant 45
 - Kendal of Oberlin 26
 - Shepherd Valley 84
- Post Test 258
- Evaluation Count: 258 *Varies by items

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge and/or beliefs with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Items 2, 4, 5, 6, 7, 10, 11, 12, and 13 (Table 1) suggest that the intervention provided no new knowledge gained for these items (Figure 1).
- The results for Items 1, 3, 8, 9, and 14 suggest that while there was a significant difference between the pre and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- The results for Items 1 and 7 resulted in less than half of the participants selecting the correct response either pre or post-test. These items should be reviewed for clarity and/or accuracy.

Pre vs Post Test Scores

- A paired-samples t-test was conducted to compare the results of the pre vs post assessment scores for the module. There was a significant difference in the pre-test scores ($M=0.68$, $SD=0.15$) and post-test scores ($M=0.74$, $SD=0.15$), $t(257)=-6.65$, $p<0.01$, $d=0.41$.

Stroke Module Summary

Table 1. Stroke Assessment Questions

Item 1: When answering questions 1-9, use the following case study. Mr. M is a 78-year-old gentleman admitted to your facility for skilled care after a hip replacement. [...] Hypertension is the biggest risk factor for:

Item 2: The risk factors for stroke are not controllable.

Item 3: Your assessment of Mr. M includes an uneven smile, inability to raise both of his arms at the same time, the right arm drifts downward, and his speech is slurred. Your first action is to

Item 4: Mr. M must receive t-PA within 3 hours for it to effectively treat his stroke.

Item 5: You receive a call from the hospital 10 days later and Mr. M is ready for discharge to your facility. His stroke has caused right-sided brain damage. Deficits resulting from right-sided brain damage include:

Item 6: When caring for Mr. M you should approach him from the affected side.

Item 7: All members of the team should focus on Mr. M's disabilities when providing care and rehabilitation.

Item 8: Mr. M is at risk for a second stroke due to:

Item 9: Depression occurs in more than 1/3 of stroke victims and is often overlooked:

Item 10: Hello, this is Kathy RN calling about Mr. M. He has been doing well with therapy but this morning he had an episode of confusion [...] This is an example of what level of SBAR?

Item 11: Mr. M is currently stable and back to his baseline, however I am concerned about this recent episode and the potential for another CVA. This is an example of what level of SBAR?

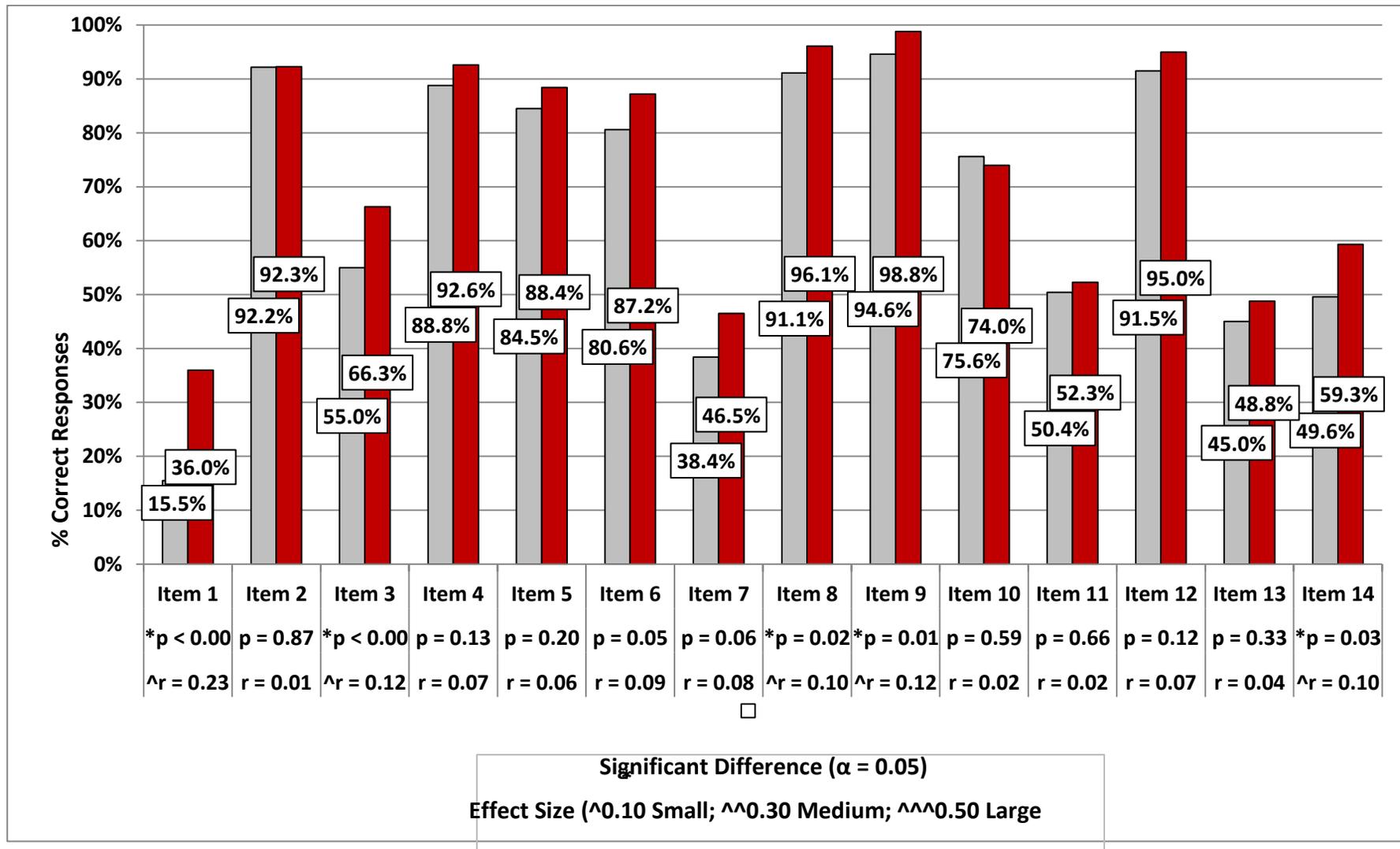
Item 12: I was calling to see if you would like us to transport Mr. M to the hospital for additional testing or schedule outpatient testing? This is an example of what level of SBAR?

Item 13: Vitals: BP 135/70, R16, P 65, Pulse ox 96%, T 97.4. Current physical exam: Alert and oriented x3, conversation appropriate, recall at baseline PERRLA [...] This is an example of what level of SBAR?

Item 14: The exam the nurse used to assess Mr. M during the episode is the:

Stroke Module Summary

Figure 1. Results Summary Pre-Test vs Post-Test



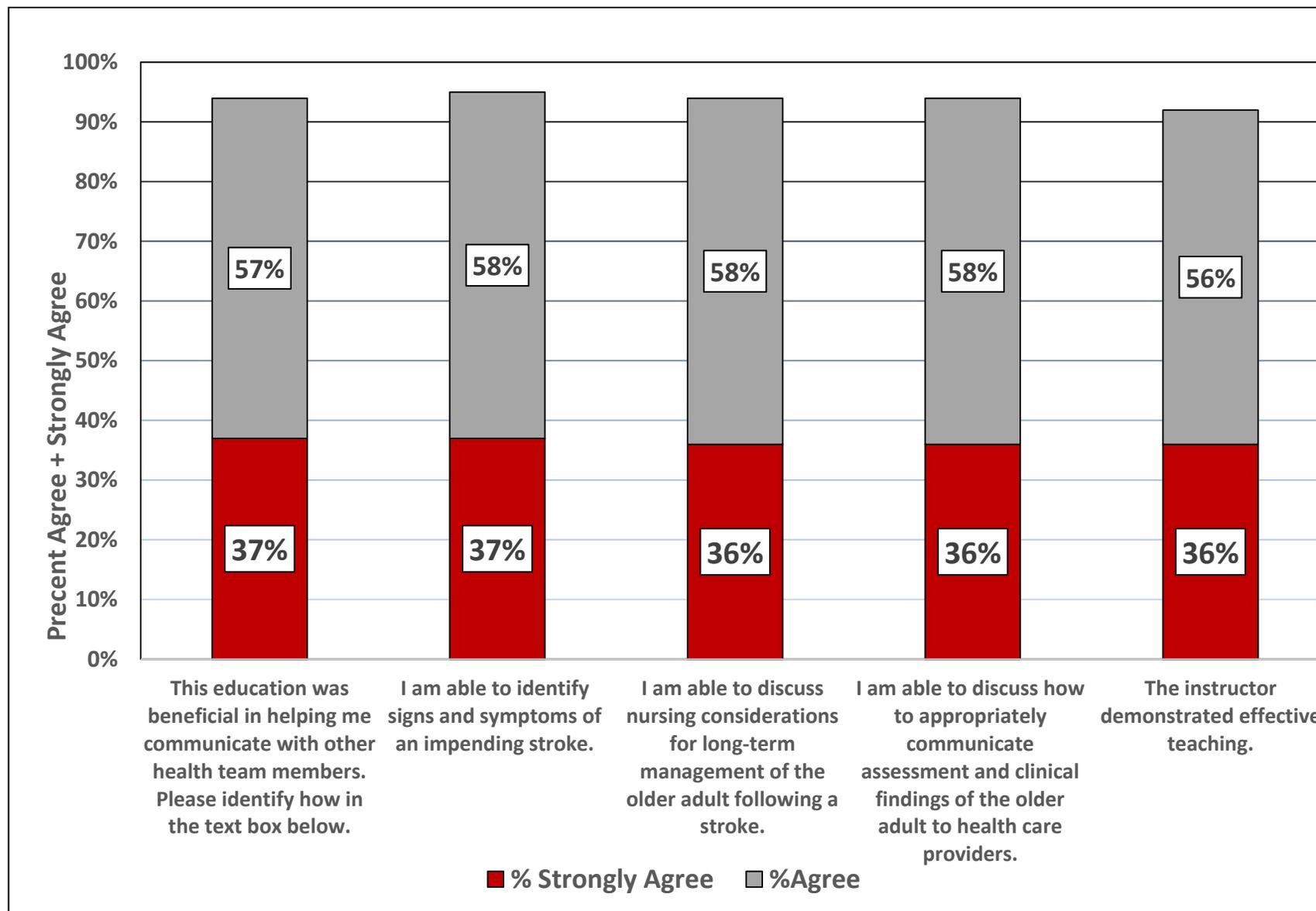
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

Stroke Module Summary

LOCATION	Level of Education	Scores Decreased		Scores Increased		No Change in Scores		Total	
		Count	%	Count	%	Count	%	Count	%
Bethany Village	LPN	13	5.0%	33	12.8%	19	7.4%	65	25.2%
	NP		0.0%		0.0%	1	0.4%	1	0.4%
	RN	1	0.4%	11	4.3%	4	1.6%	16	6.2%
	RN - AD	3	1.2%	12	4.7%	6	2.3%	21	8.1%
	Total	17	6.6%	56	21.7%	30	11.6%	103	39.9%
Eliza Bryant	LPN	9	3.5%	13	5.0%	10	3.9%	32	12.4%
	NP		0.0%	3	1.2%		0.0%	3	1.2%
	RN	1	0.4%	1	0.4%		0.0%	2	0.8%
	RN - AD		0.0%	4	1.6%	4	1.6%	8	3.1%
	Total	10	3.9%	21	8.1%	14	5.4%	45	17.4%
Kendal of Oberlin	LPN	2	0.8%	6	2.3%	5	1.9%	13	5.0%
	NP		0.0%		0.0%	1	0.4%	1	0.4%
	RN	3	1.2%	3	1.2%	1	0.4%	7	2.7%
	RN - AD		0.0%	4	1.6%	1	0.4%	5	1.9%
	Total	5	1.9%	13	5.0%	8	3.1%	26	10.1%
Shepherd of the Valley	LPN	12	4.7%	17	6.6%	18	7.0%	47	18.2%
	RN	3	1.2%	6	2.3%	7	2.7%	16	6.2%
	RN - AD	2	0.8%	12	4.7%	6	2.3%	20	7.8%
	N/A		0.0%	1	0.4%		0.0%	1	0.4%
	Total	17	6.6%	36	14.0%	31	12.0%	84	32.6%
ALL LOCATIONS	LPN	36	14.0%	69	26.7%	52	20.2%	157	60.9%
	NP		0.0%	3	1.2%	2	0.8%	5	1.9%
	RN	8	3.1%	21	8.1%	12	4.7%	41	15.9%
	RN - AD	5	1.9%	32	12.4%	17	6.6%	54	20.9%
	N/A		0.0%	1	0.4%		0.0%	1	0.4%
GRAND TOTAL		49	19.0%	126	48.8%	83	32.2%	258	100.0%

Stroke Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

STROKE	Theme	Comments
12	Comprehension	A new awareness, what signs to look for and act quickly The importance of getting patient to the hospital quickly. timing is an important part of a resident recovery when the pt has has s/s of a cva
16	Patient Care	Move quickly to assist patient who may be experiencing a stroke. I wont approach on the affected side to be more observant of pt. motor skills post care of Stroke
6	Communication	It gives me a better insight of the disorder and how to effectively communicate to my resident/patient. better observation of symptoms To call doctor if resident is refusing meds that will help to improve their health.
2	Call 911	call 911 after first symptoms of CVA calling 911 if stroke is suspected
0	Not Applicable	
13	Assessment	I will be diligent in recognizing risk factors for stroke to prevent it from occurring. Identification of stroke in patients and proper procedure to help quickly. Look for Depression Faster identification of symptoms of stroke
0	Call 911	
0	Efficiency	NONE
201	No Response	
7	Out of Context/Indeterminate	Good ok
1	Will not change	NONE
257	TOTAL	On the floor with my residents

Identify one new assessment skill you learned from this module that you will incorporate into your practice

STROKE	Theme	Sample Comments
13	Communication	Not to call the provider when you suspect a stroke, call 911 immediately and then call provider Able to give detailed situation of pt to other health care team Using the SBAR to communicate post CVA concerns of a patient
124	Assessment	Watching for s/sx depression s/p stroke. listening to pt. concerns mentally as well as physically. Identifying the signs and symptoms of a stroke I will assess the behavior to determine which side the individual has had the stroke The FAST approach to remember warning signs of a Stroke
12	Will not change/Will Not Use/No new knowledge	Good review but no new information provided. Good review of ways to help stroke patients. Good info to tell friends and family to prevent stroke from happening.
54	Comprehension	I was not aware if someone was having a Hemorrhagic stroke; they would have more HA & vomiting signs/sx Reminder of the different types of strokes, causes and residual effect. The impact of hypertension on the risk of stroke Difference between ischemic and hemorrhagic symptoms I learned that depression is very important to watch for in patients after having a stroke.
23	Not Applicable	
13	Out of Context/Indeterminate	Good helpful
20	No Response	
0	No comment	
1	Efficiency	organization
260	TOTAL	

How can we improve this learning experience?

STROKE	THEME	COMMENTS
101	No Changes Needed/All good	This format worked well for me in this case. The module was helpful and easy to follow Material was well explained I thought module was very infomative.
51	Not Applicable	
11	Assessment	This program should tell the wrong answer and a rationale to improve knowledge and skills. Still think that Situation and assessment are not clear. Don't have us do an evaluation after every module. They are all very similar. Allow the nurse to continue working on the quiz until 100% is obtained
5	No comment/Not Known/Unsure	
5	Out of Context/Indeterminate	
5	Format	Provide printable quick charts to facilitate ease of application is there a way to print off the power point presentation? By being able to print the power points for reference
22	No Response	
43	Content	By giving us more situations. Better clarification on SBAR. Vital signs is assessment. explaining terms used to identify a stroke, especially with the abbreviation used or scale to determine a stroke. the speaker kept stumbling on her words
6	Add, Revise Case Studies	more information for case studies Provide more examples/case studies
9	Other	make volume louder Have different readers doing slides....2 people. Get a new speaker
258	TOTAL	

Diabetes Module Summary

- Average Time to Complete: 22 minutes
- Completions: 261
 - Bethany Village 103
 - Eliza Bryant 45
 - Kendal of Oberlin 27
 - Shepherd Valley 86
- Post Test Count: 261
- Evaluation Count: 261 * Varies by Item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pretest assessment of knowledge with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The results for Items 1-12 and 14 (Table 1) suggest that the intervention provided no new knowledge gained for these items (Figure 1).
- The results for Items 13 and 15 indicate that while there is a significant difference between the pre- and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- While the results for 10, 12, and 13 had no significant effect, approximately half or less of the participants received the correct score in either the pre- or the post-test. This item should be reviewed for accuracy and/or clarity.

Pre- vs Post-Test Scores

- A paired-samples t-test was conducted to compare the results of the pre- vs post-assessment scores for the module. There was a significant difference in the pretest scores ($M=0.77$, $SD=0.13$) and post-test scores ($M=0.81$, $SD=0.12$), $t(261)=-4.72$, $p<0.001$. The effect size for this analysis ($d=0.29$) was on par with Cohen's (1988) convention for a small effect (Salkind, 2010).

Diabetes Module Summary

Item 1: Which of the following best describes diabetes?

Item 2: Weight loss and increasing physical activity can decrease the chance of developing Type 2 diabetes.

Item 3: Type 2 diabetics never take supplemental insulin.

Item 4: Type 2 diabetes

Item 5: Mr. Jones is an 82-year-old admitted to a long-term care facility for assistance with ADL [...] Mr. suffers from Diabetes Type 1.

Item 6: What is your initial action with regard to Mr. Jones?

Item 7: Mr. Jones' weight loss and increased activities may have had a positive effect on his diabetes.

Item 8: Diabetic Ketoacidosis is a life-threatening situation that develops [...] commonly seen in diabetics type 2.

Item 9: Signs and symptoms of hyperglycemia include

Item 10: A hemoglobin A1C provides an estimated average of fasting glucose over 3 months.

Item 11: Mr. Jones has not been eating as much lately and has lost 10 pounds [...] This is an example of:

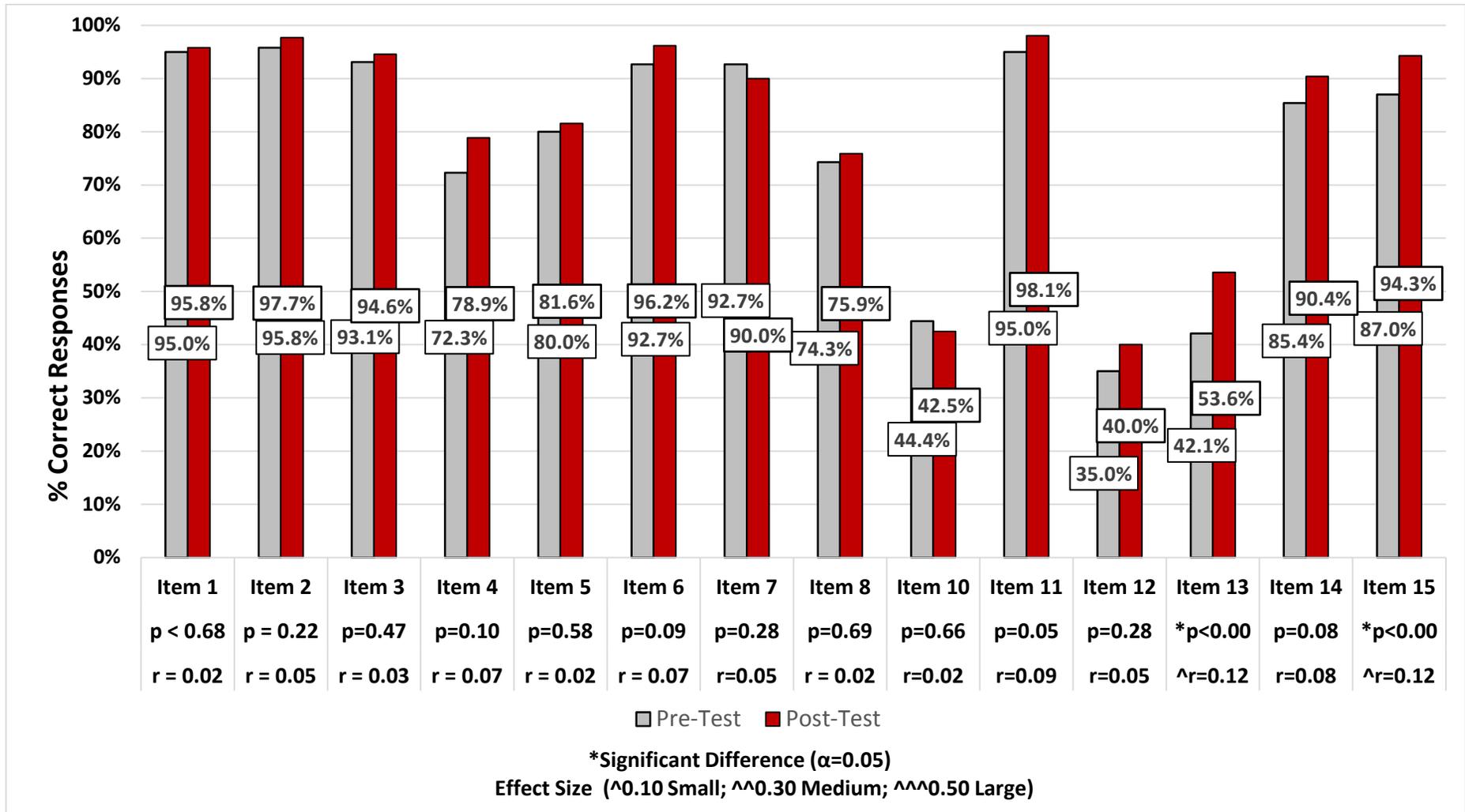
Item 12: Patient is currently stable; however, I am concerned [...] This is an example of

Item 13: Should we consider a medication change and would you like to order any lab work? This is an example of

Item 14: Vitals: BP 115/65, R16, P65, Pulse Ox 96%, T 97.4; Exam: [...] This is an example of:

Diabetes Module Summary

Results Summary Pre-Test vs Post-Test COPD



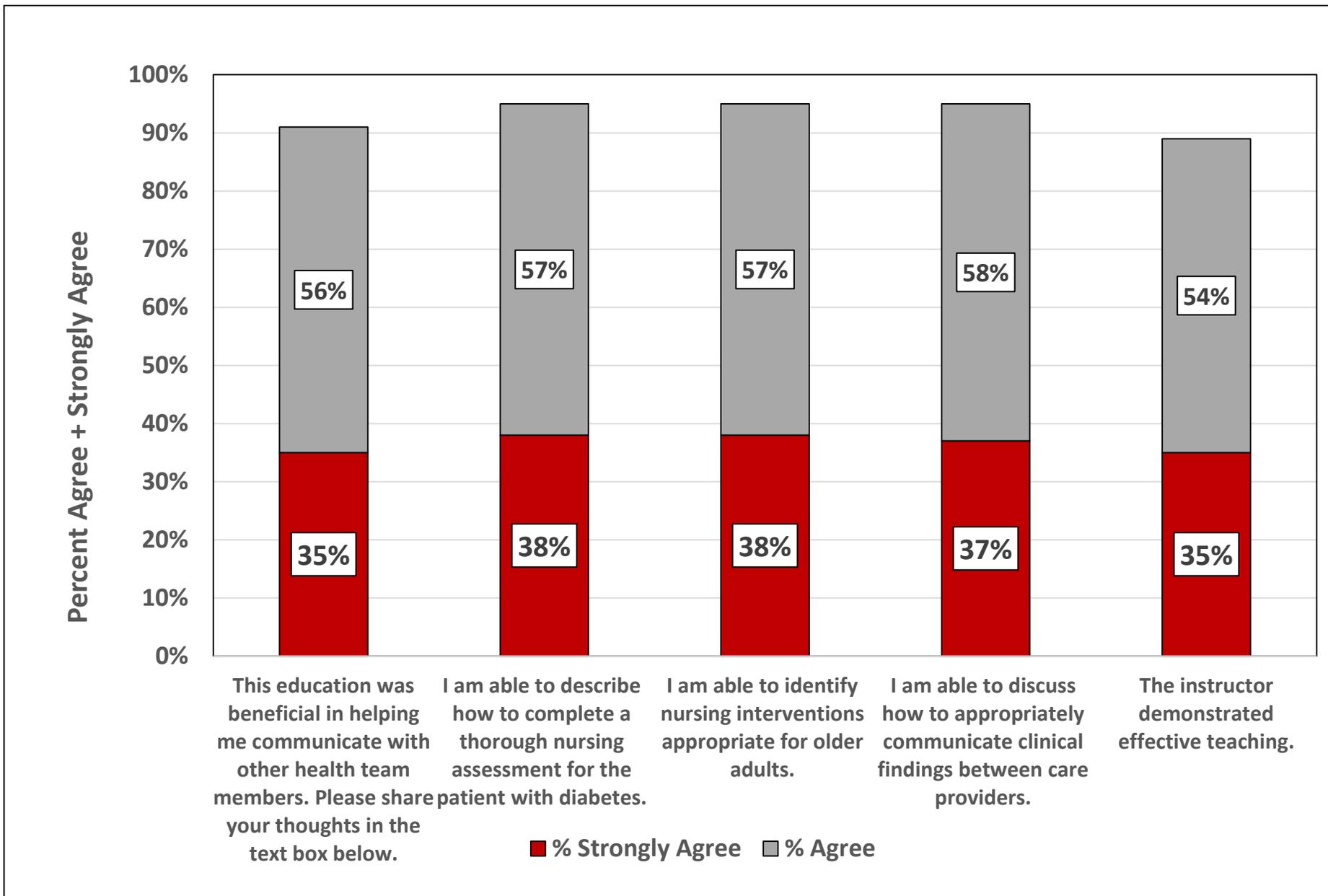
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

Diabetes Module Summary

Location	Level of Education	Results of Pre- vs Post-Test						Total Count
		Number of Scores Decreased		Number of Scores Increased		Number of No Change in Score		
		Count	%	Count	%	Count	%	
Bethany Village n=103	LPN	11	16.9%	27	41.5%	27	41.5%	65
	RN	1	6.3%	8	50.0%	7	43.8%	16
	NP					1	100.0%	1
	RN – AD	4	19.0%	6	28.6%	11	52.4%	21
	Totals	16	15.5%	41	39.8%	46	44.7%	103
Eliza Bryant n=45	LPN	1	2.2%	15	33.3%	16	35.6%	32
	RN			1	2.2%	1	2.2%	2
	NP					3	6.7%	3
	RN – AD			2	4.4%	6	13.3%	8
	Totals	1	2.2%	18	40.0%	26	57.8%	45
Kendal of Oberlin n=27	LPN	2	7.4%	5	18.5%	7	25.9%	14
	RN			6	22.2%	1	3.7%	7
	NP	1	3.7%					1
	RN – AD	2	7.4%	3	11.1%			5
	Totals	5	18.5%	14	51.9%	8	29.6%	27
Shepherd of the Valley n=86	LPN	9	10.5%	18	20.9%	21	24.4%	48
	RN	2	2.3%	7	8.1%	9	10.5%	18
	NP							
	RN – AD	4	4.7%	8	9.3%	8	9.3%	20
	Totals	15	17.4%	33	38.4%	38	44.2%	86
All Locations n=261	LPN	23	8.8%	65	24.9%	71	27.2%	159
	RN	1	1.1%	21	8.0%	18	6.9%	42
	NP	10	0.4%	0	0.0%	4	1.5%	5
	RN – AD	3	3.8%	20	7.7%	25	9.6%	55
	Totals	37	14.1%	106	40.6%	118	45.2%	261

Diabetes Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

DIABETES	Theme	Comments
9	Comprehension	I feel that this education has re-educated me on the risks of diabetes I have more knowledge of Type 2 Diabetes knowing more to provide better care being updated and given information is always helpful
8	Patient Care	It will make me use more critical thinking and apply the nursing process to the disease of diabetes and help me to determine the best plan during hyper or hypoglycemia episodes mindful of the patient's diet and exercise regimen MONITOR LABS CLOSELY Including mood in the assessment.
6	Communication	I will better be able to educate patients on lifestyle changes and the role diabetes can have on overall health when not managed properly. It will make a difference in how I pass on my information collected. Provide ongoing education to residents and families about their treatment for diabetes
0	Call 911	
7	Not Applicable	
10	Assessment	The education provided in this module will help me be more aware of warning signs Additional assessment skills to assess or have a conversation about with Res. Assists in recognizing symptoms associated with Type 2 Diabetes. better assessment skills
0	Efficiency	
209	No Response	
4	Out of Context/Indeterminate	diabetes type 2 and sbar education ok
6	Will not change	I feel like with my degree and experience I already obtained a very good working knowledge of this topic. Keep doing what I'm doing. I work with resident with diabetes daily.
259	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

DIABETES	THEME	SAMPLE COMMENTS
12	Communication	Better communication skills. SBAR communication listening
106	Assessment	what to monitor with diabetes patients What to look for with HTTNS and Diabetic Ketoacidosis Using the SBAR to contact the physician with concerns with a patient with diabetes Identifiers of signs and symptoms of hypo and hyperglycemia. Compare patient's eating and exercise habits, as well as his/her diabetic medication, with regular bloody glucose checks
9	Will not change/Will Not Use/No new knowledge	Review of assessment - no new material for assessment Refresh on DM but doesn't always pertain to nursing nothing new for me here
83	Comprehension	Things to look for in diabetics That more information is needed even when it is a known diabetic that you are calling the doctor about. More signs of hyper and hypoglycemia I did not know Learning what a proper assessment consist of. I learned from this module how to use data more effectively to determine the outcome of diabetes and use more background information and history to have evidence practice
20	Not Applicable	
14	Out of Context/Indeterminate	very informative The module was helpful and easy to follow the lady who did the video was easy to follow and understand SBAR communication tool is very useful
22	No Response	
0	No comment	
1	Efficiency	Organization
267	TOTAL	

How can we improve this learning experience?

DIABETES	THEME	COMMENTS
90	No Changes Needed/All good	The module was helpful and easy to follow The experience was thorough and did not need any improvement No need for any changes, this was a very effective learning tool.
45	Not Applicable	
11	Assessment	evaluation reviewing answer if they are wrong After the post test is completed if there were any incorrect answers it would be nice to know what the correct answers were. More questions while reading the module clearer questions
30	No comment/Unknown/Unsure	not sure how to improve they seem pretty good to me no suggestions fine the way it is No recommendations
1	Out of Context/Indeterminate	See above
4	Format	printable power points printable power point/ maybe I just couldn't locate where to print, [...] I would have liked to write on power point presentation, and keep for reference.
16	No Response	
43	Content	just more details of SBAR. Again I think some sections overlap and hard to distinguish which scenario goes where. Consistency in SBAR format information would help with efficiency in information gathering and reporting I think a side-by-side chart of the types of diabetes would give a better picture than only words. I think some of the information was missing More clear information on differences between Type 1 and 2 DM.
5	Add, Revise Case Studies	Practice case studies in the SBAR communication section. more case studies/examples
16	Other	Terms may need to be placed in non jargon terms at times so that not only the reader/tester but also the presenter are able to understand information being delivered [...] Not everyone likes a power point , presenter has questionable annunciation at times. It is annoying Having more interactive situational assessments within learning format Presenter needs to talk slower-Correctly pronouncing medical terminology..
261	TOTAL	

Heart Failure Module Summary

- Average Time to Complete: 41 minutes
- Completions: 257
 - Bethany Village 103
 - Eliza Bryant 44
 - Kendal of Oberlin 26
 - Shepherd Valley 84
- Post Test Count: 257
- Evaluation Count: 257 *Varies with item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Item 10 (Table 1) suggests that the intervention provided no new knowledge gained for this item (Figure 1).
- The results for Items 2, 4, 5, 6, 7, 9, 11, 12, 13, and 14 suggest that while there is a significant difference between the pre- and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- The results for Items 1, 3, and 8 suggest that there is both a significant difference and measurable effect as the result of the intervention.
- The result for Item 8 was significant and a measurable effect, however less than half of the participants received the correct score in either the pre- or the post-test. This item should be reviewed for accuracy and/or clarity. A similar but not as noticeable result was recorded for Item 13.

Pre- vs Post-Test Scores

- A paired-samples t-test was conducted to compare the results of the pre- vs post-assessment scores for the module. There was a significant difference in the pretest scores ($M=0.72$, $SD=0.12$) and post-test scores ($M=0.82$, $SD=0.10$), $t(257)=-14.80$, $p<0.001$. The effect size for this analysis ($d=0.92$) was on par with Cohen's (1988) convention for a large effect (Salkind, 2010).

Heart Failure Module Summary

Item 1: Risk factors for heart failure include:

Item 2: Heart failure is the most common indication for hospitalization due to exacerbation of a chronic condition among adults aged 65 years and older in the United States.

Item 3: Your patient has a diagnosis of re-current left heart failure. Symptoms accompanying an exacerbation may include:

Item 4: Uncontrolled hypertension places a patient at higher risk for heart failure.

Item 5: You are admitting a patient to the facility for rehab and he has a past medical history of heart failure. What signs and symptoms may indicate an exacerbation?

Item 6: Smoking cessation, alcohol cessation, weight loss, glucose control, and reduced sodium diet may prevent or decrease advancement of heart failure.

Item 7: Heart failure can be cured with good medication management.

Item 8: The most important part of the nursing assessment for heart failure is:

Item 9: A wheeze can be described as a high-pitched whistling sound.

Item 10: Management of late stage heart failure should include:

Item 11: Mr. B, DOB 2/3/42, was admitted to your facility 3 days ago after being hospitalized for 10 days with congestive heart failure. Mr. B's weight has increased [...]

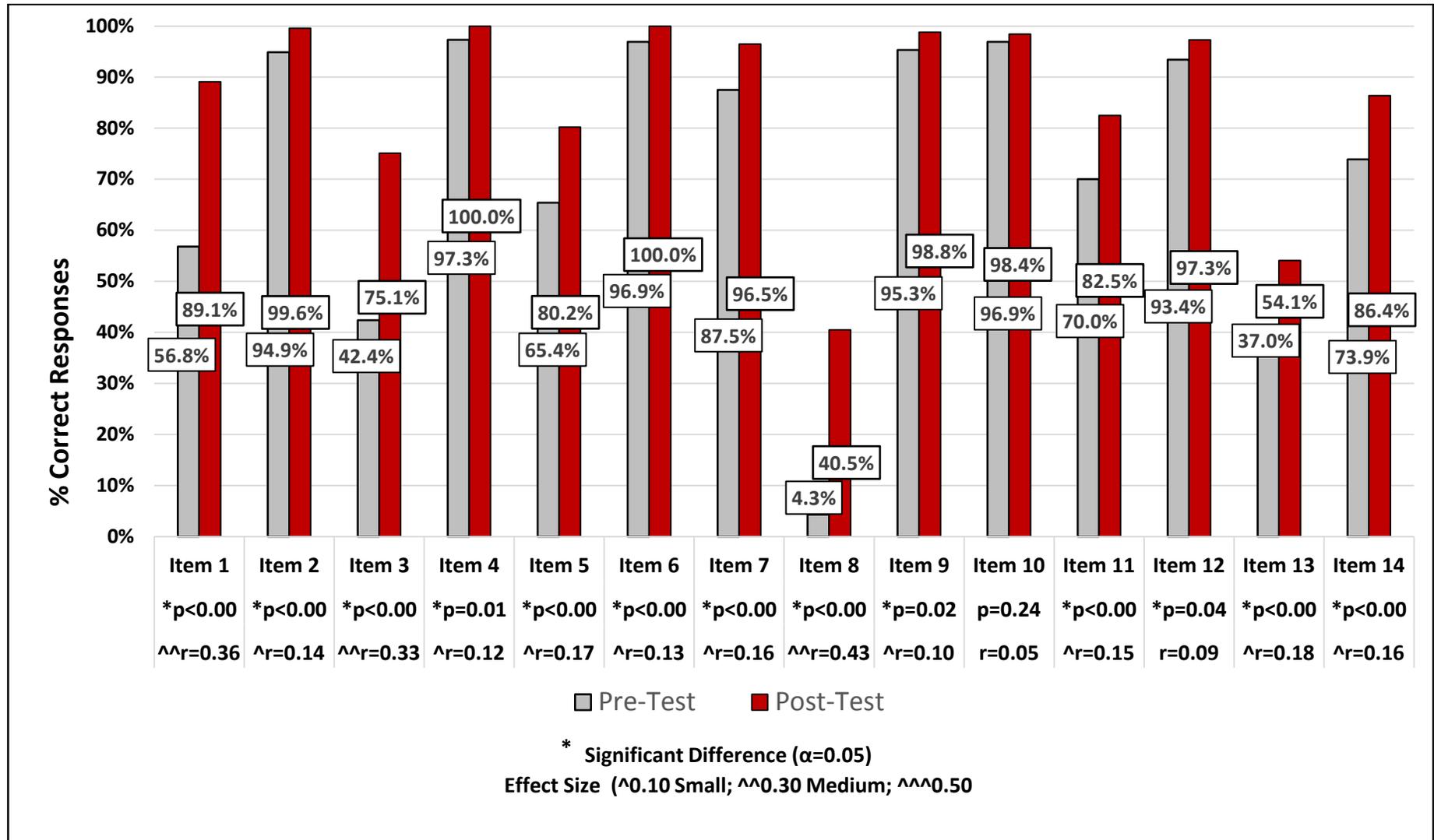
Item 12: I was calling to see if you would like us to increase Mr. B's Lasix this morning.

Item 13: Vitals: BP 170/70, R24, P 92, Pulse oximetry 94%, T 97.4 Current physical exam:

Item 14: An appropriate consult for Mr. B and his family, given the scenario above, is:

Heart Failure Module Summary

Results Summary Pre-Test vs Post-Test



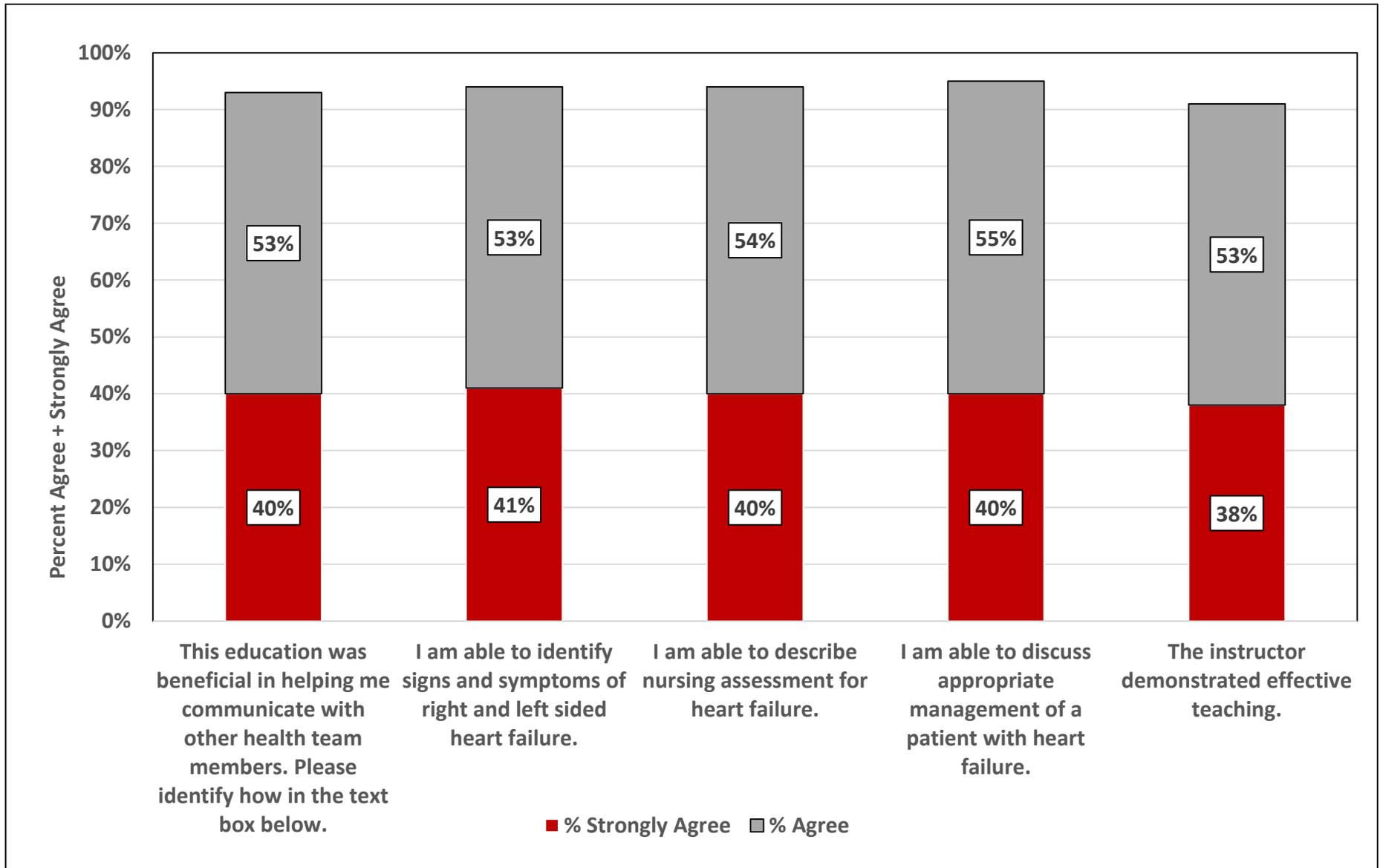
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

Heart Failure Module Summary

Location	Level of Education	Results of Pre- vs Post-Test						Total Count
		Number of Scores Decreased		Number of Scores Increased		Number of No Change in Score		
		Count	%	Count	%	Count	%	
Bethany Village n=103	LPN	9	8.7%	27	26.2%	29	28.2%	65
	RN	2	1.9%	10	9.7%	4	3.9%	1
	NP							
	RN - AD	2	1.9%	8	7.8%	11	10.7%	21
	Totals	13	12.6%	46	44.7%	44	42.7%	103
Eliza Bryant n=45	LPN	1	2.3%	28	63.6%	2	4.5%	31
	RN		0.0%	2	4.5%		0.0%	2
	NP		0.0%	3	6.8%		0.0%	3
	RN - AD		0.0%	7	15.9%	1	2.3%	8
	Totals	1	2.3%	40	90.9%	3	6.8%	44
Kendal of Oberlin n=27	LPN			12	46.2%	1	3.8%	13
	RN			7	26.9%			7
	NP			1	3.8%		0.0%	1
	RN - AD			5	19.2%		0.0%	5
	Totals			25	96.2%	1	3.8%	26
Shepherd of the Valley n=86	LPN			39	46.4%	8	9.5%	47
	RN			16	19.0%	1	1.2%	17
	NP							
	RN - AD			14	16.7%	6	7.1%	20
	Totals			69	82.1%	15	17.9%	84
All Locations n=257	LPN	10	3.9%	106	41.2%	40	15.6%	156
	RN	2	0.8%	35	13.6%	5	1.9%	42
	NP		0.0%	5	1.9%		0.0%	5
	RN - AD	2	0.8%	34	13.2%	18	7.0%	54
	Totals	14	5.4%	180	70.0%	63	24.5%	257

Heart Failure Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

HEART FAILURE	Theme	Comments
8	Assessment-related comment	Assess resident with heart failure in detailed I can assess my patients more accurately. will enhance my nursing practice and assessment skills
9	Communication/SBAR-related	i feel that i have a better understanding of how to explain heart failure to my patients Will be able to communicate assessment findings better for recommendations. Organize findings to communicate with the physician
0	Call 911	
16	More awareness/monitoring/observation- related	I will be more thorough, watching for ascites, complaints of fullness, that I may not have before. better observation be more aware of symptoms Monitoring resident current condition closely. medication and weight daily
7	Provide better care/Have better understanding	Better understand which CHF I am dealing with better care It will help me become a better nurse
11	New knowledge	I can identify the difference between right heart failure and left heart failure signs and symptoms to look for
199	Did not respond	
9	N/A, no change	I already had a very good working and clinical skill for HF pts from my experience as a nurse No change in way care provided
259	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

HEART DISEASE	Theme	Sample Comments
16	Communication	Will be able to communicate assessment findings better for recommendations.
		will deliver may info to the MD in a different order. providing education to patient and family
133	Assessment	Assessment of patients with heart failure.
		auscultation of the lungs and monitoring any weight recent gain I will be certain to record daily weights for any patient with Heart failure dx.
		Observation skills to use when working with a resident that may have CHF The assessment of right vs left sided heart failure
2	Will not change/Will Not Use/No new knowledge	Continue to use SBAR as i have been using
		I already had a very good working and clinical skill for HF pts from my experience as a nurse
87	Comprehension	The most important part of the nursing assessment for heart failure is auscultation
		difference between left sided heart failure and right sided heart failure Different symptoms with each kind of heart failure
		I learned how better to differentiate between Right and Left sided heart failure. The signs and symptoms of both are clearer now.
22	Not Applicable	
23	Out of Context/Indeterminate	No change in way care provided
		very helpful descriptions of left vs right sided heart failure No change in way care provided
27	No Response	
0	No comment	
5	Efficiency	Organize findings to communicate with the physician
		organizing a methodical assessment of a patient provided a good review of assessment skills
315	TOTAL	

How can we improve this learning experience?

HEART FAILURE	Theme	Comments
105	No Changes Needed/All good	The module was helpful and easy to follow No improvements are needed at this time. The format worked well for me. I don't feel you can improve it was very precise and to the point
45	Not Applicable	
11	Assessment	You don't know what is the correct answer...what is the point This program should tell the wrong answer and a rationale to improve knowledge and skills. just would like further info on SBAR. Disagree with some of the questions and answers. [...] Being able to retake the test until 100% would ensure the nurse arrives at the correct answer[...]
6	No comment/Unknown/Unsure	
8	Out of Context/Indeterminate	
3	Format	Would love to have the power points for this educational material paper it is what it is, and it is effective, i do take notes, so printable power point would be nice.
20	No Response	
34	Content	Provide visuals that compare the differences of left- and right-sided heart failure. Regular updating of the learning material and re-testing of nurses Add more examples, was too short To do more story problems.
5	Add, Revise Case Studies	provide more examples/case studies Increased amount of practice case studies.
20	Other	This is the only module that had lapses in the conversation, or skipped slides. The videos are really not launching properly. Have the IT person load them again for viewing The speaker at times sounds unsure of the material being read [...] makes it more difficult to follow. I believe the presenter should feel more comfortable with the information or topic of discussion. I also feel that the SBAR is confusing as the information being placed [...]
257	TOTAL	

Pneumonia Module Summary

- Average Time to Complete: 41 minutes
- Completions: 259
 - Bethany Village 103
 - Eliza Bryant 45
 - Kendal of Oberlin 26
 - Shepherd Valley 85
- Post Test: 259
- Evaluation Count: 259 *Varies with item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge and/or beliefs with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Items 2, 4, 5, 8, 10, and 11 (Table 1) suggest that the intervention provided no new knowledge gained for these items (Figure 1).
- The results for Items 1, 3, 6, 7, 9, and 12 suggest that while there was a significant difference between the pre and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- The results for Items 3 and 4 resulted in less than half of the participants selecting the correct response either pre or post-test. These items should be reviewed for clarity and/or accuracy.

Pre vs Post Test Scores

- A paired-samples t-test was conducted to compare the results of the pre vs post assessment scores for the module. There was a significant difference in the pre-test scores ($M=0.71$, $SD=0.13$) and post-test scores ($M=0.77$, $SD=0.12$), $t(259)=-8.37$, $p<0.00$, $d=0.52$.

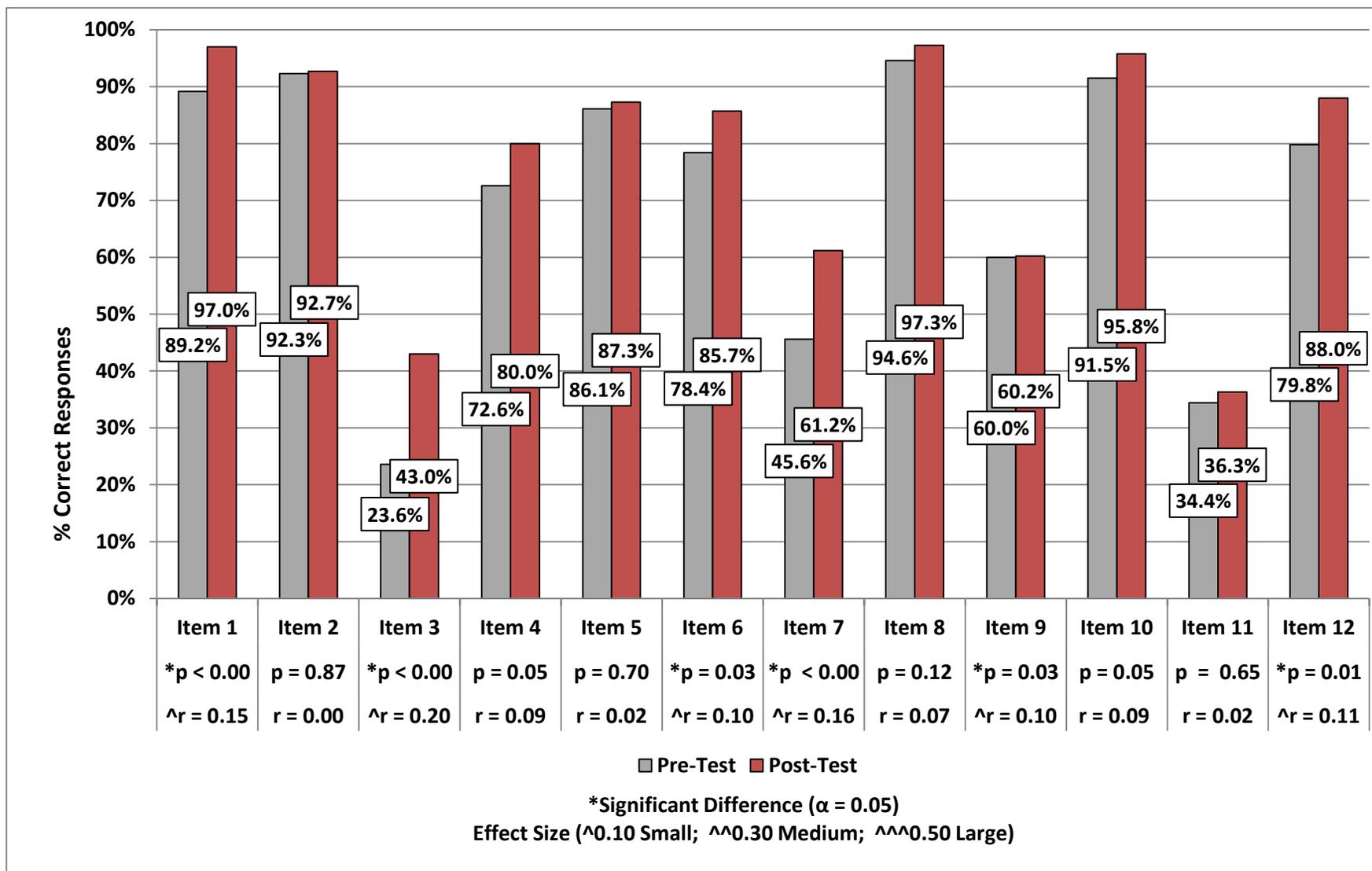
Pneumonia Module Summary

Table 1. Pneumonia Assessment Questions

<p>Item 1: Symptoms of an infection include</p> <p>Item 2: Patients in nursing homes are at greater risk for contracting pneumonia than the general public.</p> <p>Item 3: Older patients will demonstrate more symptoms of pneumonia than a young healthy individual.</p> <p>Item 4: All patients should be immunized with a pneumovax vaccine prior to being admitted to a nursing home.</p> <p>Item 5: When calling the doctor about a patient you believe may have pneumonia you will give information in the following order: 1. Vital signs, exam findings, changes from past assessment; 2. Your ideas on what should be done; 3. Identify yourself and patient and what the current problem is; 4. Identify the patient's diagnosis, their current treat plan and their history.</p> <p>Item 6: The diagnostic standard for diagnosing pneumonia is a sputum culture.</p>	<p>Item 7: If your patient has a CRB score of 1-2 you should call the squad for transport to the hospital.</p> <p>Item 8: After contacting the physician regarding a patient suspected of pneumonia, nursing goals should include</p> <p>Item 9: The most common cause of pneumonia in the nursing home patient is influenza.</p> <p>Item 10: Mr. J is a 68-year-old male transferred from the hospital to your facility s/p a CVA. [...] After assessing the patient your first action is:</p> <p>Item 11: Mr. J is a 68-year-old male transferred from the hospital to your facility s/p a CVA. [...] In what order would you present the following information when reporting to the provider? 1. Elevated HOB, rhonchi with inspiration and diminished bases; 2. Difficult breathing, coughing, fever, chills, T: 101, RR: 28, O2: [...]</p> <p>Item 12: When assessing a patient who is exhibiting symptoms of pneumonia you are most likely to hear ____ during auscultation.</p>
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Pneumonia Module Summary

Figure 1. Results Summary Pre-Test vs Post-Test



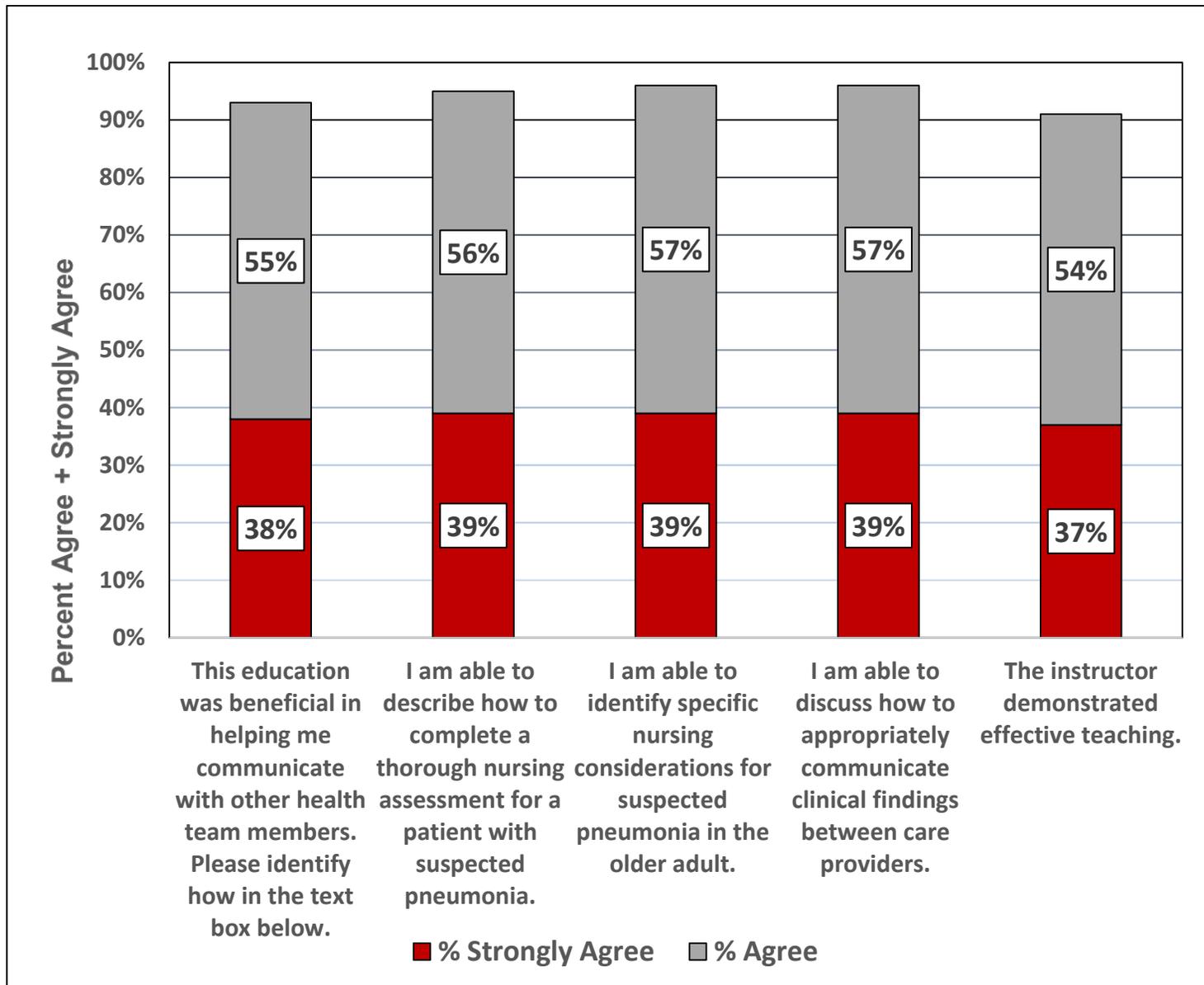
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Pneumonia Module Summary

Location	Level of Education	Number of Scores Decreased		Number of Scores Increased		Number of Scores with No Change		Total	
		Count	%	Count	%	Count	%	Count	%
Bethany Village n=103	LPN	9	3.5%	31	12.0%	25	9.7%	65	25.1%
	RN - AD	3	1.2%	9	3.5%	9	3.5%	21	8.1%
	RN	2	0.8%	3	1.2%	11	4.2%	16	6.2%
	NP		0.0%	1	0.4%		0.0%	1	0.4%
	TOTALS	14	5.4%	44	17.0%	45	17.4%	103	39.8%
Eliza Bryant n=45	LPN	4	1.5%	18	6.9%	10	3.9%	32	12.4%
	RN - AD		0.0%	5	1.9%	3	1.2%	8	3.1%
	RN		0.0%	1	0.4%	1	0.4%	2	0.8%
	NP	1	0.4%	2	0.8%		0.0%	3	1.2%
	TOTALS	5	1.9%	26	10.0%	14	5.4%	45	17.4%
Kendal of Oberlin n=26	LPN	3	1.2%	3	1.2%	7	2.7%	13	5.0%
	RN - AD		0.0%	2	0.8%	3	1.2%	5	1.9%
	RN		0.0%	4	1.5%	3	1.2%	7	2.7%
	NP		0.0%	1	0.4%		0.0%	1	0.4%
	TOTALS	3	1.2%	10	3.9%	13	5.0%	26	10.0%
Shephard of the Valley n=85	LPN	13	5.0%	24	9.3%	11	4.2%	48	18.5%
	RN - AD	1	0.4%	10	3.9%	9	3.5%	20	7.7%
	N/A		0.0%	1	0.4%		0.0%	1	0.4%
	RN	3	1.2%	10	3.9%	3	1.2%	16	6.2%
	TOTALS	17	6.6%	45	17.4%	23	8.9%	85	32.8%
All Locations n=259	LPN	29	11.2%	76	29.3%	53	20.5%	158	61.0%
	RN - AD	1	0.4%	4	1.5%		0.0%	5	1.9%
	RN	5	1.9%	18	6.9%	18	6.9%	41	15.8%
	NP	4	1.5%	26	10.0%	24	9.3%	54	20.8%
Grand Total		39	15.1%	125	48.3%	95	36.7%	259	100.0%

Pneumonia Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

PNEUMONIA	Theme	Comments
11	Comprehension	Better understanding of early s/s of pneumonia Even with being a nurse for many years, can still be reminded of things forgotten or updated on current modalities of treatment. The risk factors was something I did not know
5	Patient Care	i will elevated the HOB when a resident is having resp. issues I will focus on more accurate vital signs for the patient with pneumonia, provide more adequate hydration and help to reduce work load and provide rest and make sure antibiotics are given on time to help cure infection process and also promote clapping to lung areas to help loosen up secretions and mucous from lungs
11	Communication	educate my peers and patients Ensure that residents and families understand the importance of taking pneumovax I will stress the importance of having the the flu vac with ea resident Will assist in communicating assessment findings to dr.
7	Not Applicable	
22	Assessment	Early identification of pneumonia symtpoms I WILL KNOW WHAT MORE OF THE SIGNS TO LOOK FOR I will be more aware of signs of pneumonia that may not be so obvious. New incontinence, confusion. I will be sure to assess lungs thoroughly when patient experiencing SOB. This module demonstrated exact locations to listen to breath sounds.
0	Call 911	
0	Efficiency	
200	No Response	
1	Will not change	not at this time
2	Out of Context/Indeterminate	very good will help alot
259	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

PNEUMONIA	Theme	Comments
14	Communication	If your patient has a CRB score of 1-2 you shouldn't call the squad for transport to the hospital able to communicate in detailed resident situation to other health team care
		having things in order before contacting the doctor
117	Assessment	Identify specific nursing considerations for suspected pneumonia in the older adult Using SBAR for signs and symptoms before calling PCP, very useful tool.
		The CRB65 tool was a new to me. That decision tree will be useful
		Recognition of signs/symptoms when assessing a resident.
		Monitor for changes in ADL's and behaviors
14	Will not change/Will Not Use/No new knowledge	I did not enjoy module,Where i work Doctors mostly order Chest xray,Lab(CBC,CMP,UA& C&S),(Only once in the blue do they order Sputum culture, No new assessment skills,but review.
74	Comprehension	How to complete a thorough assessment on a patient with pneumonia. What to look for with pneumonia and infection in the elderly patients
		I did not know that the elderly displayed less symptoms than the younger age groups
		I learned that pneumonia is not caused my the flu
		How to complete a thorough assessment on a patient with pneumonia.
19	Not Applicable	
1	Out of Context/Indeterminate	organization
21	No Response	
0	No comment	
0	Efficiency	organization
260	TOTAL	

How can we improve this learning experience?

PNEUMONIA	THEME	COMMENTS
96	No Changes Needed/All good	Everything was well presented easy to follow continue educational opportunities such as these the format was adequate for me. Powerpoint was educational
51	Not Applicable	
10	Assessment	This program should tell the wrong answer and a rationale to improve knowledge and skills. Crb scores were mentioned in the pre-test. They were not explained during the teaching. If not scoring 100%, the correct answer should be shown if the user passed with 80+% add more questions
21	No comment	
7	Out of Context/Indeterminate	
4	Format	Include transcript of power point. I learn best by reading. printable power point, so I could follow along and take notes Additional informative text would be beneficial for printable reference material
18	No Response	
31	Add,Remove, Revise Content (Resources/Image/Video)	Where in the module did you discuss CRB??? let viewer hear what the nurse is hearing when she listens to the lungs during her assessment Perhaps copies of pneumonia on an x-ray More visuals
5	Add, Revise Case Studies	Provide more examples/case studies Provide more Critical Thinking Exercises
16	Other	Need to be iPad friendly Different format for module new narration More fluid narration
259	TOTAL	

UTI Module Summary

- Average Time to Complete: 38 minutes
- Completions: 260
 - Bethany Village 102
 - Eliza Bryant 46
 - Kendal of Oberlin 26
 - Shepherd Valley 86
- Post Test 260
- Evaluation Count: 260 *Varies by item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge and/or beliefs with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Items 2, 3, 4, 5, 7, 8, and 11 (Table 1) suggest that the intervention provided no new knowledge gained for these items (Figure 1).
- The results for Items 1, 6, 9, 10, 12, 13, 14, and 15 suggest that while there was a significant difference between the pre and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- The results for Item 7 resulted in less than half of the participants selecting the correct response either pre or post-test. This item should be reviewed for clarity and/or accuracy.

Pre vs Post Test Scores

- A paired-samples t-test was conducted to compare the results of the pre vs post assessment scores for the module. There was a significant difference in the pre-test scores ($M=0.74$, $SD=0.15$) and post-test scores ($M=0.81$, $SD=0.11$), $t(259)=-7.59$, $p<0.00$, $d=0.47$.

UTI Module Summary

Table 1. UTI Assessment Questions

Item 1: Recognizing changes in resident condition is an essential component of care for a resident with a possible urinary tract infection. Which of the following symptoms [...]

Item 2: Asymptomatic bacteriuria is defined as bacteria in the urine without symptoms of UTI

Item 3: Uncomplicated urinary tract infections are more common in men than women.

Item 4: Costovertebral angle tenderness may be indicative of

Item 5: Urinary tract infections may be difficult to identify in the older resident due to the symptoms being muted or absent.

Item 6: The resident you are caring for has been diagnosed with cystitis, what pathogen would you NOT expect to find in his urine culture?

Item 7: The diagnostic standard for diagnosing a urinary tract infection is bacteria in the urine.

Item 8: The primary goal of therapy for a urinary tract infection is eradication of the causative organism

Item 9: Symptoms of a UTI in an older resident may include

Item 10: If possible, Foley catheters should be discontinued when a urinary tract infection is identified.

Item 11: Mr. J is an 78 year old male resident who needs minimal assistance with his activities of daily living [...]. Your assessment indicates that Mr. J may be suffering from:

Item 12: *In what order would you present the following information when reporting to the provider [...]

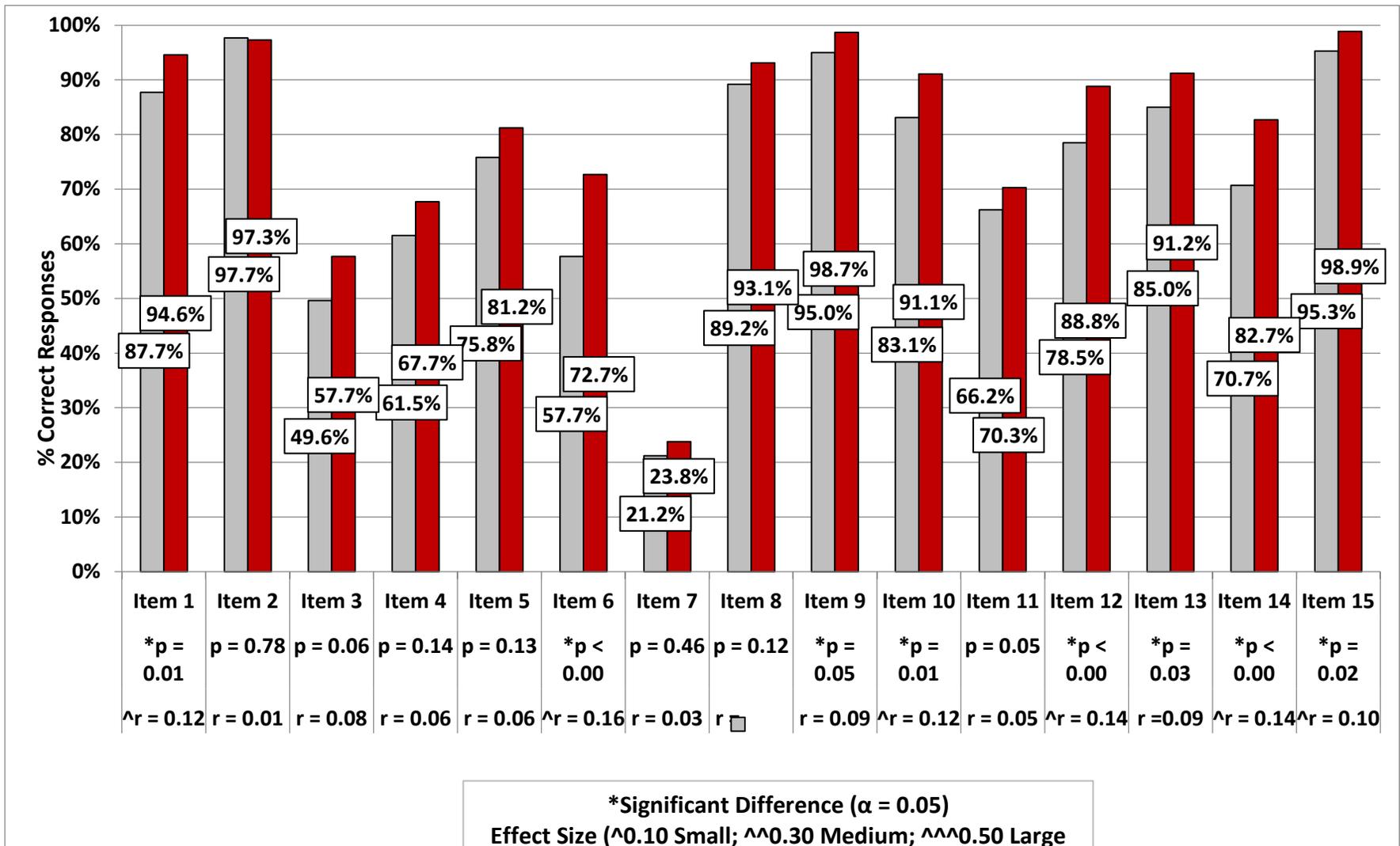
Item 13: What symptoms indicate that Mr. J may have a UTI?

Item 14: You place Mr. J's labeled UA in his bathroom when you leave the room to call the provider. When you return to the room one hour later the specimen is still there. You need to:

Item 15: The SBAR report should be completed prior to calling the provider.

UTI Module Summary

Figure 1. Results Summary Pre-Test vs Post-Test



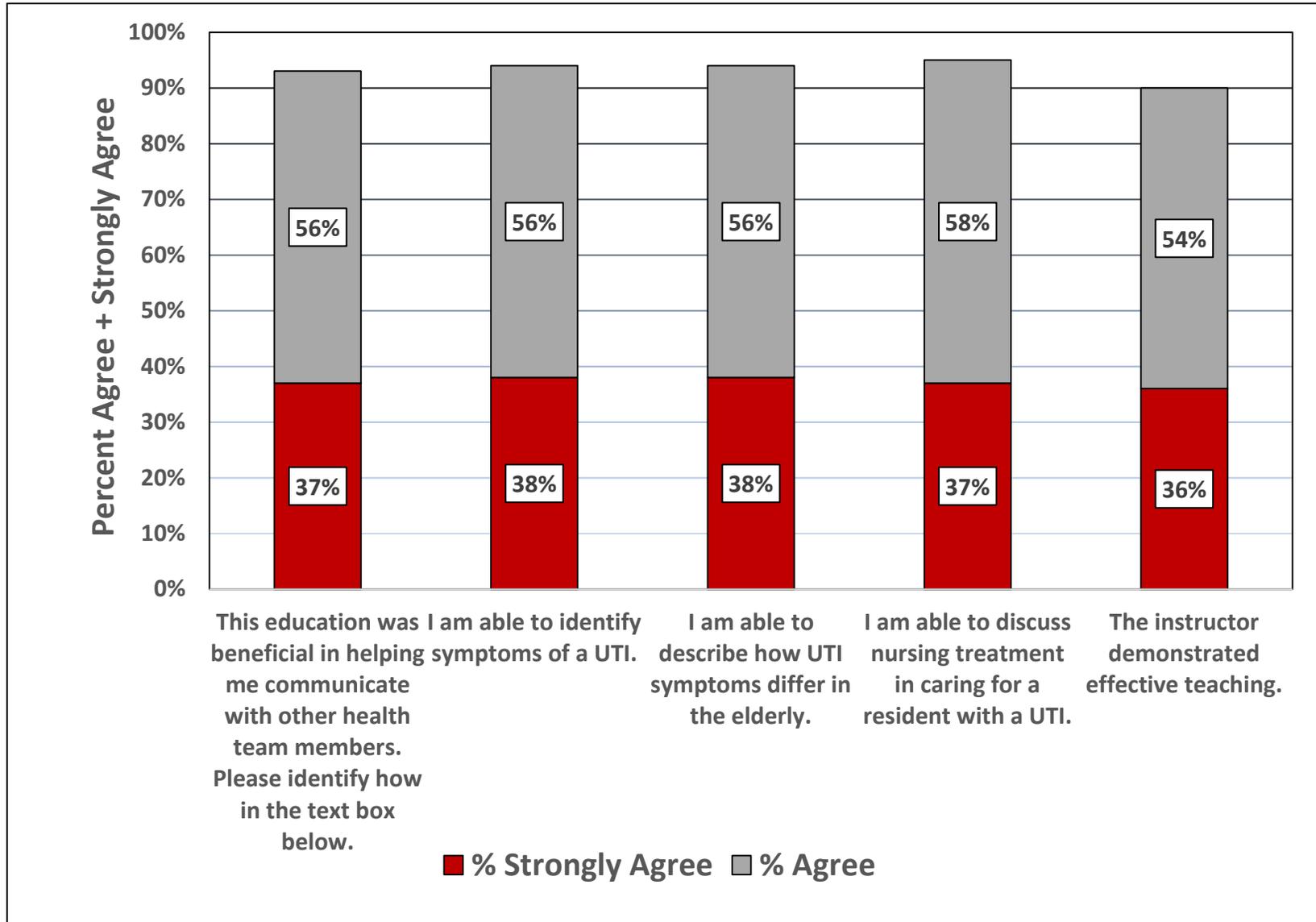
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiantz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

UTI Module Summary

LOCATION	Level of Education	Scores Decreased		Scores Increased		No Change in Scores		Total	
		Count	%	Count	%	Count	%	Count	%
Bethany Village n=102	LPN	13	12.75%	32	31.37%	19	18.63%	64	62.75%
	RN – AD	4	3.92%	10	9.80%	7	6.86%	21	20.59%
	RN	3	2.94%	11	10.78%	2	1.96%	16	15.69%
	NP		0.00%	1	0.98%		0.00%	1	0.98%
	Total		20	19.61%	54	52.94%	28	27.45%	102
Eliza Bryant n=46	LPN	8	17.39%	13	28.26%	12	26.09%	33	71.74%
	RN – AD	1	2.17%	5	10.87%	2	4.35%	8	17.39%
	RN		0.00%	1	2.17%	1	2.17%	2	4.35%
	NP	1	2.17%	2	4.35%		0.00%	3	6.52%
	Total		10	21.74%	21	45.65%	15	32.61%	46
Kendal of Oberlin n=26	LPN	3	11.54%	6	23.08%	4	15.38%	13	50.00%
	RN – AD		0.00%	3	11.54%	2	7.69%	5	19.23%
	RN	4	15.38%	3	11.54%		0.00%	7	26.92%
	NP		0.00%	1	3.85%		0.00%	1	3.85%
	Total		7	26.92%	13	50.00%	6	23.08%	26
Shepherd of the Valley n=86	LPN	9	10.5%	25	29.07%	16	18.60%	50	58.14%
	RN – AD	3	3.5%	9	10.47%	8	9.30%	20	23.26%
	RN	4	4.7%	9	10.47%	3	3.49%	16	18.60%
	NP								
	Total		16	18.6%	43	50.00%	27	31.40%	86
ALL LOCATIONS	LPN	33	12.69%	75	28.85%	51	19.62%	159	61.15%
	RN – AD	8	3.08%	27	10.38%	19	7.31%	54	20.77%
	RN	11	4.23%	24	9.23%	6	2.31%	41	15.77%
	NP	1	0.38%	4	1.54%		0.00%	5	1.92%
GRAND TOTAL				53	20.38%	131	50.38%	76	29.23%
						260		100.00%	

UTI Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

UTI	THEME	COMMENTS
18	Comprehension	Being cognizant of the different symptoms and ways that UTI's can present in the elderly client. More mindful of the symptoms and signs of a UTI and the difference that are present in male vs females. Symptoms of a UTI are not always obvious. I know what are more signs to look for in elderly
10	Patient Care	I will consider UTI if "R" shows signs of mental status change Continue to encourage fluid intake to flush out bad bacteria from the urinary tract. I will remember to change a foley cath prior to obtaining a culture sample When noticing residents being increasingly confused I will gather information regarding the urinary system first.
9	Communication	Will be able to provide more informative information on ways to prevent utis describing the changes in he resident mental and physical status. Communicate better with the healthcare team
8	Not Applicable	
13	Assessment	Able to assess resident in detailed and share situation with other health care team. It has provided me with a evidence based assessment [...] It gave me better tools to use in my evaluation Be more aware of subtle changes
0	Call 911	
2	Will not change	NO CHANGE no change
0	Efficiency	
193	No Response	
8	Out of Context/Indeterminate	certain infections Clear and concise information on UTI's gerqq
0	Will not change	
261	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

UTI	Theme	Sample Comments
8	Communication	Able to communicate with other health care team. HOW TO COMMUNICATE THROUGH THE SBAR SBAR of UTI communication
131	Assessment	Types of UTI's and how to identify them. Evaluating a resident for flank pain when UTI is suspected Using McGeer's tool to verify true infections. Checking lungs and heart for UTI assessing muted s/s of UTI in elderly patients
19	Will not change/Will Not Use/No new knowledge	I can't identify a new assessment tool from this module. no new assessment skill Noting all changes in behavior as a possible sign of UTI
47	Comprehension	I learned difference between types of UTI's and what S/S to look for. I learned to assess with more laboratory findings to assess what bacteria may have cause the UTI I learned how sensitive elderly residents are to having a UTI I understand to identify two symptoms that show signs/symptoms of UTI that UTI can cause incontinence agitation and changes in behaviors and mental status
25	Not Applicable	
9	Out of Context/Indeterminate	I finally learn how to take the module test, on my last module easy to apply
20	No Response	
0	No comment	
2	Efficiency	Im learning how to use the SBAR more efficiently. organization
261	TOTAL	

How can we improve this learning experience?

UTI	THEME	COMMENTS
107	No Changes Needed/All good	The module was helpful and easy to follow Nothing to improve the presentation was very educational and beneficial to learning about the disease process easy to follow
56	Not Applicable	
14	Assessment	SBAR format feels incorrect with the vitals not being part of the assessment. This program should tell the wrong answer and a rationale to improve knowledge and skills. more practice or questions along the way After receiving an 80% or higher, let the user know the correct answers.
5	No comment/Unknown/Unsure	no comment NO COMMENT
6	Out of Context/Indeterminate	
3	Format	Put in text format. paper have a pdf to download
18	No Response	
22	Content	Encourage interactive education points throughout scenarios to ensure understanding of material Different types of UTI needs explained more More information on UTI, as with the mini lectures More S-BAR situations.
6	Add, Revise Case Studies	Provide more examples/case studies Provide more case studies. More practice case studies and SBARs.
23	Other	The format worked well for my experience. The first presenter apparently had a cold - sniffing. Also did not seem too familiar with the information - mispronouncing words, halting speech. The video presentation has a lot of background noise. Have the presenter re record the lessons when she isn't coughing give access after completion of the course.
260	TOTAL	

Pressure Injury (Wound) Module Summary

- Average Time to Complete: 25 minutes
- Completions: 259
 - Bethany Village 102
 - Eliza Bryant 45
 - Kendal of Oberlin 26
 - Shepherd Valley 86
- Post Test 259
- Evaluation Count: 259 *Varies by item

The intended outcome of this evaluation is to identify areas of new or improved knowledge, skills, attitudes, and/or beliefs as a result completing the module.

Participants completed a pre-test assessment of knowledge and/or beliefs with regards to the module's intended outcomes. Immediately after completing the module, participants completed the same test (the post-test). Pairwise scores were collected. An evaluation was administered to gain feedback from participants on their perceived gains or gaps. Additional information gathered included participants' impressions on the quality of the module as well as specific comments on the adequacy of the module's format, content, and value.

Interpretation

Item Analysis

- The result for Items 2, 3, 5, 6, 10, 12, 13, and 15 (Table 1) suggest that the intervention provided no new knowledge gained for these items (Figure 1).
- The results for Items 4, 7, 8, 9, 11, and 14 suggest that while there was a significant difference between the pre and post-test scores, the effect size was small (Figure 1). More study is needed to determine if the effect of the intervention resulted in true gains in knowledge.
- Item 1 had both a significant increase scores pre- vs post-test with a medium effect. This suggests that there was a measurable effect as a result of the intervention.
- The results for Items 1 and 7 resulted in less than half of the participants selecting the correct response either pre or post-test. These items should be reviewed for clarity and/or accuracy.

Pre vs Post Test Scores

- A paired-samples t-test was conducted to compare the results of the pre vs post assessment scores for the module. There was a significant difference in the pre-test scores ($M=0.68$, $SD=0.14$) and post-test scores ($M=0.75$, $SD=0.13$), $t(259)=-9.05$, $p<0.00$, $d=0.56$.

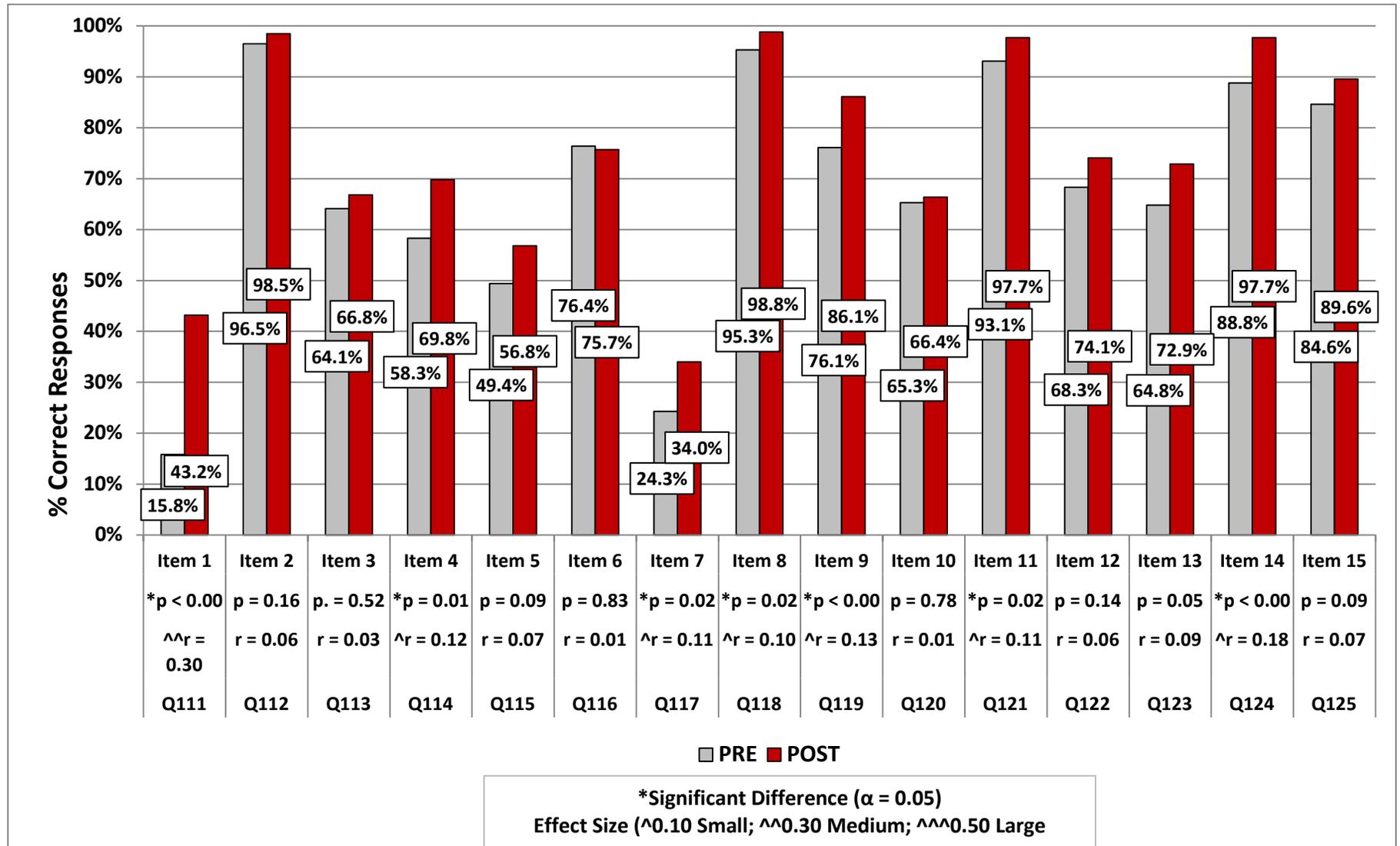
Pressure Injury (Wound) Module Summary

Table 1. Pressure Injury Assessment Questions

<p>Item 1: These wounds are well defined, and present at the tips of toes, pressure points, and areas of trauma. They have minimal drainage and appear pale or necrotic.</p>	<p>Item 8: Signs and symptoms of wound infection include</p>
<p>Item 2: The treatment goals for pressure wounds are nutritional support and offload pressure.</p>	<p>Item 9: Diabetic foot ulcers generally appear on weight bearing surfaces of the feet, are typically red with well-defined wound edges and may have moderate to large amounts of exudate.</p>
<p>Item 3: Older adults may be more likely to suffer from wounds because of</p>	<p>Item 10: The right dressing should</p>
<p>Item 4: Pressure wounds should be back-staged as they heal.</p>	<p>Item 11: What happens to the skin in 2 hours can take 3 months to 1 year to heal.</p>
<p>Item 5: Granulation tissue refers to</p>	<p>Item 12: Mr. JT, age 86, has been a resident in SNF for 10 days. He is status post CVA [...]</p>
<p>Item 6: When documenting the wound edges and peri-wound area you should describe a minimum of 4 cm from the wound.</p>	<p>Item 13: his morning I noted a 4x4 purple localized area on his coccyx. [...] . I am concerned that Mr. JT is developing a stage 1 coccyx wound.</p>
<p>Item 7: Diabetic lower extremity ulcers should be classified as partial or full thickness.</p>	<p>Item 14: Based on my assessment of the patient and the condition of his skin, I would like to initiate the pressure wound protocol, including a skin barrier and nutritional intervention.</p>
	<p>Item 15: His past medical history includes hypertension, atrial fib, prostate cancer, and diabetes type 2[...]. His medications include [...]</p>

Pressure Injury (Wound) Module Summary

Figure 1. Results Summary Pre-Test vs Post-Test



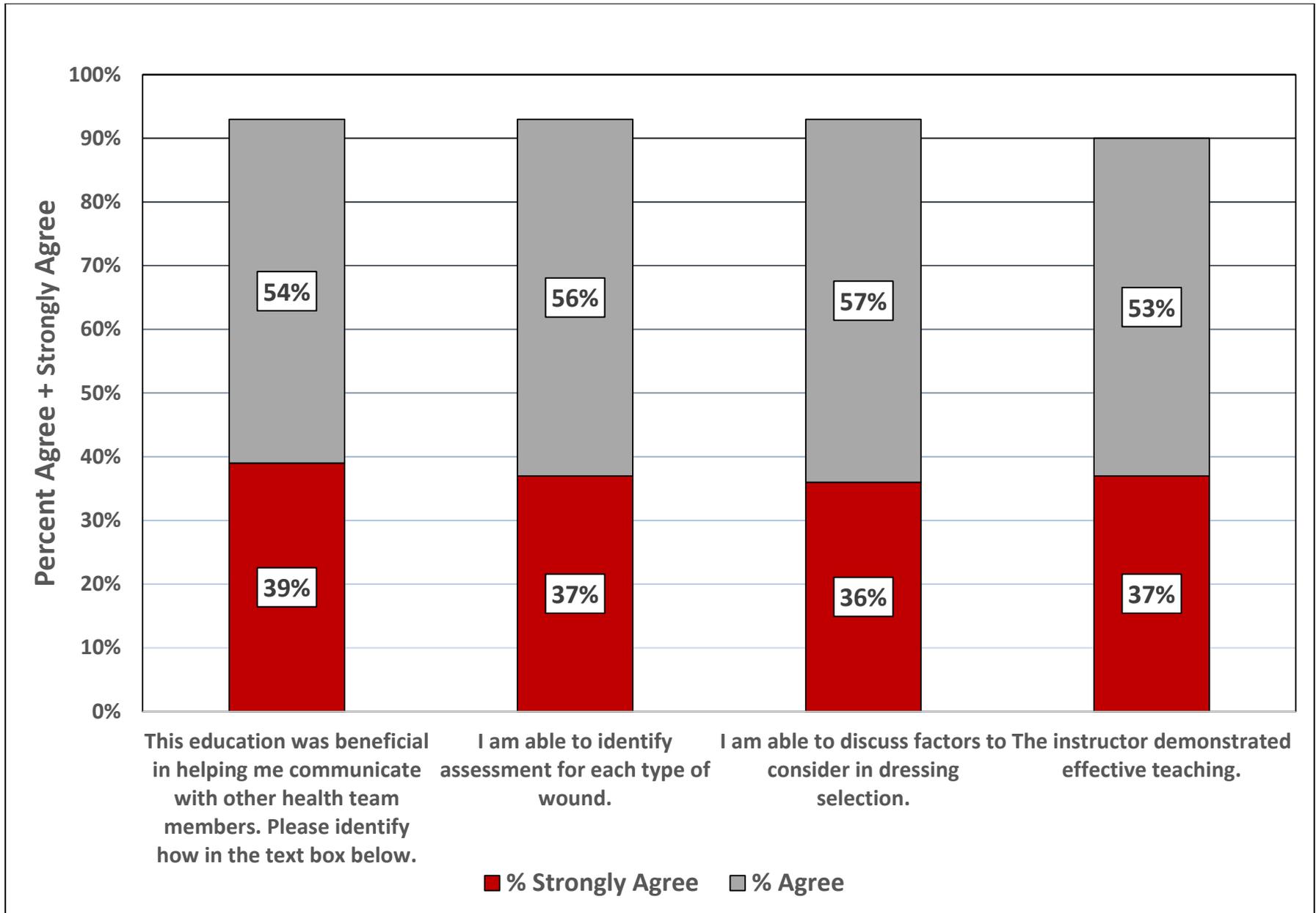
Summary of Statistical Analysis: Significance was calculated using the Real Statistics Resource Pack software (Release 5.4). Copyright (2013 – 2018) Charles Zaiontz. www.real-statistics.com. The data analysis tool used was Chi-square and the more conservative Fisher Exact Test (due to relatively small sample size) for Independence using contingency tables ($\alpha=0.05$). Effect size measured with Cramer's V (Kim, 2017).

Pressure Injury (Wound) Module Summary

LOCATION		Scores Decreased		Scores Increased		No Change in Scores		Total	
		Count	%	Count	%	Count	%	Count	%
Bethany Village n = 102	LPN			36	13.9%	28	10.8%	64	24.7%
	NP			1	0.4%		0.0%	1	0.4%
	RN			9	3.5%	7	2.7%	16	6.2%
	RN - AD			14	5.4%	7	2.7%	21	8.1%
	Total			60	23.2%	42	16.2%	102	39.4%
Eliza Bryant n = 45	LPN			14	5.4%	18	6.9%	32	12.4%
	NP			1	0.4%	2	0.8%	3	1.2%
	RN			1	0.4%	1	0.4%	2	0.8%
	RN - AD			6	2.3%	2	0.8%	8	3.1%
	Total			22	8.5%	23	8.9%	45	17.4%
Kendal of Oberlin n = 26	LPN			8	3.1%	5	1.9%	13	5.0%
	NP			1	0.4%		0.0%	1	0.4%
	RN			5	1.9%	2	0.8%	7	2.7%
	RN - AD			2	0.8%	3	1.2%	5	1.9%
	Total			16	6.2%	10	3.9%	26	10.0%
Shepherd of the Valley n = 86	LPN			26	10.0%	23	8.9%	49	18.9%
	RN			8	3.1%	8	3.1%	16	6.2%
	RN - AD			10	3.9%	10	3.9%	20	7.7%
	N/A				0.0%	1	0.4%	1	0.4%
	Total			44	17.0%	42	16.2%	86	33.2%
ALL LOCATIONS n= 259	LPN			84	74	32.4%	28.6%	158	61.0%
	NP			3	2	1.2%	0.8%	5	1.9%
	RN			23	18	8.9%	6.9%	41	15.8%
	RN - AD			32	22	12.4%	8.5%	54	20.8%
	N/A				1	0.0%	0.4%	1	0.4%
GRAND TOTAL				142	117	54.8%	45.2%	259	100.0%

Pressure Injury (Wound) Module Summary

Evaluation of Learning Outcomes



Describe how the education received in this module will change the way you provide care.

WOUND	THEME	COUNT
15	Comprehension	How to identify the difference stages of pressure injuries Better understanding of different types of wounds for identification I will be able to understand the staging and process of wound healing alot better. Be more aware of the different types of wounds and where they are locazted.
11	Patient Care	I will be more alert to a using the appropriate dressing/treatment monitor the wound closely and daily. to be more observant of pressure areas
10	Communication	Better description and treatment of wounds Continue to encourage repositioning, nutrition to prevent pressure areas. Asking patients about their skin and any issues will be a part of my vitals. Reminding of the key points when communicating..
0	Call 911	
8	Not Applicable	
9	Assessment	Can better detect different types of wounds It will help me identify which type of wound require what type of treatment More attention to detail when doing an assessment It gave me a better basis for assessing the wound content
0	Call 911	
2	Efficiency	can work efficiently I will be more alert to a using the appropriate dressing/treatment
198	No Response	
5	Out of Context/Indeterminate	ok very goo d wounds and sbar
0	Will not change	
258	TOTAL	

Identify one new assessment skill you learned from this module that you will incorporate into your practice

WOUND	Theme	Sample Comments
5	Communication	Better documentation communication
131	Assessment	Assessing the feet more thoroughly. assessing wound characteristics and staging pressure ulcers Assessment & background should be thorough to provide adequate information for the physician, PA, or NP to make proper recommendations. Determining what time of wound it is, not always going with pressure. I am able to assess wound more accurately with the help of the descriptions of the different types illustrations presented to describe how each wound looks
13	Will not change/Will Not Use/No new knowledge	Nothing new at this time Good review. great learning tool
58	Comprehension	to improve knowledge and skills pertaining to wounds. to understand the different assessments for each type of wounds Increased understanding of Diabetic ulcers and 4 cm of periwound is observed I learned that arterial wounds can be on the tips of toes as well as pressure areas. learned how to better define different stages of pressure ulcers
21	Not Applicable	
7	Out of Context/Indeterminate	all areas Neuropathic wounds ok
22	No Response	
1	No comment	
1	Efficiency	organization
259	TOTAL	

How can we improve this learning experience?

WOUND	THEME	COUNT
102	No Changes Needed/All good	<p>This module is appropriate. The module was helpful and easy to follow The information is relevant and up to date. I do not have improvement suggestions for this module. It hit all the pertinent factors. Instructors that seem passionate about the subject matter.</p>
48	Not Applicable	
11	Assessment	<p>This program should tell the wrong answer and a rationale to improve knowledge and skills. Cover what you have in the test please. Thank you ask questions along the way again just giving feedback after the pretest on how the nurse did, [...]</p>
9	No comment/Unknown/Unsure	<p>not sure no input no comment</p>
5	Out of Context/Indeterminate	
7	Format	<p>pamphlets or handouts to keep make the power points available after the course is completed Again having the power point able to be enlarged would allow the learner to follow along. Sample of SBAR with information [...]</p>
22	No Response	
41	Content	<p>Give more examples of wounds earlier appearances and process of healing Explain tx specifically for arterial and venous to implement prior to contacting MD. More images of various types of wounds one might come across during rehab and LTC care more discussion to include the different types of wounds more detail on treatments and products - pressure relieving devices</p>
4	Add, Revise Case Studies	<p>Provide more examples/case studies Provide more case study examples. More case studies to practice the SBAR method.</p>
10	Other	<p>Visual learning re-narrate the presentation not a computer person like inservices live. More interactive</p>
259	TOTAL	

Works Cited

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