Integrating Real-Word Data and Pragmatic Research in Nursing Doctoral Education: An Innovative Model for Bridging the Chasm between PhD and DNP Domains

Eun-Shim Nahm, PhD, RN, FAAN, FGSA[1]; Amy Yarnell, MLS[2]; Kristin Seidl, PhD, RN[1,3]; Gyasi Moscou-Jackson, PhD, MHS, RN[3]; Lynn Chen, PhD[1]; Mary Etta Mills, ScD, RN, NEA-BC[1]; Shannon Idzik, DNP, CRNP, ANP-BC, FAANP, FAAN[1]; Jiwon Park, MSN, RN[1]; Lillian Abraham, MSN, RN[1]

[1]School of Nursing, University of Maryland, [2]Health Science and Human Services Library, University of Maryland, [3]University of Maryland Medical Center

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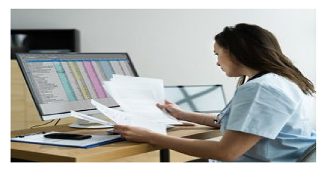
Introduction

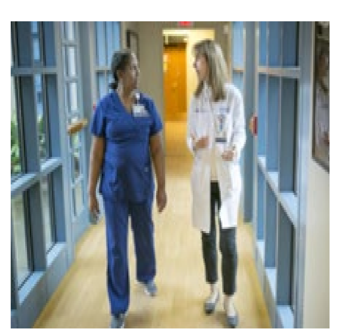
- Major challenges in healthcare systems, such as care quality, costs, and staffing shortages
- **Nurse scientists** are well-positioned to solve these issues.



- Nursing PhD programs have not yet embraced pragmatic research (PR), use of real-world data (RWD) and healthcare analytics in their curricular.
- Declining enrollment in PhD programs is a major concern for the nursing profession.
- Through the prior and current NSPII grant projects, our interprofessional team has:
  – collaborated on projects focused on improving patient and nursing outcomes.
  – accumulated expertise in managing RWD and conducting PR projects.

Aim

- Overarching project goal: To prepare nurse scientists to solve significant healthcare and nursing challenges, including care quality and staffing shortages.



- **Specific goals of the planning Grant project**:
  – To develop and implement the "Real World Data & Pragmatic Research" (RWD-PR) certificate program, which will catalyze current doctoral-level nursing education
  – To integrate this timely and needed certificate program in the doctoral program, which is expected to increase enrollment to the PhD program.

Innovation

- Project's focus on the use of RWD and PR approaches to address the critical problems in the nursing workforce and patient outcomes.
- Its aim to reimagine current nursing doctoral education by fostering synergistic collaboration between two doctoral programs while creating a transformative educational experience.
- Students can take courses as electives or for a certificate:
  ➔ PhD students can earn both PhD and RWD-PR certificates without extra credits.

Preliminary Data

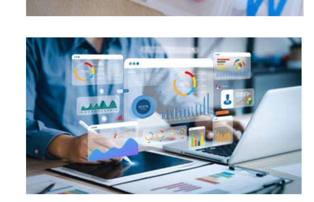
Needs Assessment

Table 1. Doctoral Students' Needs Assessment (N=65)

1. Pragmatic research in health care	%	Freq.
Very much interested	24.6	16
Somewhat interest	44.6	29
Not interested	30.8	20
2. RWD management and analytics		
Very much interested	38.5	25
Somewhat interest	29.2	19
Not interested	32.3	21
3. Data visualization for health care research and practice		
Very much interested	40.0	26
Somewhat interest	30.8	20
Not interested	29.2	19
4. Practicum (RWD-PR)		
Very much interested	35.4	23
Somewhat interest	38.5	25
Not interested	26.2	17

RWD-PR Certificate Program: Overview

- The RWD-PR certificate program (12-credits, virtual)
- Students can take the courses using their electives
  1. Pragmatic Research in Healthcare
  2. RWD Management and Analytics
  3. Data Visualization for Healthcare Research and Practice
  4. Data-driven Practicum



RWD-PR Student Collaboration Use Cases

The PhD/DNP student team develops research inquiry using PR approach and develop a design. — **Pragmatic Research in Health Care**

The team identifies RWD variables for the research inquiry. PhD students leads data management, and DNP students lead data quality checking . — **RWD Management & Analytics**

Students learn use data visualization programs to visualize selected data. — **Data Visualization**

Complete practicum experience based on individuals' research and/or project goals. (can be a dissertation study or scholarly project.) — **RWD-PR Practicum**

Program Development

Project Team

Interprofessional experts, including researchers, a data/ bioinformatics librarian, and a statistician from academia, along with a data scientist and a nurse scientist from a large hospital

Program Platform

Virtual platforms to deliver the content, incorporating active discussions and hands-on lab sessions

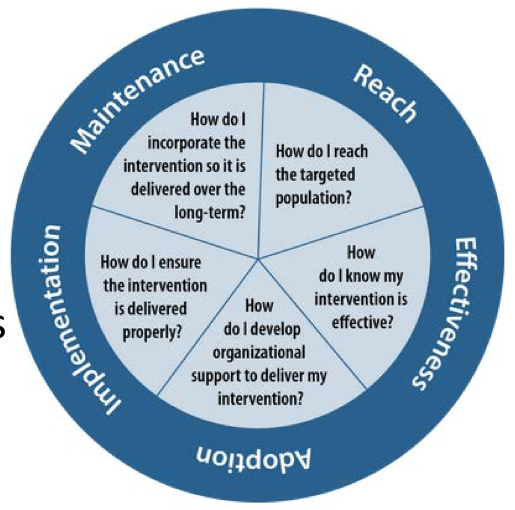
Content Development

1. Compilation of the most up-to-date knowledge and skills in PR, RWD management and analytics, and data visualization
2. Calibration of knowledge levels and skills for both PhD and DNP students
3. Student collaboration processes considerations:
   - PhD and DNP students have very different educational backgrounds.
   - Selection of topics and discussion questions that are relevant both doctoral students.

Program Implementation

Implementation of Courses

- Both PhD and DNP students need adjustment to course topics, contents, and peers.
- Leverage conversational/discussion approaches to engage students.
- Student collaboration processes should start with team building process
- Hands-on-experience and group discussion:
  - Start with demo sessions and group works
  - Small groups (use virtual private rooms)



Course example: Pragmatic Research Course

- Pragmatic trials embedded in healthcare enable DNP- and PhD-prepared nurses to collaborate to address key health and nursing challenges.

Program Implementation (Cont.)

Course example: Pragmatic Research Course (Cont.)

- In this class, students learn background and value of PRTs and the knowledge and skillset to conduct PRTs (e.g., design, methods, and analytics techniques).
- PhD and DNP students work as teams to develop research questions and project proposals.
- Students learn about example projects, specific databases, and analytics tools like R-program.

- Labs will be included in most of the sessions.

Current Progress

Current Progress

- The RWD-PR Certificate Program's initial course, Pragmatic Research, is being offered.
- Feedback from students and instructors is highly positive.
- Students' contributions to peer learning have exceeded faculty expectations.
- Virtual course delivery effectively demonstrates data management and supports student practice.
- Interprofessional teaching methods, integrating practice, data science, and research, have been robust and well-received.

Projected Impact

Expected impact of the project

- RWD-PR courses enable doctoral students to collaborate and apply contemporary research knowledge and skills in practice.
- This experience enables students to effectively address practical challenges in healthcare and the workforce after graduation.
- The ultimate outcome of the project will be improved care quality across the state, which is important to the Maryland Total Cost of Care Model.

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Abstract

Background:
The overarching goal of our ongoing project is to prepare nurse scientists to solve significant healthcare and nursing challenges, including care quality and staffing shortages.

Methods:
In this planning grant project, we are developing and implementing the Real World Data & Pragmatic Research (RWD-PR) certificate program, which will catalyze current doctoral-level nursing education, preparing students to conduct this line of research across diverse practice settings. The program includes four courses: (1) Pragmatic Research in Healthcare; (2) RWD Management and Analytics; (3) Data Visualization for Healthcare Research and Practice; and (4) Data-Diven Practicum. The innovative aspects of this project are twofold. First, it focuses on the use of RWD and PR approaches to address the critical problems in the nursing workforce and patient outcomes. Second, it aims to reimagine current nursing doctoral education by fostering synergistic collaboration between two doctoral programs (PhD and DNP) while creating a transformative educational experience that can influence the future of nursing. This project is being conducted by an interprofessional team that has been collaborating on two prior grant projects, laying the groundwork for the current PWD-PR project. The team comprises researchers, a statistician, and a data/bioinformatics librarian from academia, along with a data scientist and a nurse research scientist from a large medical center. The program uses contemporary virtual platforms to deliver the research and analysis content, incorporating active discussions and hands-on lab sessions facilitated by a team of experts.

Results:
Currently, the first course, Pragmatic Research, is being offered and includes both PhD and DNP students. To date, feedback from students and instructors has been positive. Our team's experience with course development and implementation thus far suggests that the project can significantly impact nursing education by leveraging the strengths of two doctoral programs. Through the RWD-PR courses, students in both programs acquire the ability to collaborate and apply contemporary pragmatic research knowledge and skills to practice. This will enable them to effectively address practical challenges in healthcare and the workforce.

Conclusion:
The ultimate outcome of the project will be improved care quality across the state, which is important to the Maryland Total Cost of Care Model.