

## Evidence-Based Practice Remote Patient Monitoring Curriculum Development: A Descriptive Pilot Project

### Abstract

The purpose of this project was to build a remote patient monitoring (RPM) evidence-based practice (EBP) curriculum using a curriculum matrix. The curriculum matrix includes technology, patient safety/quality, role, industry, and clinical skills to complete learning objectives regarding RPM information, applications, and clinical decision-making.

**Methodology:** This quality improvement project used subject matter experts to obtain a Content Validity Index (CVI) score on pre- and post-test surveys that measured RPM knowledge, experience, and attitude. The pre-test survey, RPM module, and post-test surveys were presented to online students obtaining a master's or doctorate.

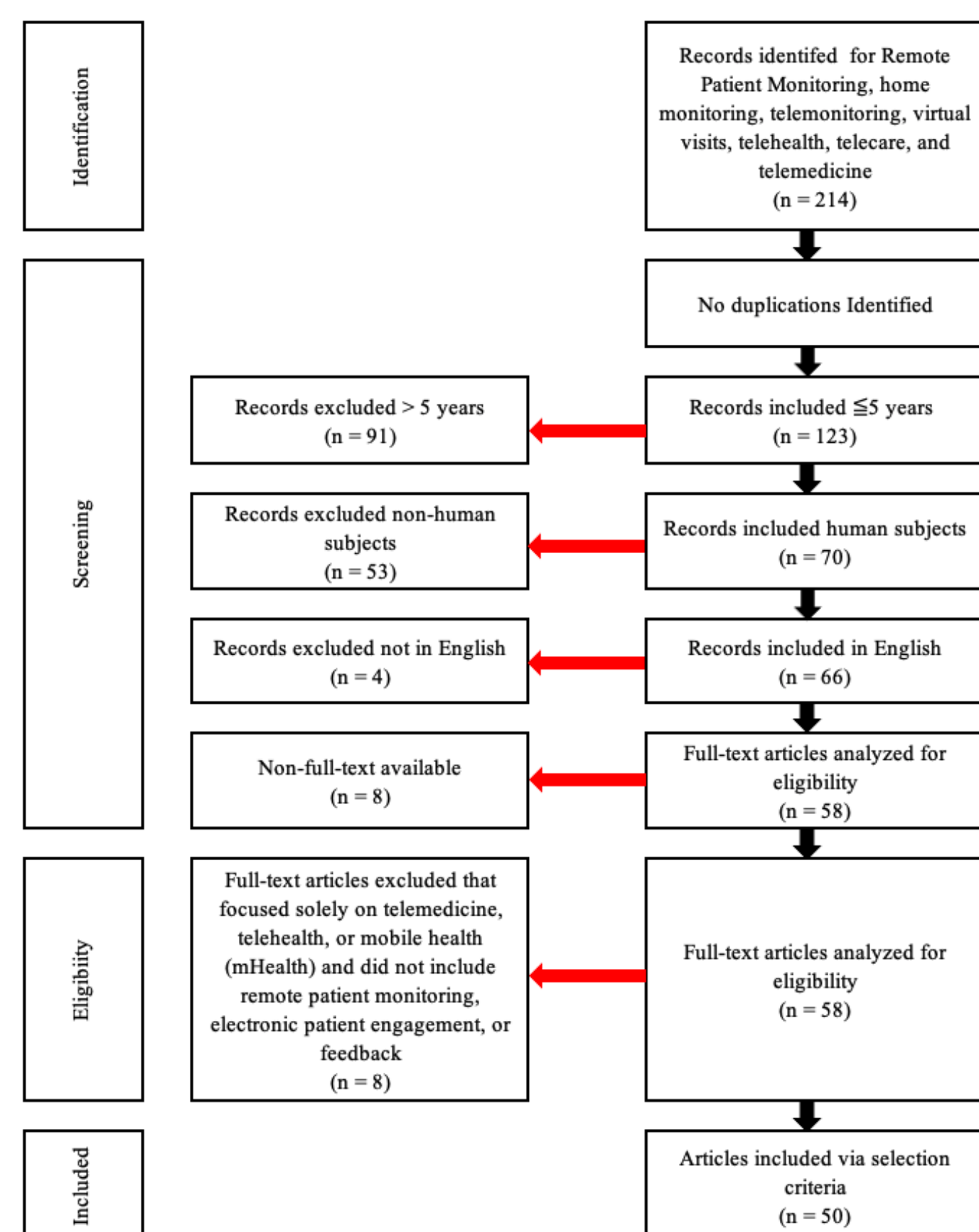
**Results:** Quantitative results indicated that knowledge and experience were significantly improved with RPM content. There was no difference in the attitude score, which may be related to the students themselves because of a high pre-survey score of 9.4 for attitude. The significant results from this pilot project warrant expansion to a larger sample and other universities.

**Keywords:** remote patient monitoring, telemonitoring, virtual visits, telecare, telemedicine, telehealth AND curriculum, education, instruction, provider education, certification

### Literature

The workforce shortage and the aging population are the contributing factors for remote patient monitoring curriculum clinical relevance that provides education for the provider and the patient to improve the level of confidence and competencies on the utility of RPM and patient engagement to improve RPM practice delivery, quality, and safety. RPM provides timely clinical decision-making interactions with the patient to detect the initial signs of deterioration, administer appropriate treatments and information to the patient. RPM provides expanded access to care, improves self-awareness, provides patient education that empowers patients to take control of their chronic conditions, decreases readmissions, and improves medication adherence. RPM has shown an improvement in the quality of life in patients with heart failure, and patients with diabetes have a reduction in their LDL cholesterol, blood pressure, and hemoglobin A1C.

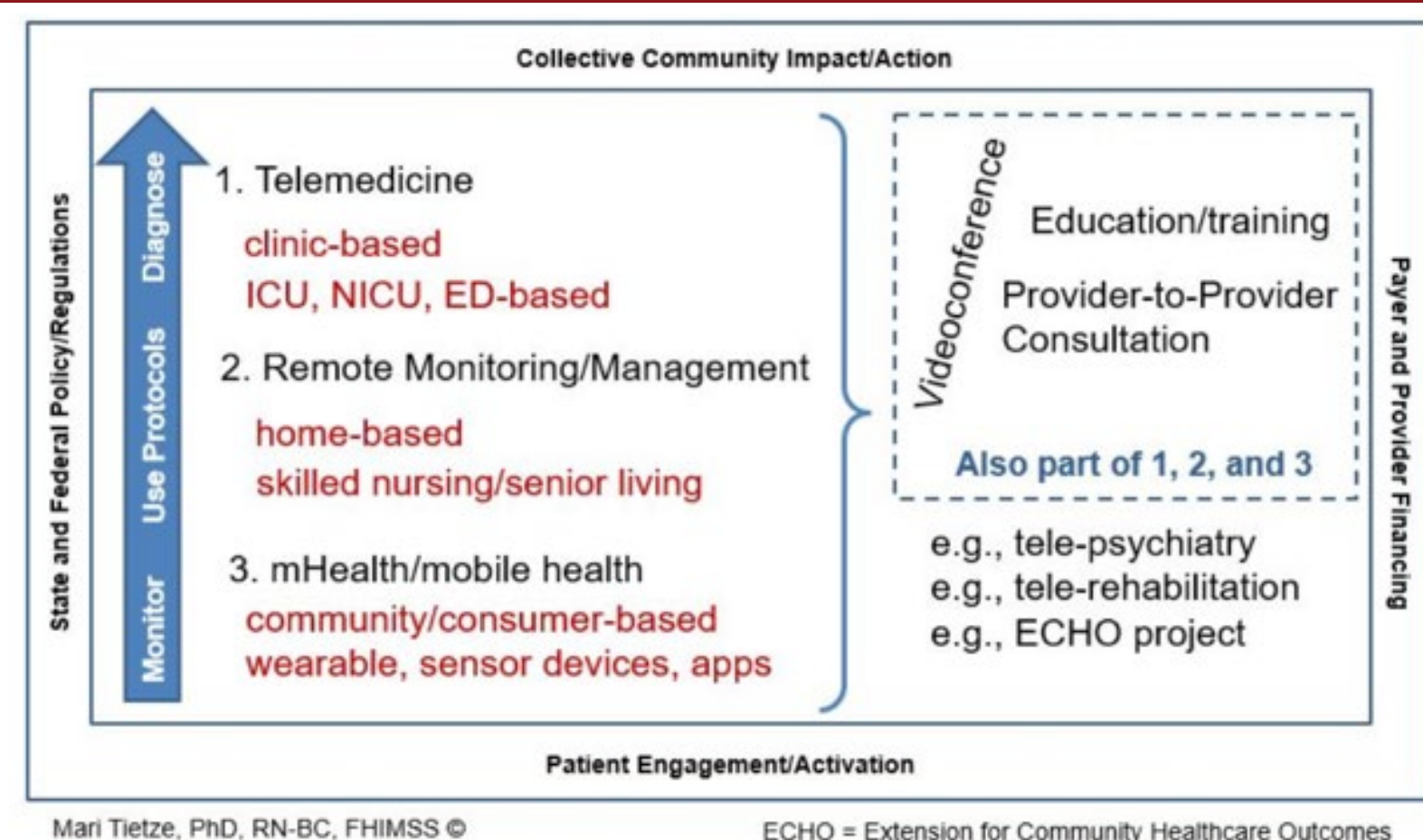
### Literature Diagram



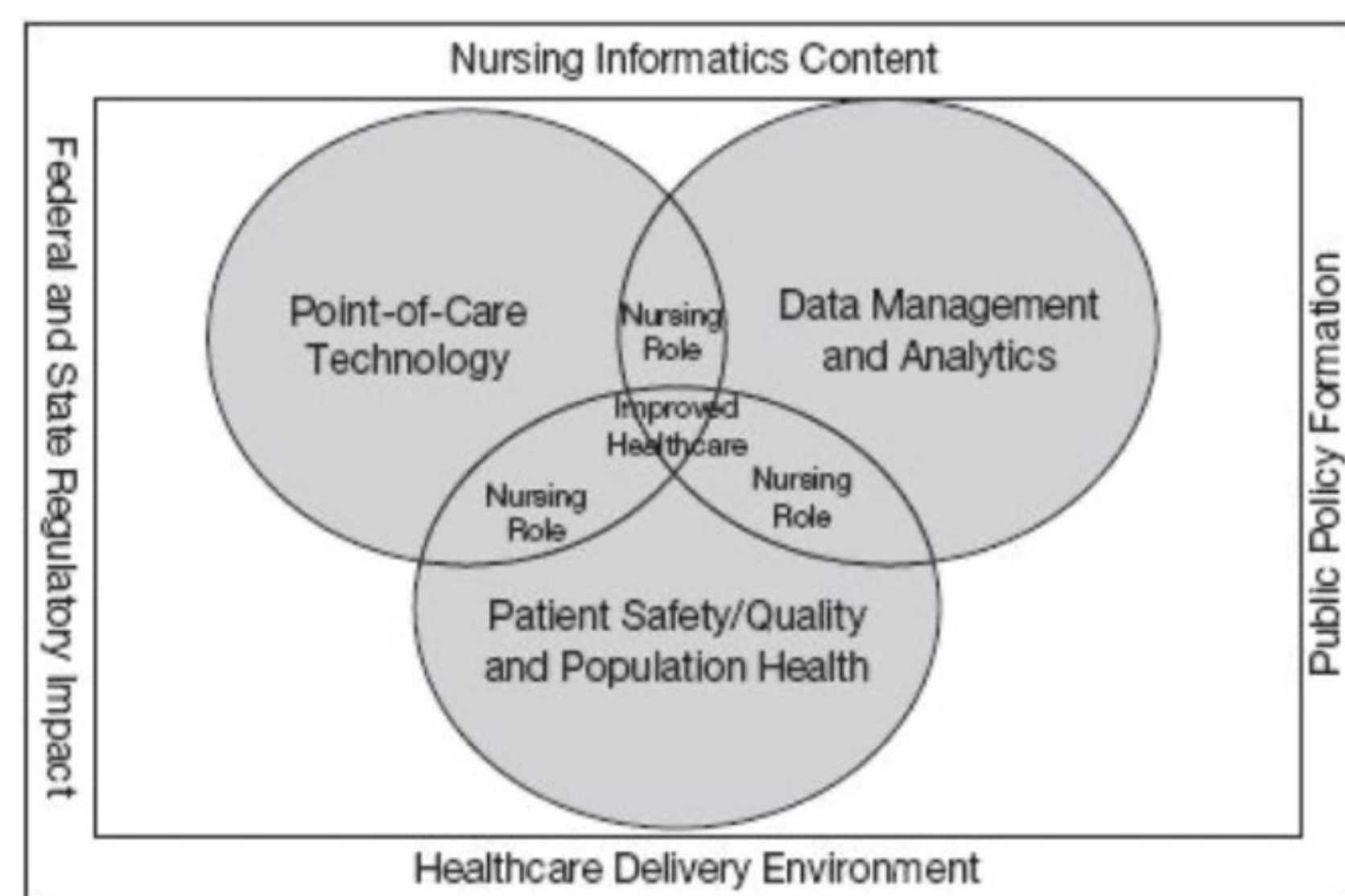
### Level of Evidence

The majority of the articles were level I and II with seven (7) Cochrane Reviews, sixteen (16) systematic reviews, three (3) randomized control trials (RCTs), and one (1) mixed method, with the remainder of the articles between levels III to IV.

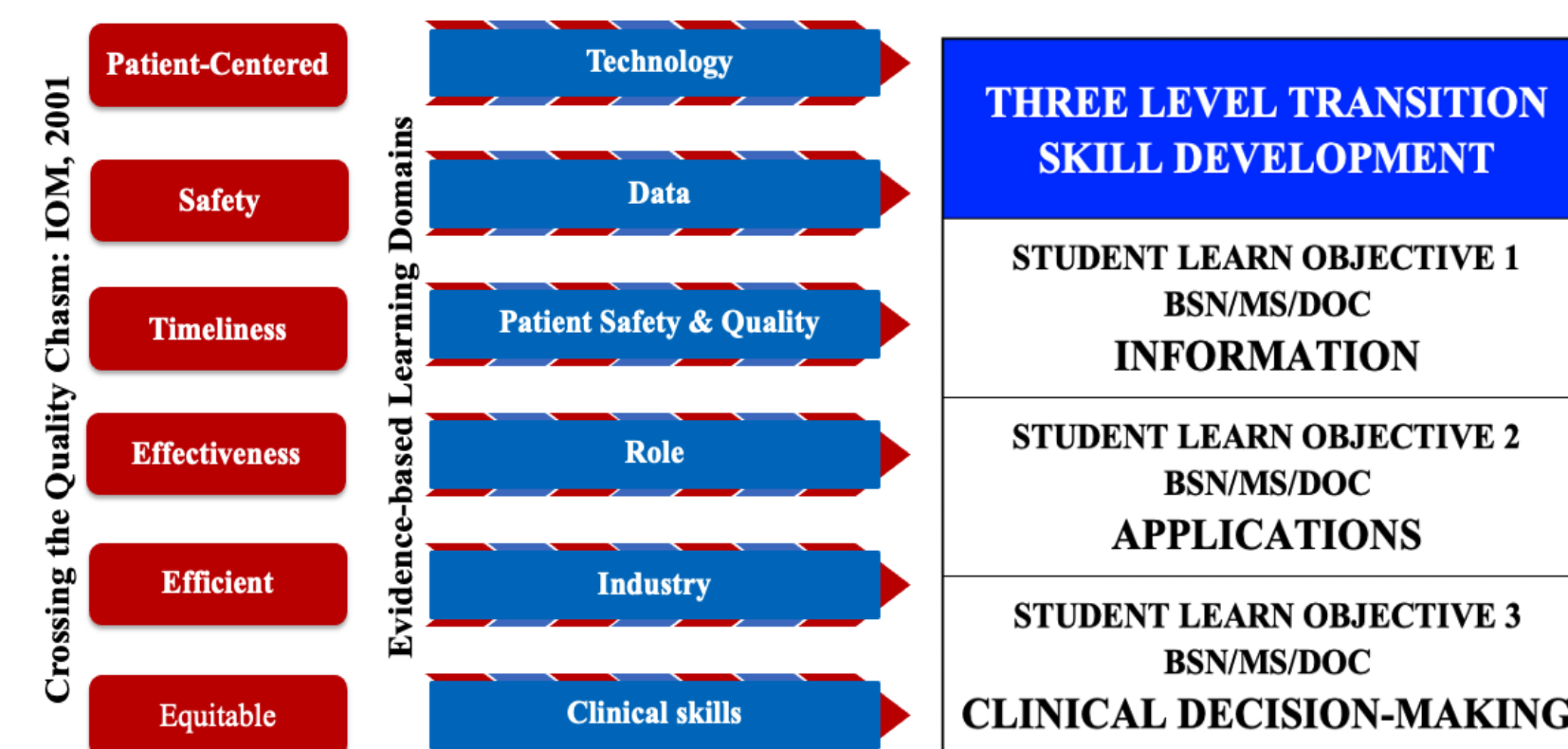
### Tietze Telehealth Framework



### Nursing Education for the Healthcare Informatics



### RPM Curriculum Domains



### RPM Curriculum Matrix

	Technology	Data	Patient Safety & Quality	Role	Industry	Clinical skills
SLO 1 BSN/MS/DOC INFORMATION	📄	📄		📄	📄	
SLO 2 BSN/MS/DOC APPLICATIONS	📄	📄	📄	📄		
SLO 3 BSN/MS/DOC CLINICAL DM			📄	📄	📄	📄

• Each cell represents a PowerPoint of information, reading, and rubric-based performance evaluation (grade/score).  
• = Data skill development was covered by Dr. Tietze later in the semester.

### Implementation

This DNP scholarly descriptive pilot project explored RPM and developed evidence-based practice curriculum-based competencies to ensure delivery of safe, effective, efficient, equitable, patient-centered, timely, and quality RPM practices. The descriptive pilot project results were significant, indicating an increase in the student's knowledge and experience after the three RPM teaching modules. There was no difference in the attitude score. The attitude score may be related to the students themselves because of a high pre-survey score of 9.4 for attitude. This pilot project's significant results warrant expansion to a larger sample and other universities, especially as RPM is emerging as an alternative method of health care for chronically ill older adults and the lack of available health care professionals that are trained and competent in RPM. Another reason to repeat this pilot project is to validate the established fidelity for the developed EBP RPM curriculum.

### Recommendation

- RPM certification is warranted for optimum care delivery.
- Continued focus on evidence-based RPM curriculum content should occur for all health professionals.
- These approaches for teaching clinical decision-making seem to provide a sound methodology for creating competencies in RPM nurses.

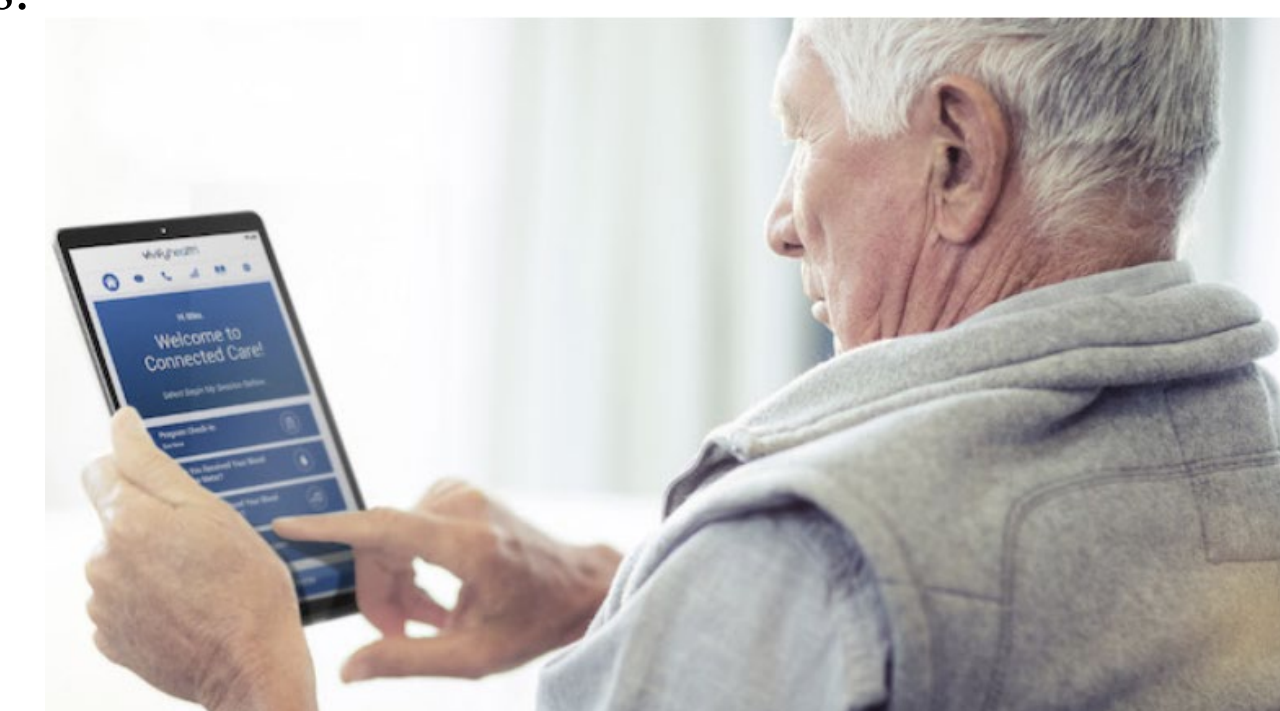
### Evaluation – Qualitative Results

#### Reflected Comments

- "I am eager to learn more about remote patient monitoring and how it can be incorporated into healthcare."
- "I think remote patient monitoring is very useful for patients and will expand in the near future."

#### Course Improvement

- "I want to learn more about development of the interactive platforms."



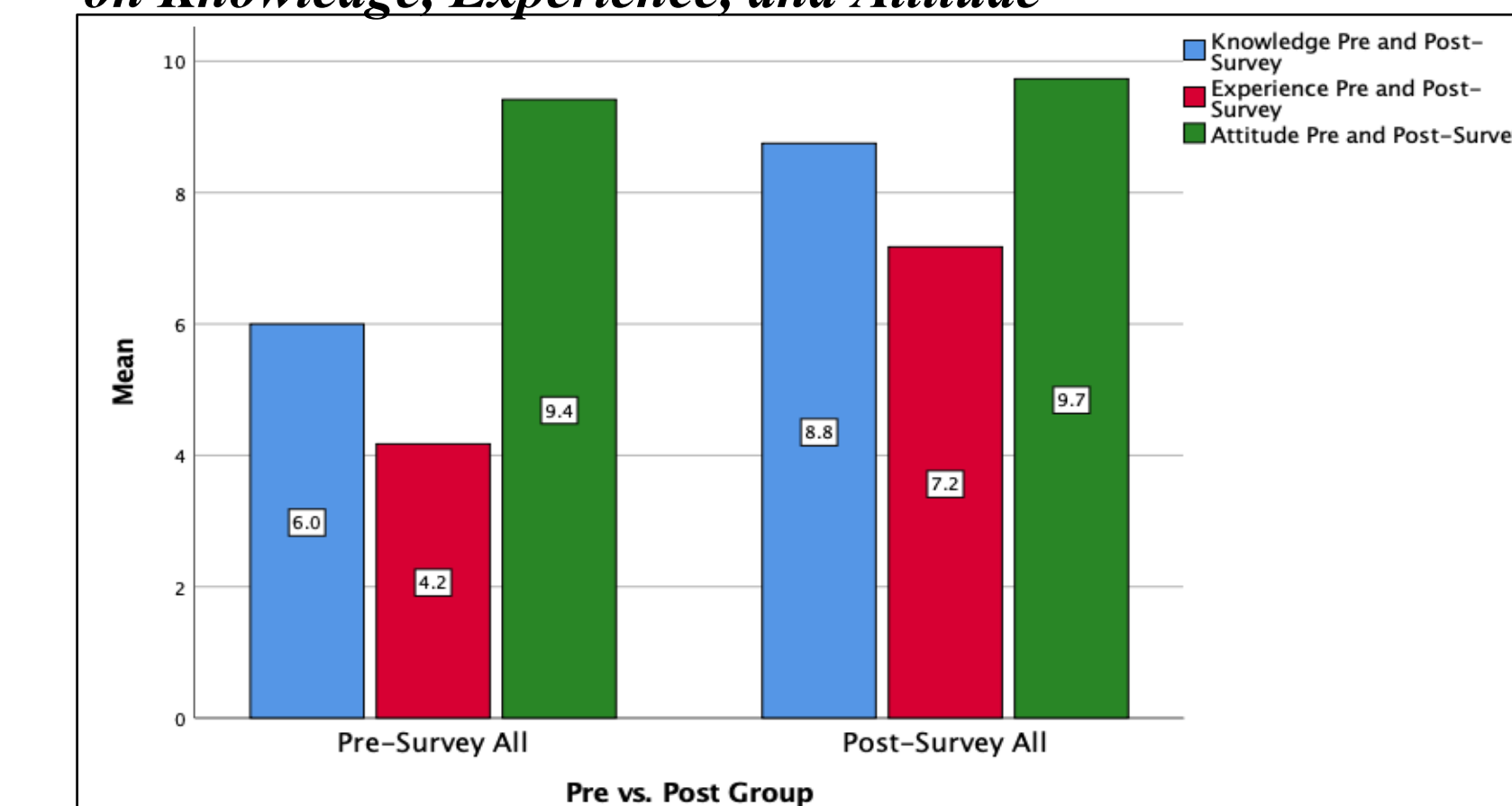
### Evaluation – Quantitative Results

#### Mann-Whitney Findings of Statistical Significance

	Group <sup>a</sup>	Knowledge	Experience	Attitude
Mann-Whitney U		25.000	52.000	114.000
Asymp. Sig. (2-tailed)		.000***	.004**	.506

Note: \*\*p < .01, and \*\*\*p < .001  
<sup>a</sup> Grouping Variable: Pre vs. Post Group.

#### Mean Educational Pre- and Post-Education Session Scores on Knowledge, Experience, and Attitude



### Conclusion

#### Research Question

Is there a difference between the students' knowledge, experience, and attitude before and after being exposed to the content of remote patient monitoring in an online environment?

- Quantitative results indicated that knowledge and experience were significantly improved with RPM content.
- There was no difference in the attitude score. This may be related to the students themselves because of a high pre-survey score of 9.4 for attitude.
- Significant results of this pilot study warrant expansion to a large sample and other universities

### References

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