

Identifying SRNAs Individual Learning Preferences Utilizing The VARK Learning Inventory Tool

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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 (Wisker, 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. (Ramadhevi, 2022)
- Longitudinal study examined the impact of using search engines as a means of gaining knowledge. (Bhattachary, 2022)

ANESTHESIA EDUCATION

- Anesthesia doctoral education group 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 (Blanie, 2018).
- A research study involved hands-on advanced airway techniques to address the scenario of a difficult airway with a parapharyngeal hands-on simulation was a realistic and beneficial (Chandran, 2021).

FACTORS AFFECTING LEARNING

- Gaunkar's (2019) descriptive study examined how knowledge retention can be enhanced by integrating students' experiences and interests with classroom instruction.
- Ozdemir'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 assimilating learning style

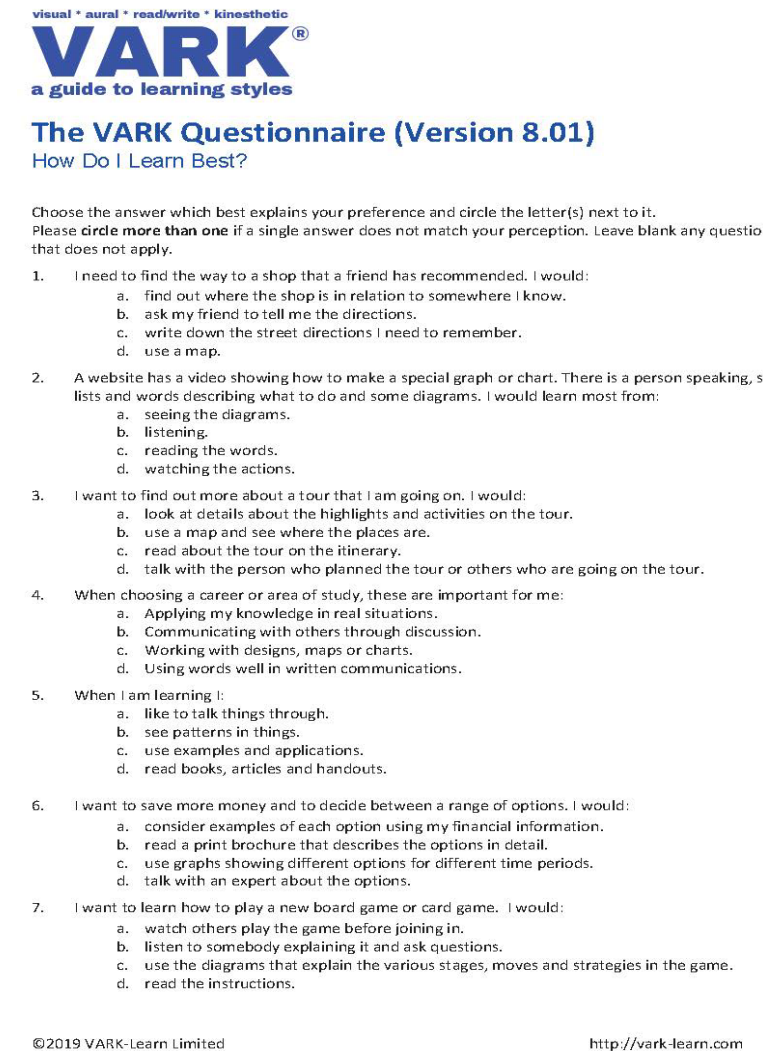
LEARNING THEORIES

- 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, kinesthetics.

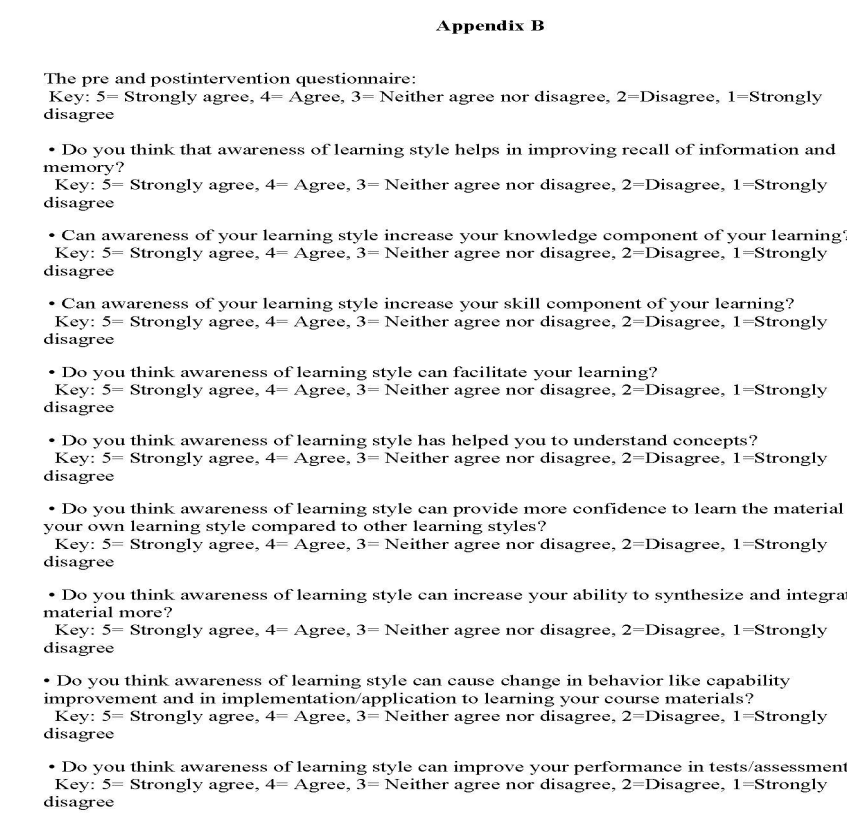
PROJECT METHODS

- An educational quality improvement project that aimed to increase the percentage of NCE first-time graduates at the project site. Project was approved IRB exempt by the SIUE IRB and the MCOE IRB.
- Primary goal was that each project participant's learning project was identified in phase 1 using the VARK Learning Inventory Tool (Appendix A). A secondary goal was to increase the students' capabilities that led to an increased percentage of NCE first-time graduates at the project site.
- SRNAs were provided with a pretest survey questionnaire about self-perception 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 administered the VARK learning inventory tool that assessed their individual learning preference.
- A post-survey questionnaire that replicated the pre-survey questionnaire was administered to the project SRNAs.
- SRNAs were provided with a 10-page learning profile specific to their individual learning preference that had been identified.

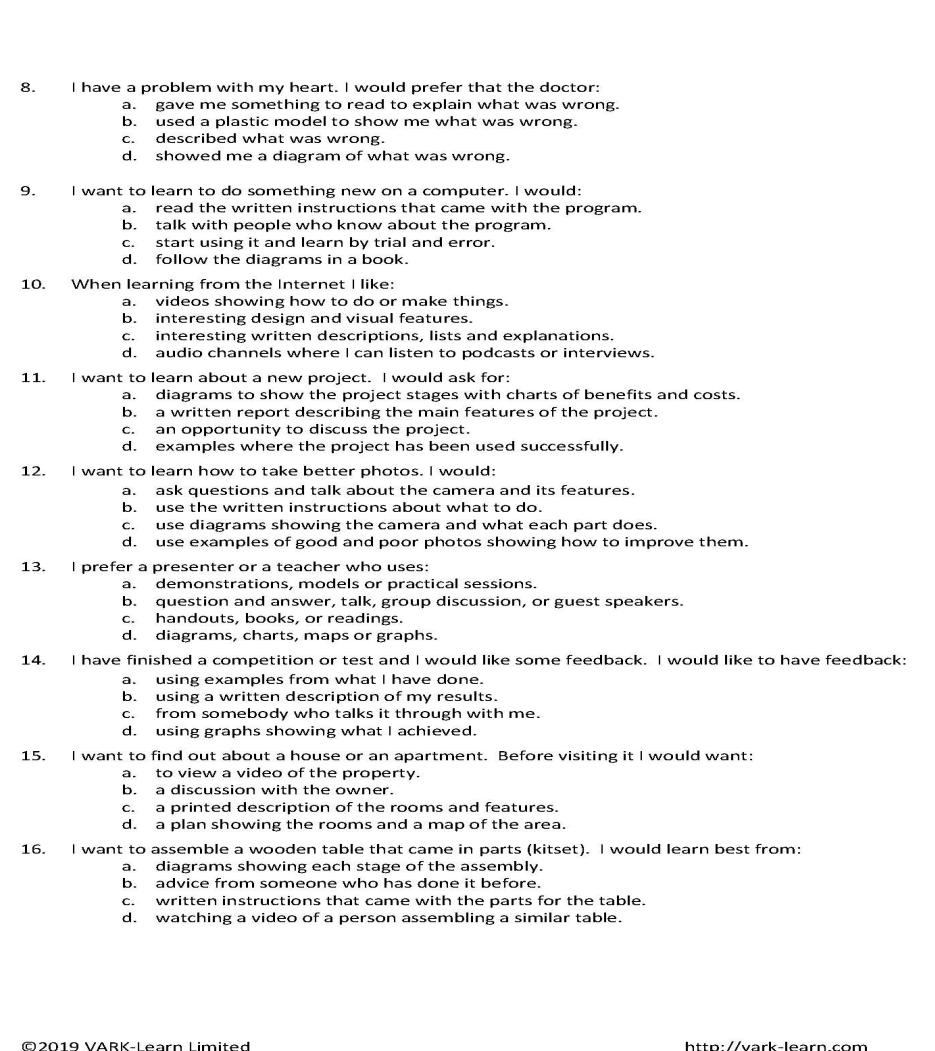
Appendix A page 1



Appendix B – Pre/Post Survey



Appendix A page 2



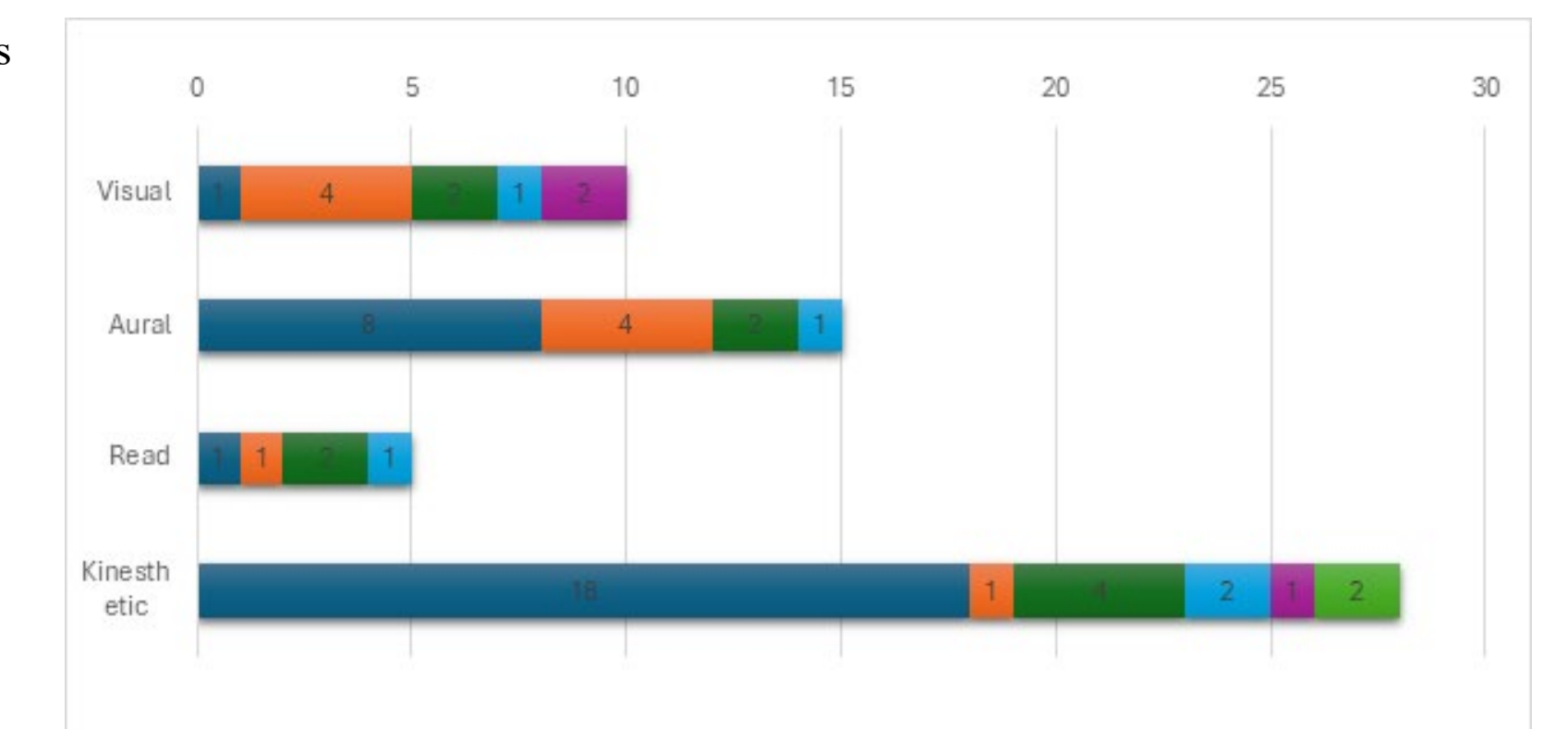
IMPACT ON PRACTICE

- The Evidence-Based Project (EBP) results identified that hands on learning (Kinesthetics) is more relevant than lectures (Aural, Visual) for understanding doctoral education material (Table 1).

Table 1.

Main Categories	Category Count
Aural, Kinesthetic	8
Kinesthetic	18
Read	1
Read, Kinesthetic	1
Visual	1
Visual, (Aural, Kinesthetic)	4
Visual, (Aural, Read, Kinesthetic)	2
Visual, Aural, Read, Kinesthetic	1
Visual, Kinesthetic	2

Table 2.



- Expansion of simulation training (Kinesthetics) for didactic education would optimize the individual learning preference that was recognized for the EBP group (Table 2).
- Other military educational programs have implemented the project for the students leading to a long-term impact.
- Create different modalities for presenting the information contained within the current 10-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.

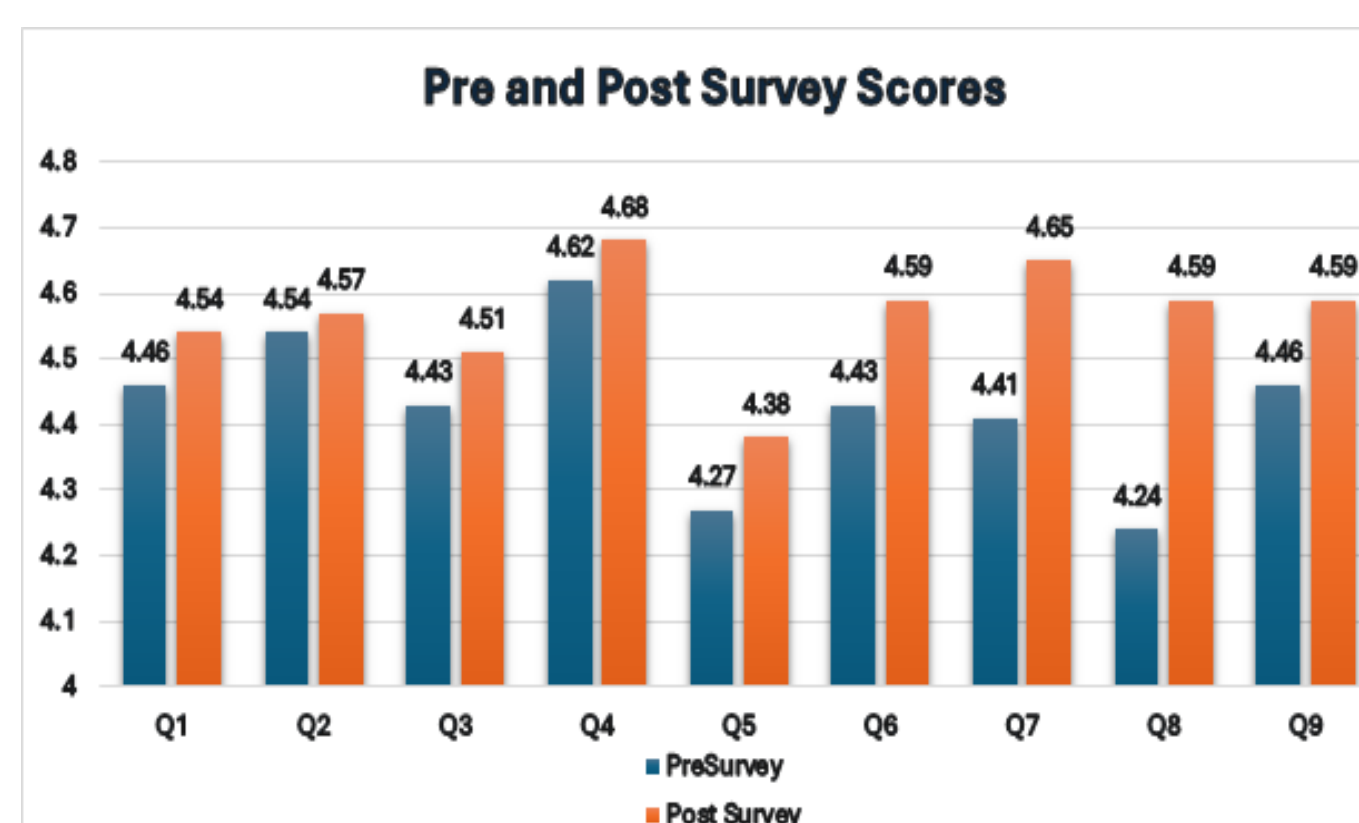
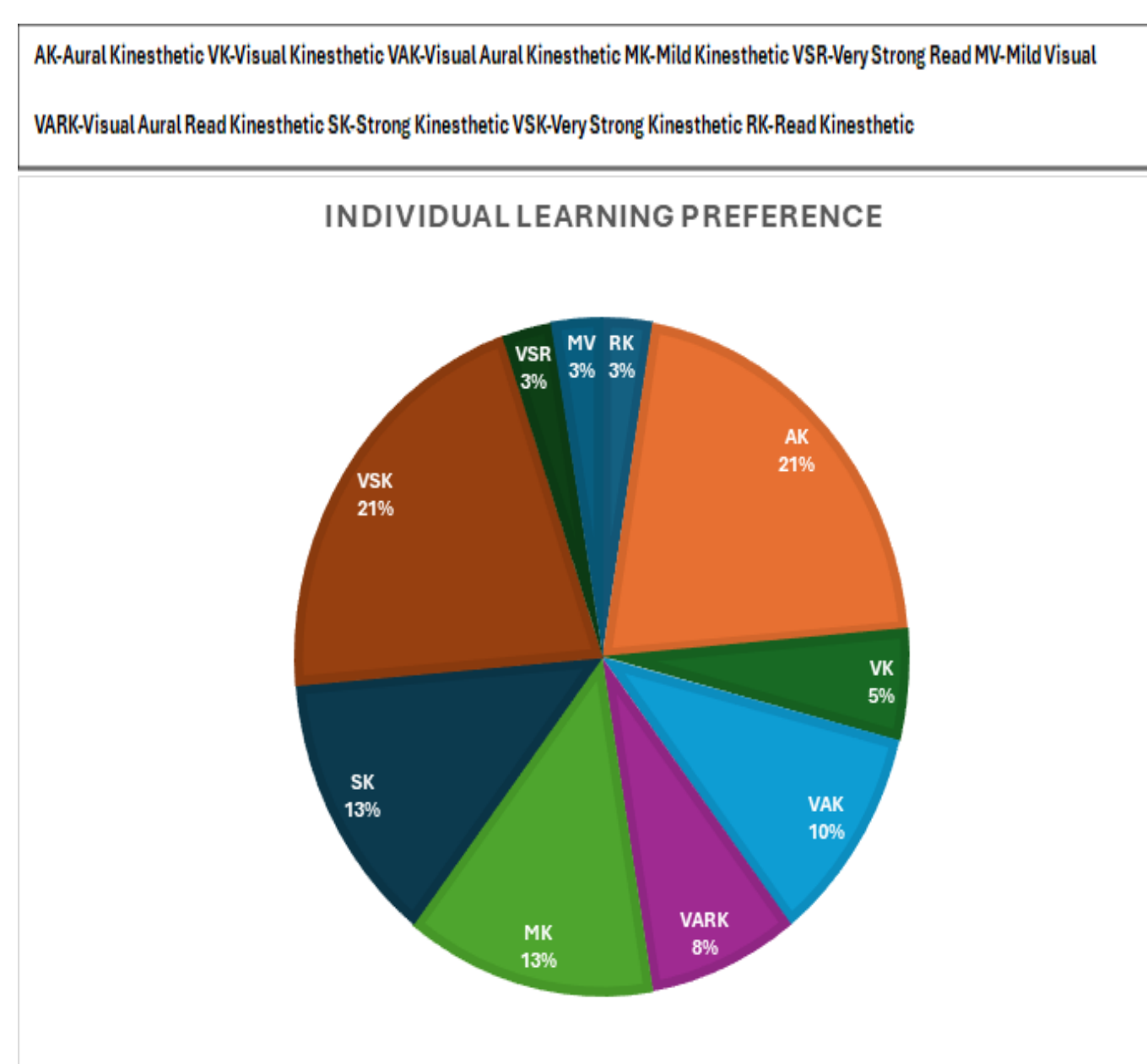
CONCLUSIONS

- The VARK learning style is relevant to identifying students' learning preferences.
- The use of metacognition supports a doctoral nurse anesthesiology 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 anesthesiology 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.

Acknowledgements

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EVALUATION



- 38 military SRNAs volunteered to participate in the EBP.
- Twenty military SRNAs were identified with a single type and eighteen were identified with a hybrid learning preference.
- Very Strong Kinesthetic was identified as the group's highest single learning preference (21%). Very Strong Reading and Mild Visual learning preferences were each identified as the lowest single learning preference (3%).
- The group's highest hybrid learning preference was the Aural Kinesthetic (21%) and the lowest was the Reading Kinesthetic (3%).
- 26% of the individual preferences contained the Visual component and thirty-nine percent contained the Aural 39% of the individual preferences.
- The Read component was included in 13% of the individual preferences. 74% of the individual preferences contained the Kinesthetics component.
- The 9 question presurvey group average (4.43) was compared with the postsurvey group average (4.57).
- The presentation for individual learning preferences produces a positive effect on the group's understanding of individual learning preferences.
- The group postsurvey average score (4.59) for Question 8 had the highest increase between presurvey and postsurvey scores for the 9 questions. This reflected a positive effect on the military SRNAs for implementing the actions identified on their 10-page learning profile.
- The primary objective could not be evaluated. First-time passage of the NCE for every participant wasn't measurable until three years after the SRNAs had completed the military educational program (limitation).

Human Trafficking and Resource Provision in the ED

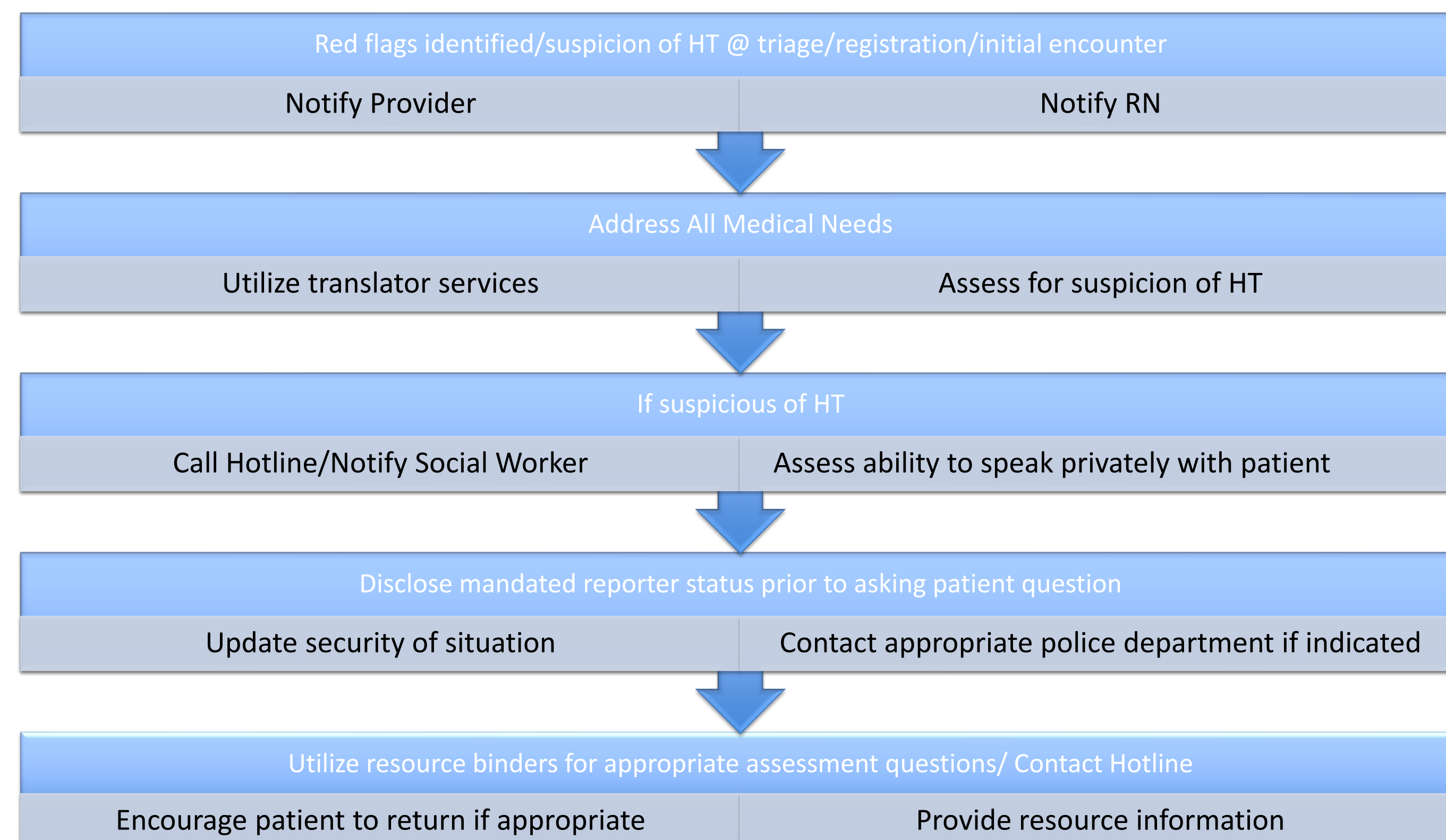
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PROBLEM INTRODUCTION

- 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.

LITERATURE REVIEW

- 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



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

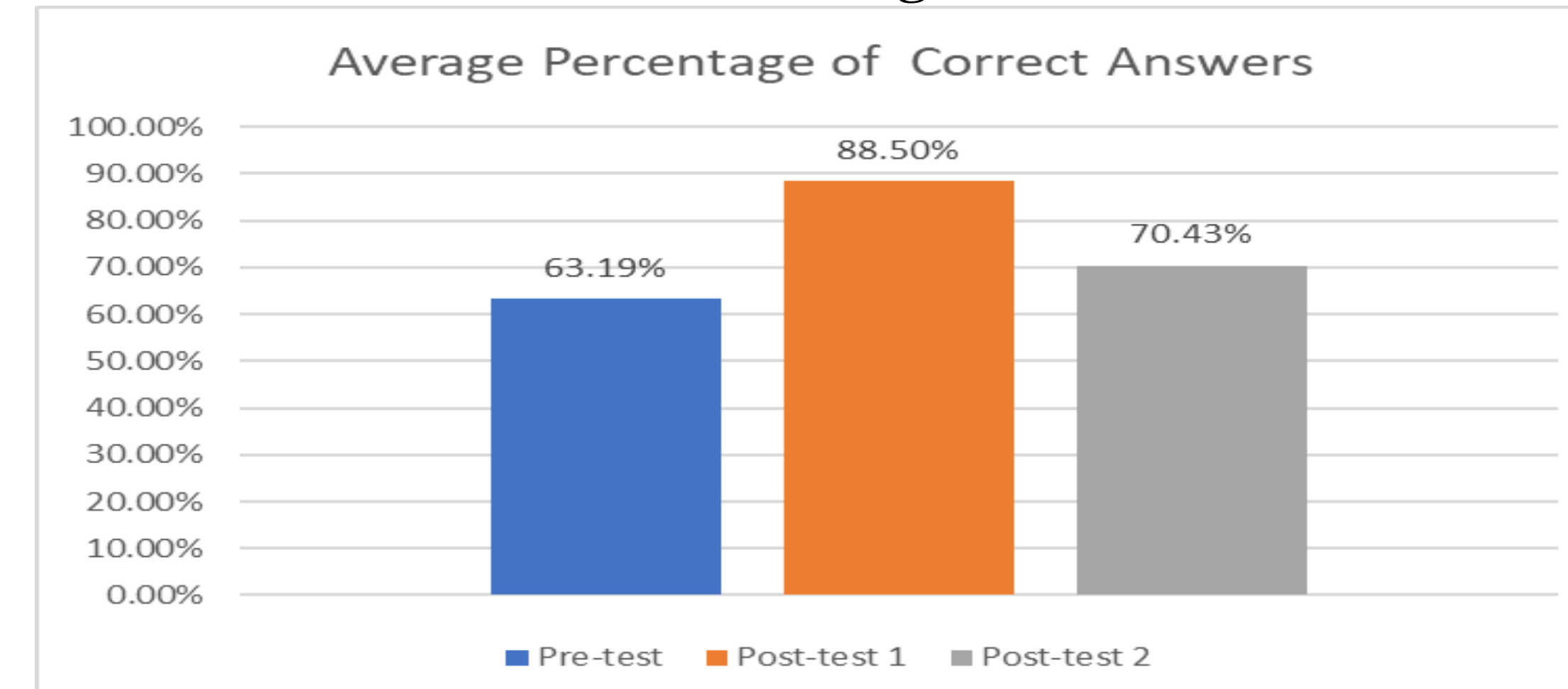
SurveyMonkey was utilized to conduct a pre-test before education, a post-test immediately following education, and a second post-test six weeks following education to assess participant confidence and knowledge about recognizing trafficking victims and providing care.

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



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

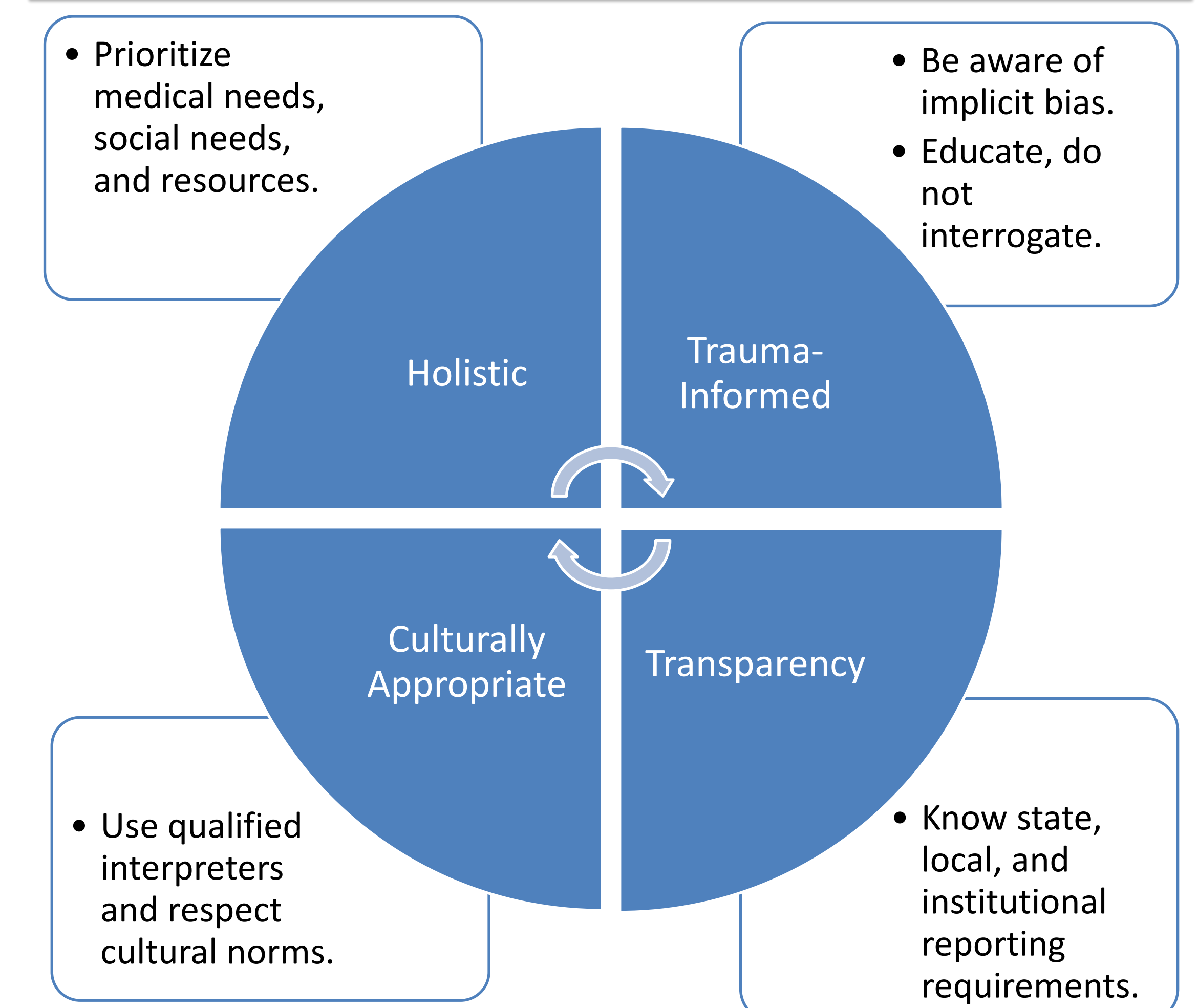
IMPACT ON PRACTICE

- 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.

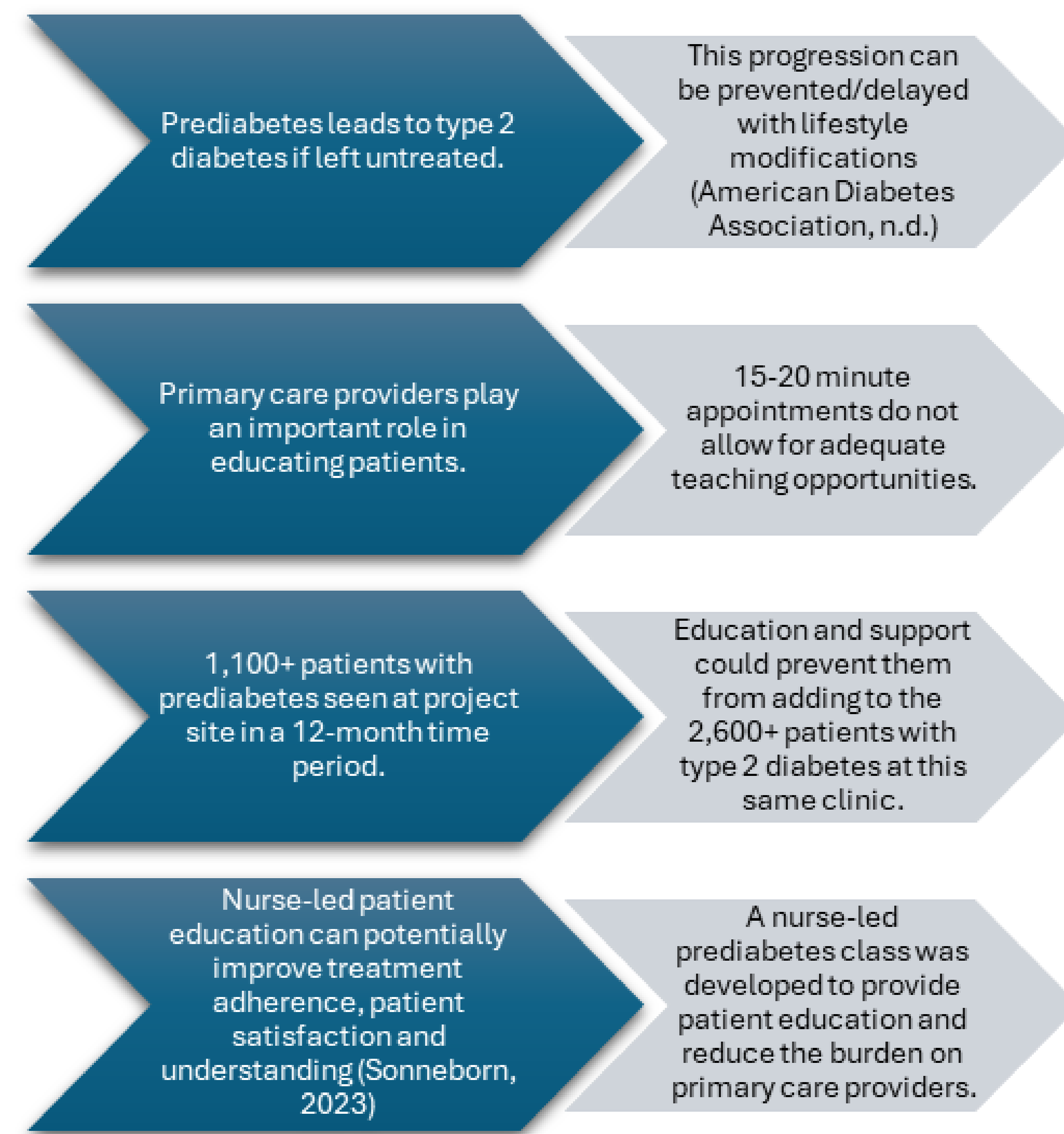
The goal is to create opportunity and prepare the survivor to rescue themselves, not to impose pressure or force disclosure



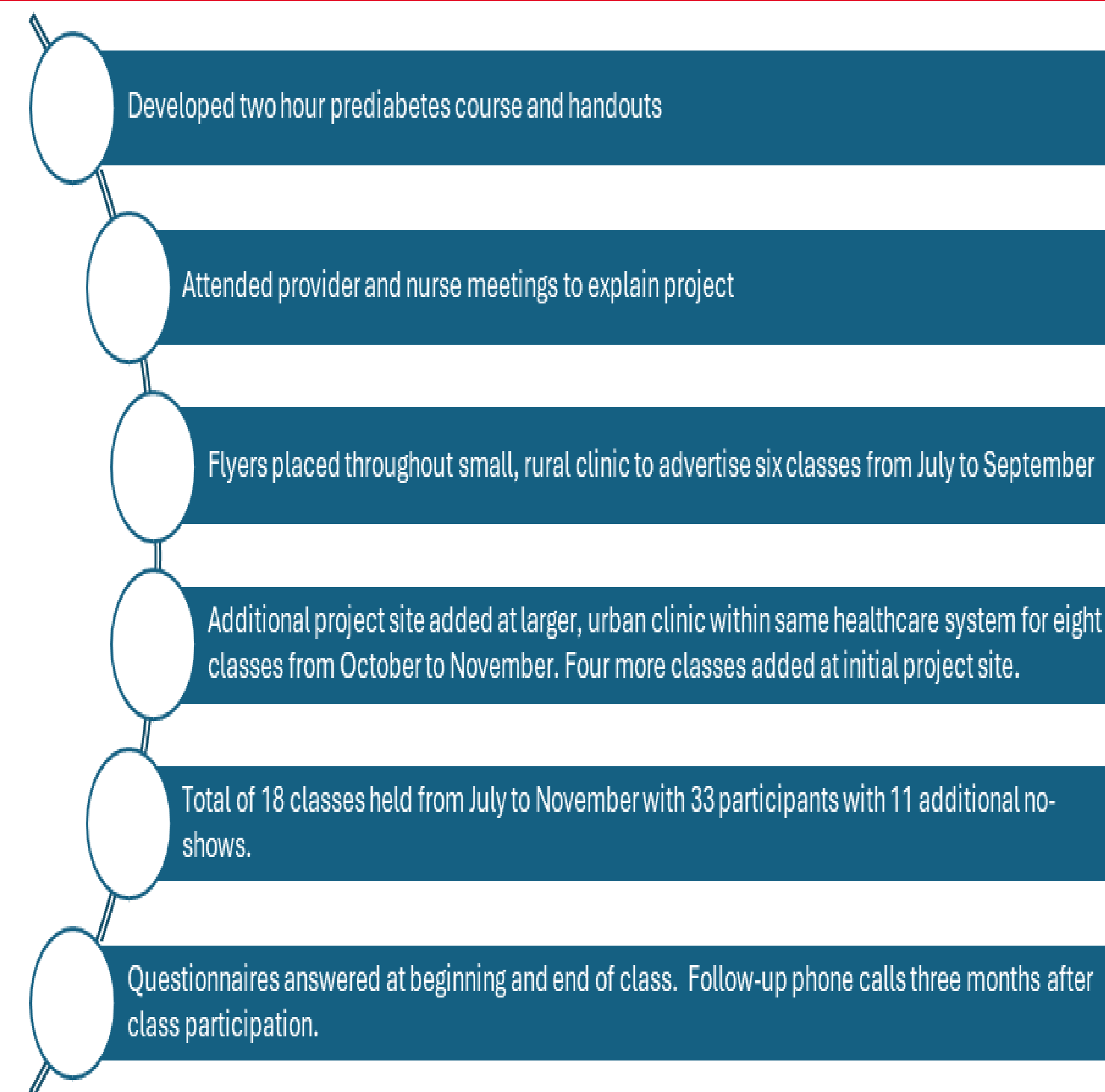
Implementation of a Prediabetes Class in the Primary Care Setting

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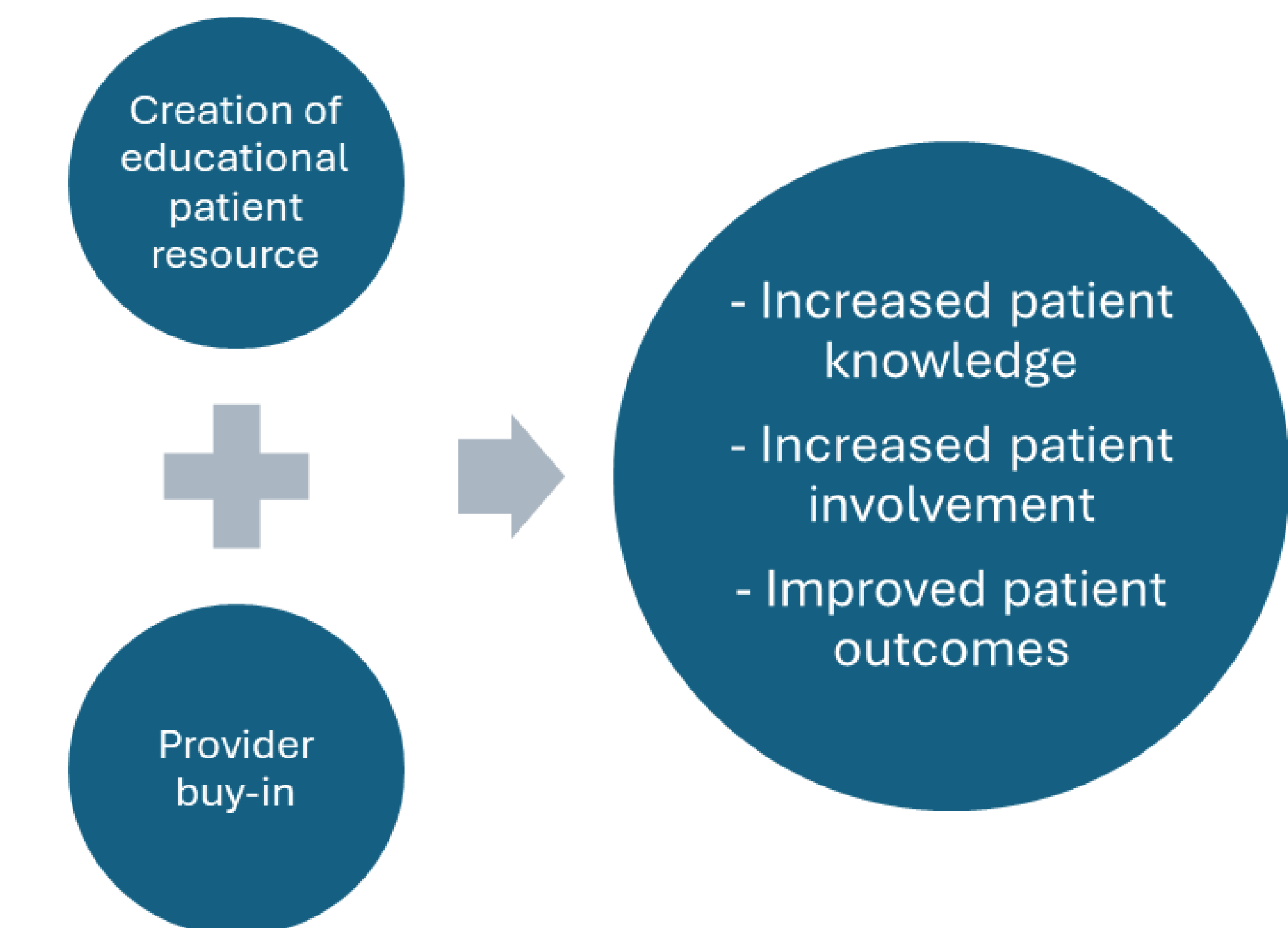
PROBLEM INTRODUCTION



PROJECT METHODS



IMPACT ON PRACTICE



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

- CINAHL, MEDLINE Complete, PubMed, Cochrane Collection Plus
- prediabetes, education, outcomes, barriers
- 2018 to present

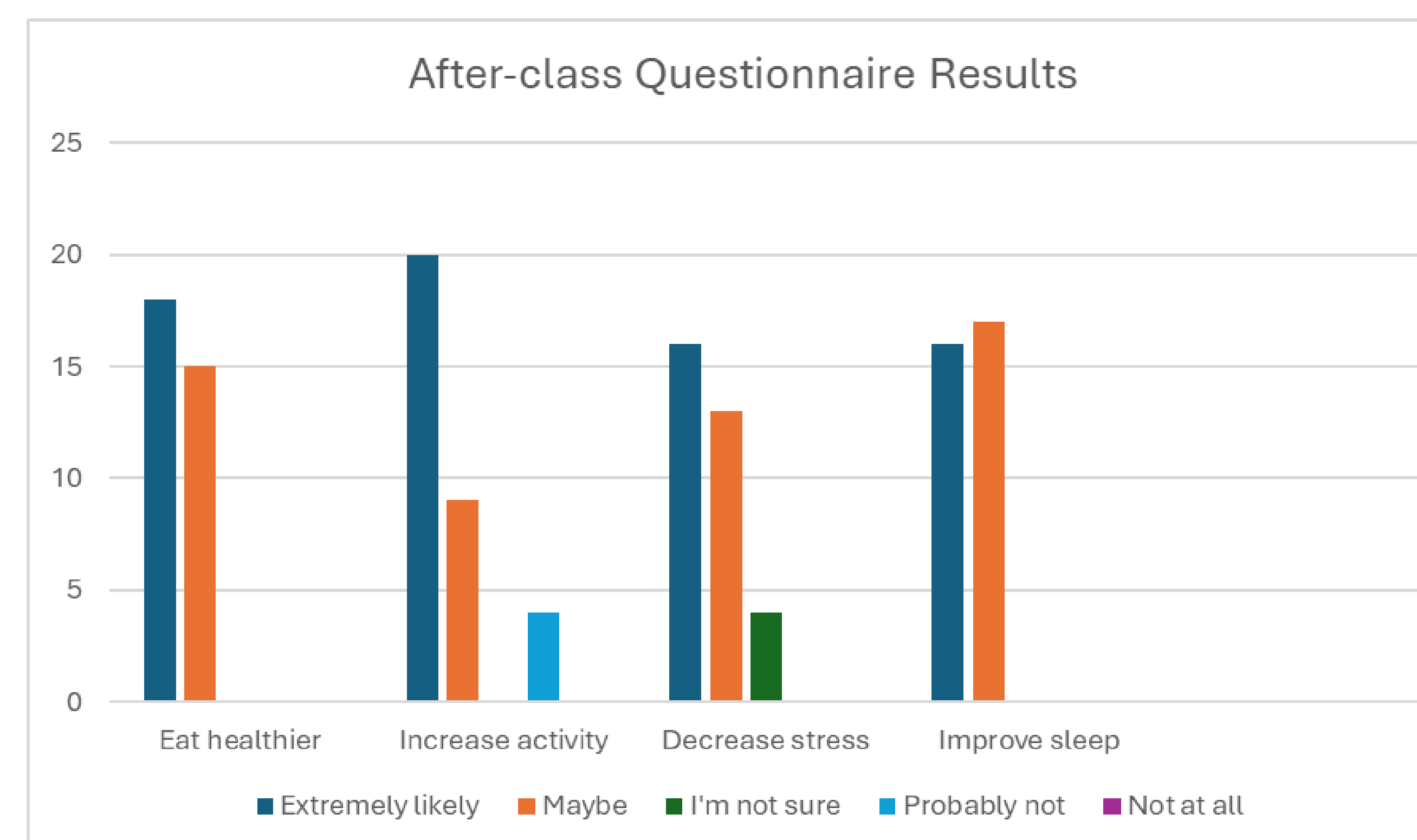
Literature Review Focus

- 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 morbidity and mortality at the prediabetes stage (World Health Organization, 2016)

EVALUATION



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



A Behavioral Intervention Checklist to Reduce Re-Hospitalizations in Residents with Mental Illness

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PROBLEM INTRODUCTION

Skilled Nursing

- 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 (Amritphale 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)

PROJECT METHODS

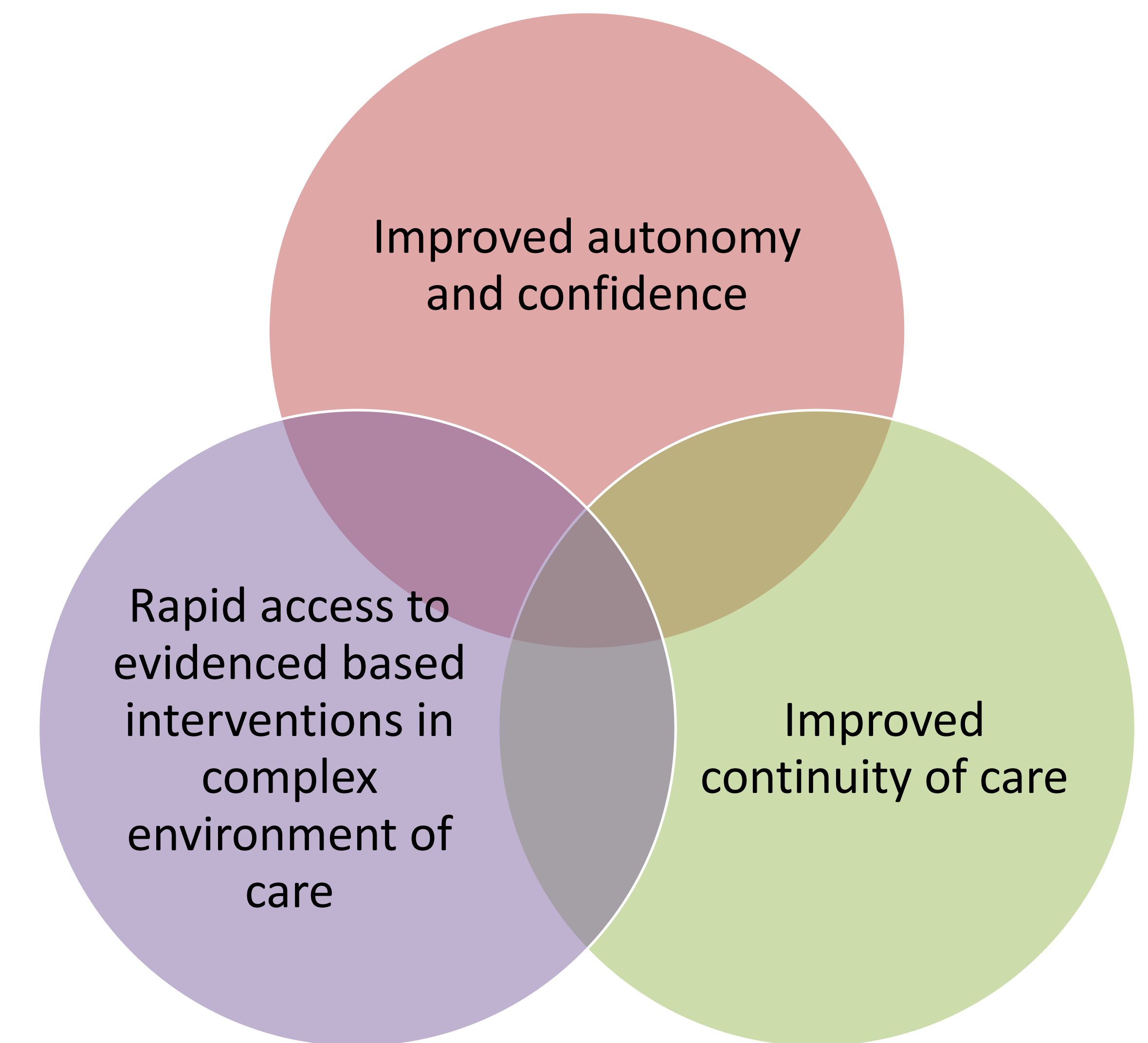
- Meeting with facility stakeholders
- Proposal of project and objectives to stakeholders
- IRB and stakeholder approval of project.

- 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.

IMPACT ON PRACTICE



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; Nolinari et al., 2017)

Using checklists in health care are validated mechanisms to improve knowledge, improve quality and reduce errors (Gawande, 2010; Innocenti & Stefanone, 2021).

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%

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.