Nurse Education Today 63 (2018) 69–75

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/locate/nedt

Review

Improving evidence based practice in postgraduate nursing programs: A systematic review
Bridging the evidence practice gap (BRIDGE project)

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ARTICLE INFO

Keywords:
Curriculum
Evidence-based practice
Nursing
Review, systematic
Students
Teaching
Translational medical research

ABSTRACT

Background: The nursing profession has a significant evidence to practice gap in an increasingly complex and dynamic health care environment.
Objective(s): To evaluate effectiveness of teaching and learning strategies related to a capstone project within a Masters of Nursing program that encourage the development of evidence based practice capabilities.
Design: Systematic review that conforms to the PRISMA statement. Sample: Master's Nursing programs that include elements of a capstone project within a university setting.
Data Sources/Review Methods: MEDLINE, CINAHL, Cochrane Database of Systematic Reviews, ERIC and PsycInfo were used to search for RCT's or quasi experimental studies conducted between 1979 and 9 June 2017, published in a peer reviewed journal in English.
Results: Of 1592 studies, no RCT's specifically addressed the development of evidence based practice capabilities within the university teaching environment. Five quasi-experimental studies integrated blended learning, guided design processes, small group work, role play and structured debate into Masters of Nursing research courses. All five studies demonstrated some improvements in evidence based practice skills and/or research knowledge translation, with three out of five studies demonstrating significant improvements.
Conclusions: There is a paucity of empirical evidence supporting the best strategies to use in developing evidence based practice skills and/or research knowledge translation skills for Master's Nursing students. As a profession, nursing requires methodologically robust studies that are discipline specific to identify the best approaches for developing evidence-based practice skills and/or research knowledge translation skills within the university teaching environment. Provision of these strategies will enable the nursing profession to integrate the best empirical evidence into nursing practice.

1. Introduction

With population growth, ageing and continued fiscal constraints, never before has it been so important to explore the best way to bridge the evidence practice gap in our expert nurse population group. This is imperative in the current healthcare environment where between 10 and 40% of patient care does not use the best available evidence (Breimaier et al., 2011; Flores-Mateo and Argimon, 2007). Nursing as the largest health care professional group has an important role in addressing these evidence based practice gaps, but nurses need the capabilities to address the changing nature of the care environment (American Association of Colleges of Nursing, 2011).

The World Health Organisation (2010) current Strategic Statement has identified that improving outcomes for families and communities is dependent upon nursing services underpinned by evidence-based practices. Evidence based practice is defined as the integration of best

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https://doi.org/10.1016/j.nedt.2018.01.015
Received 14 June 2017; Received in revised form 11 December 2017; Accepted 19 January 2018

available evidence with clinician experience and patient preference and values (Sackett et al., 1996). As the scope of advanced nursing practice evolves there is a need for all nurses, especially our expert nurses such as nurse practitioners, nurse consultants, educators and managers to underpin all practice with the best available evidence. This is evidenced by requirements of masters level graduates to demonstrate capacity to "*…lead change to improve quality outcomes, advanced a culture of excellence through lifelong learning, build and lead collaborative inter-professional care teams, navigate and integrate services across the health system, design innovative nursing practices and translate evidence into practice*" (American Association of Colleges of Nursing, 2011). In the European context the Bologna Process has been implemented as a means to facilitate of Master's degree programs and innovative structures to facilitate collaboration between tertiary education settings and health care organisations as part of a reconceptualisation of nursing as a practice discipline that integrates practical and theoretical knowledge (Öhlén et al., 2012).

2. Background

There has been significant research into identifying optimal ways of implementation and teaching of EBP and/or research in both academic health and clinical settings (Coomarasamy and Khan, 2004; Ilic and Maloney, 2014; Windish et al., 2005). Undergraduate and postgraduate education needs of registered nurses differ to other health professional groups due the need for nurses to be both users of evidence based clinical information in the context of individuals and families, as well as generators of new evidence based knowledge, as opposed to medical practitioner requirements for appraisal skills in relation to specific disease contexts (Stiffler and Cullen, 2010).

A common, internationally agreed taxonomy for classifying reliable and valid tools to measure evidence based practice learning, that includes consideration of behaviour, skills, knowledge, self-efficacy, attitudes and reaction to the educational experience has been developed (Tilson et al., 2011). The CREATE Framework identifies the need to develop tools for assessment of evidence based practice learning that have a focused intent, and clearly defined operational definitions (Tilson et al., 2011). A conceptual framework that guides patient mediated knowledge translation strategies whilst considering the impact of intervention design, delivery and context is also required (Gagliardi et al., 2011).

One approach to research knowledge translation is a Capstone experience, defined as a values based process that utilises a multidisciplinary perspective; is based on real world problems and involves collaboration between students and faculty in anticipation of transition to practice (Schroetter and Wendler, 2008). Capstone projects, whilst varying from university to university, are experientially designed projects that enable students to apply the specific content they have learned throughout the course of their graduate program to examine a specific idea or problem.

Cochrane identified a lack of interventions addressing organisational infrastructure to support integration and guide EBP related policy and practice among clinical nurses (Flodgren et al., 2012). Two further systematic reviews of knowledge utilisation and/or translation among acute care nurses have identified single component educational strategies (Jennifer Yost et al., 2014); or education utilising local opinion leaders or multidisciplinary committees (Thompson et al., 2007) as successful strategies for increasing research use. However, best available evidence around strategies to integrate EBP into tertiary education curriculum is not available (Melnyk et al., 2008). This systematic review aims to evaluate the effectiveness of teaching and learning strategies designed to build the evidence based practice capabilities of Masters Nursing students.

3. Methods

3.1. Design

Systematic Review conducted in accordance with the PRISMA statement (Higgins et al., 2011).

3.1.1. Eligibility Criteria

The population in this review was limited to postgraduate nurses completing a Masters of Nursing degree. Included interventions aimed at improving EBP skills or research translation skills within a capstone Master's program and/or piece of scholarship including a literature review or research thesis proposal. All outcomes were considered. Undergraduate and doctoral students, non-nursing health care professionals and hospital-based interventions were excluded.

3.1.2. Information Sources and Search Strategy

Databases searched included MEDLINE, CINAHL, Cochrane Database of Systematic Reviews, PsycInfo and ERIC from 1979 to current, last searched on 9 June 2017. Other sources included manual searches of reference lists and Google Scholar. The search strategy from MEDLINE is included in Supplementary Appendix 1.

3.1.3. Search Outcome

All quantitative studies including randomized controlled trials, quasi-experimental (pre and post-test) studies, pilot and feasibility studies of university based programs specifically related to the uptake of evidence based practice skills or research knowledge translation skills among Masters of Nursing students were included. The initial database search generated 1588 articles, with 2 articles located from hand searching of reference lists. Sixty articles were excluded through duplication, leaving 1532 articles for screening. Fig. 1 presents the screening and eligibility processes.

3.1.4. Data Extraction and Quality Appraisal

Titles and abstracts were screened for eligibility and all duplicates were removed (AR). Discrepancies regarding article selection were resolved by consensus (AR, LH, PN). Quality of the included studies was appraised using the McMaster Critical Review Form for quantitative studies (Law et al., 1998) (Refer Supplementary Appendix 2).

3.1.5. Data Synthesis

Due to heterogeneity between intervention results, the results were synthesised in a narrative review not a Meta-analysis. Data were extracted for outcomes including: attitudes towards research, research knowledge, and EBP self-efficacy. EBP skills related outcomes included: ability to locate evidence, targeted literature searching, critical appraisal understanding, critical appraisal skills, the capacity to find specific journal articles, and evaluation of quality, qualitative and survey research designs, RCT's systematic reviews and meta-analyses.

4. Results

There were no identified RCT's or quasi experimental studies specifically designed to enhance the acquisition of evidence based practice skills and/or research knowledge translation skills within a Masters of Nursing capstone program. After a process of review, hand searching and elimination five quasi-experimental studies within Masters of Nursing research courses (four pre and post-test studies, 1 cohort study) were identified and included (Refer Fig. 1).

4.1. Study Characteristics

The five included studies were conducted in high income countries: US (n = 1), Australia (n = 2), Norway (n = 1) or Canada (n = 1). The mean number of participants were (261 ± 40), and were