Identifying SRNAs Individual Learning Preferences Utilizing The VARK Learning Inventor Tool

James Eads, MBA, MSN, CRNA, APRN
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

- Passing the NCE is the final hurdle individuals must achieve to receive recognition as a Certified Registered Nurse Anesthetist (CRNA)
- Expanding students’ capabilities to complete their respective programs and pass the NCE is a priority.
- In 2011, the national average first-time passage rate of the NCE was 89.1% (NBCRNA, 2023).
- In 2021, the first-time passage rate was reduced to 84.1% (NBCRNA, 2023).
- In 2021, The failure rate for repeat candidates taking the NCE was 38.8% (NBCRNA, 2023).

Definition

Metacognition is individual recognition of how he/she learns, and meta-learning is the student’s self-assessment of his/her learning requirements, issues, and accomplishments (Wisiker, 2004).

LITERATURE REVIEW

LEARNING STYLES

- Conceptual learning starts once concept and introduces another concept that is combined with the first concept. Classroom instructors have incorporated conceptual learning using video and audio.
- Longitudinal study examined the impact of using search engines as a means of gaining knowledge. (Unsvarby, 2021)

ANESTHESIA EDUCATION

- Anesthesiology education groups that actively participated in medical simulation had higher levels of knowledge and scored higher satisfaction scores when compared to the group that participated by observing the medical simulations (Hillman, 2013).
- A research study involved hands-on advanced airway techniques to address the scenario of a difficult airway. A group of first-year medical students learned to maintain laryngeal mask airway in the Advances SimCenter. (Nycz, 2013)

FACTORS AFFECTING LEARNING

- Goulden’s (2019) descriptive study examined how knowledge retention can be enhanced by integrating students’ experiences and interests with classroom instruction.
- O’Dell’s (2015) studied culture’s potential significance on learning styles. Turkish geography students favored two learning styles; assimilating and converging. Western geography students only favored the kinesthetics.

LEARNING THEORIES

- Kolb Learning Theory - According Kolb (2001), individuals were able to learn by using their past experiences to interact with their current situation. The latest version (4.0) of the Kolb learning style identified learning preferences into nine categories.
- Fleming VARK Theory - Fleming’s theory summarized that every individual had a primary method of learning that benefitted him/her the greatest. The four main methods were Visual, Auditory, Reading, and Kinesthetics.

PROJECT METHODS

- An educational goal is to implement a project that aimed to increase the percentage of NCE first-time graduates at the project site. Project was approved by the IRB and the NBCRNA IRB.
- Primary goal was to assign each project participant’s learning project was individualized to their learning style. The project site’s NCE pass rate was an 84% 15-minute presentation about the VARK learning theory and the VARK learning inventory tool.
- The project SRNAs were provided with a post-survey questionnaire about self-perceptions of utilizing individual learning styles. The project participants were given a 15-minute presentation about the VARK learning theory and the VARK learning inventory tool.
- The project SRNAs were provided with a post-survey questionnaire that clarified the pre-survey questionnaire was administered to the project SRNAs.
- SRNAs were provided with a 15-page learning profile specific to their individual learning preference that had been identified.
- A project’s learning inventory tool that measured their individual learning preference.
- A post-survey questionnaire that clarified the pre-survey questionnaire was administered to the project SRNAs.

EVALUATION

- All military SRNAs volunteered to participate in the EBP.
- Twenty military SRNAs were identified with a single learning preference.
- Project SRNAs were administered the VARK learning inventory tool that measured their individual learning preference.
- The presentation for individual learning preferences produces a positive effect on the group’s learning performance. (Table 1). Table 1.
- Expansion of simulation training (Kinesthetic) for didactic education would optimize the individual learning preference that was recognized for the EBP group (Table 2). Table 2.
- The Evidence-Based Project (EBP) results identified that hands-on learning (Kinesthetic) is more relevant than lectures (Auditory, Visual) for understanding didactic educational material (Table 1).
- Other military educational programs have implemented the project for the students leading to a long-term impact.
- Create different methodologies for presenting the information contained within the current 15-page learning profile. This would include audio tapes, a podcast session, or an online video presentation on YouTube.
- SRNAs that drop from the educational program for academic reasons would have their individual learning preference identified. Continuous evaluations of future SRNAs would monitor correlations between individual learning preferences and program success.

IMPACT ON PRACTICE

- The VARK learning style is relevant to identifying students’ learning preferences.
- The use of metacognition supports a doctoral nurse anesthesia student critical thinking skills when transferring didactic knowledge into clinical knowledge.
- Alternative learning methods must be considered so that the percentage of students failing to complete nurse anesthesia programs or failing the NCE is decreased.
- Increasing the percentage of students who pass the NCE will positively decrease the nationwide shortage of anesthesia providers.

CONCLUSIONS

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Many human trafficking screening tools and protocols have been developed and published, but none have been validated for the healthcare setting.

Healthcare education must encompass:
- Health indicators of trafficking
- Trauma-informed care
- Holistic, victim-centered approach
- Clear actions to take

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### LITERATURE REVIEW

- Human trafficking is the recruitment, harboring, transportation, provision of, or obtaining of a person for commercial sex acts, labor, or services through force, fraud, or coercion. Takes an action, by a means, for a purpose.
- 4,817 victims have been identified in Illinois since 2007 through the National Human Trafficking Hotline
- Approximately 68.3% of trafficking survivors accessed healthcare through the emergency department while being trafficked.
- Victims often do not self-identify due to shame, fear of the trafficker, arrest, or deportation, lack of support, controlled movement, and lack of understanding of the U.S. healthcare system.
- Healthcare providers fail to identify trafficking victims due to:
  - Lack of knowledge about screening or indicators
  - Bias or preconceived ideas about victims
  - Lack of knowledge about how to care for trafficking victims or survivors
  - Lack of protocols to follow when a possible trafficking victim is identified.

### PROJECT METHODS

**Education**
A voice-over PowerPoint presentation was created and provided to all colleagues who have patient interaction in the emergency department. Information was utilized from:
- Central Illinois Human Trafficking Task Force
- National Human Trafficking Resource Center (Polaris)
- HEAL (health, education, advocacy, linkage) trafficking

**Resource Binders**
Accessible quick-reference binders placed in areas conveniently accessible to emergency department colleagues contained:
- Screening tools for human trafficking
- Paper copy of education
- Protocol to be followed
- Contact information for local resources for trafficking victims

SurveyMonkey was utilized to conduct a pre-test before education, a post-test immediately following education, and a second post-test six weeks following education to assess participant confidence and knowledge about recognizing trafficking victims and providing care.

### EVALUATION

#### Confidence
Three Likert Scale questions were used to assess participant confidence in identifying, caring for, and providing appropriate resources to trafficking victims. Chi-Squared was utilized to determine the statistical significance of participant confidence

- A statistically significant increase in confidence was observed between the pre-test and post-test one immediately following education and again between the pre-test and post-test two six weeks following education.  

#### Knowledge

<table>
<thead>
<tr>
<th>Average Percentage of Correct Answers</th>
<th>Pre-test</th>
<th>Post-test 1</th>
<th>Post-test 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>63.39%</td>
<td>66.50%</td>
<td>70.43%</td>
<td></td>
</tr>
</tbody>
</table>

*Statistical significance of participant confidence level utilized p < 0.05 with one degree of freedom.

### IMPACT ON PRACTICE

- Increased awareness throughout the organization of human trafficking
- Two possible trafficking victims were identified and appropriate agencies were coordinated to respond
- Organizational policy development and implementation for the care of human trafficking victims
- Emergency department has been utilized by other areas to obtain resources, as content experts, when possible trafficked victims are recognized

### CONCLUSIONS

- Protocols must be clear and easy to follow
- Contact information for care coordination must be easily accessed
- Assigned computer-based learning would increase colleague knowledge, confidence, and awareness
- Resources that are location specific should be provided to all areas of the health system. All colleagues should have access to quick resources that allow them to provide appropriate care for potential human trafficking victims.

The goal is to create opportunity and prepare the survivor to rescue themselves. Not to impose pressure or force disclosure.

- Prioritize medical needs, social needs, and resources.
- Be aware of implicit bias.
- Educate, do not interrogate.
- Use qualified interpreters and respect cultural norms.
- Know state, local, and institutional reporting requirements.

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**SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE**  
**SCHOOL OF NURSING**
Implementation of a Prediabetes Class in the Primary Care Setting
Kristie Goeckner, MSN, RN, CDCES
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

Prediabetes needs to type 2 diabetes if left untreated.

Primary care providers play an important role in educating patients.

1,100+ patients with prediabetes enrolled in project within 12-month time period.

Nurse-led patient education can potentially improve treatment adherence, patient satisfaction, and understanding (Hinnenborn, 2023).

PROJECT METHODS

Developed two hour prediabetes course and handouts.

Attended provider and nurse meetings to explain project.

Flyers placed throughout small, rural clinic to advertise six classes from July to September.

Additional project site added at larger, urban clinic within same healthcare system for eight classes from October to November. Four more classes added at initial project site.

Total of 16 classes held from July to November with 33 participants with 11 additional no-shows.

Questionnaires measured at beginning and end of class. Follow-up phone calls three months after class participation.

IMPACT ON PRACTICE

- Increased patient knowledge
- Increased patient involvement
- Improved patient outcomes

CONCLUSIONS

Class participants reported the class motivated them to make changes to improve their health and categorized it as a 'real eye opener'.

Within this organization, Registered Dietitian Nutritionists and Diabetes Nurse Educators currently provide regular diabetes classes with similar content to the prediabetes class so this could become part of their normal job responsibilities.

LITERATURE REVIEW

Databases, Keywords, Timeframe
- CINHL, MEDLINE Complete, PubMed, Cochrane Collection Plus
- Prediabetes, education, outcomes, barriers
- 2016 to present

Literature Review Focus
- Defining prediabetes and identifying why it's a concern
- Identifying patient benefits of receiving education
- Identifying barriers preventing patient education
- Identifying critical elements to include in education

Significance
- The patient's risk of developing serious complications increases the longer the patient has prediabetes.
- Elevated blood glucose levels are already beginning to impact mortality and morbidity at the prediabetes stage (World Health Organization, 2016).

EVALUATION

After-class Questionnaire Results

Participant comments:
"I didn't realize prediabetes was such a big deal."
"I didn't realize how my habits were affecting my overall health."

Prediabetes Class Topics
- Nutrition
- Physical activity
- Sleep
- Stress
- Smoking cessation
- Available community resources
- Prediabetes and type 2 diabetes risk factors and diagnosis
# PROBLEM INTRODUCTION

- Seventy percent of all individuals aged 65 and older will require skilled nursing services at some point in their lifetime (Centers for Disease Control and Prevention, 2019).
- Costs of care have risen from 88 billion in 2000 to 168 billion in 2018 (Centers for Disease Control and Prevention, 2019).
- Unnecessary rehospitalizations cost the health care system 17 billion dollars annually (Amrithphale et al., n.d.).

## Impact of Mental Illness

- Deinstitutionalization beginning in the 1960s saw a demographic shift of individuals with mental illness into skilled nursing facilities.
- 65-90% of all skilled nursing home resident now have mental illness (Orth et al., 2020).
- The presence of mental illness increases the overall cost of care and now ranks in the top ten reasons for unnecessary rehospitalizations (Kang et al., 2018).

## Quality and Strategies

- Facilities with high proportions of mental illness were associated with higher rates of hospitalizations, lower staffing levels, increased use of physical restraints and lower staffing levels (Jester et al., 2020; Kim et al., 2013; Rahman et al., 2013).
- There is a general lack of validated interventions to reduce the impact of mental illness including preventing rehospitalizations (Orth et al., 2019; Molinari et al., 2017).

# LITERATURE REVIEW

- Comprehensive literature review within CINAHL, Medline, Pubmed for relevant material from 2009-present.
- Review focused on themes including mental illness in nursing homes, the impact of rehospitalizations, mental illness and quality, interventions to reduce rehospitalizations, and checklists in healthcare.
- The increased burden of mental illness and associated behavioral manifestations represent a clear risk to healthcare quality, cost, and safety (Grabowski et al., 2009; Orth et al., 2020; Ouslander et al., 2010; Rahman et al., 2013).
- Nursing facilities are unprepared to manage complex residents with mental illness due to lack of education, lower staffing levels, and poor engagement with advanced clinicians (Benjenk & Chen, 2018;Orth et al., 2019; Molinari et al., 2017).
- Using checklists in health care are validated mechanisms to improve knowledge, improve quality and reduce errors (Gawande, 2010; Innocentti & Stefanone, 2021).

# PROJECT METHODS

- Meeting with facility stakeholders
- Proposal of project and objectives to stakeholders
- IRB and stakeholder approval of project.

- Review of literature and current evidence
- Development of training materials
- Pre-intervention retrospective data collection on rehospitalization rates using INTERACT tool.

- Development of behavioral intervention checklist to reduce rehospitalizations
- Training sessions with facility personnel on tool utilization and de-escalation techniques.

- Utilization of checklist
- Evaluation of intervention via nurse perception surveys and collection of rehospitalization data post checklist implementation.

# EVALUATION

- Six-month data collection period with inclusion of 143 residents with mental illness. 79.7% with Schizophrenia

- Pre-Checklist rehospitalization rate was 16.53%. Post-Checklist rehospitalization rate was 0. Limited statistical significance (p < 0.040)

- Secondary measure of lost census days lost to hospitalization was measured
  - Pre-Checklist mean was 8.79 days. Post-Checklist mean measured at 1.55 days. Statistically significant (p < 0.01).

- Nurse perception measured through interview surveys (N=13). Use was universal with perceived positive effectiveness rated at 76.9%

# IMPACT ON PRACTICE

- Improved autonomy and confidence
- Improved continunity of care
- Rapid access to evidenced based interventions in complex environment of care

# CONCLUSIONS

- A behavioral intervention checklist is a viable mechanism to address complex behavioral care issues and potentially reduce rehospitalizations through structured evidenced based interventions.
- Nursing personnel used the checklist consistently after robust training efforts and found the tool generally effective in managing residents with mental illness preventing unnecessary transfers.

- Further study needed as sample size within one skilled nursing facility was limited and the impact of the use of the checklist could not be tracked when rehospitalizations did not occur. Improvements with greater access to educational modules accounting for turnover and use of outside nursing personnel.