The Experience and Effectiveness of Nurse Practitioners in Orthopaedic Settings: A Comprehensive Systematic Review

Reviewers

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# Table of Contents

Table of Contents ................................................................................................................. 2

Figures 1-5 ............................................................................................................................ 7

Tables 1-19 ............................................................................................................................ 7

Abstract ................................................................................................................................ 8

Background ......................................................................................................................... 8

Objective ............................................................................................................................... 8

Inclusion Criteria .................................................................................................................. 8

- Types of Participants ........................................................................................................ 8
- Types of Interventions ...................................................................................................... 8
- Phenomena of Interest ...................................................................................................... 8
- Types of Studies ............................................................................................................... 8
- Types of Publications ...................................................................................................... 9
- Types of Outcomes .......................................................................................................... 9

Search Strategy .................................................................................................................... 9

Methodological Quality ...................................................................................................... 9

Data Collection ................................................................................................................... 9

Data Analysis/Synthesis ...................................................................................................... 10

Results .................................................................................................................................. 10

Conclusions ......................................................................................................................... 11

Student Declaration .......................................................................................................... 12

Chapter 1: Introduction ..................................................................................................... 13

1.1 Introduction .................................................................................................................. 13

1.2 Structure ..................................................................................................................... 13

1.3 Study Aims & Objectives ........................................................................................... 13

1.4 PICO ............................................................................................................................ 14

1.4.1 Population/Types of Participants ......................................................................... 14

1.4.2 Types of Interventions/Phenomena of Interest ..................................................... 14

1.4.3 Comparator ............................................................................................................ 15

1.4.4 Outcomes of Interest/Types of Outcomes ............................................................. 15

1.5 Context of the review: extant literature ..................................................................... 15

1.5.1 Role and Importance of the NP ............................................................................ 17

1.5.2 Advanced Nursing Practice .................................................................................... 18
Figures 1-5

Figure 1 – The Joanna Briggs Institute conceptual model for evidence-based health care (chapter 1)
Figure 2 – Flow chart illustrating the study assessment and selection process (chapter 3)
Figure 3 – Meta-view graph from NOTARI (chapter 3)
Figure 4 – Shared Findings diagram (chapter 4)
Figure 5 – Duality diagrammatic representation (chapter 4)

Tables 1-19

Table 1 - Outcomes of ONP Assessment in Joint Arthroplasty: Access & Wait times, Surgical Targets, Quality of Care
Table 2 - Complications in Joint Arthroplasty
Table 3 - Quality of Care in Joint Arthroplasty
Table 4 - Satisfaction & Acceptance in Joint Arthroplasty
Table 5 - Clinical accuracy in radiological assessment in fracture care management
Table 6 - Clinical accuracy in fracture care
Table 7 - Complications & Readmissions in Fracture Care
Table 8 - Osteoporosis Screening and Management
Table 9 - ONP impact in Developmental Dysplasia of the Hip (DDH)
Table 10 - ONP Care in Spine clinic
Table 11 - ONP Care in Carpal Tunnel
Table 12 - ONP Care in Pain Management
Table 13 - Complications in Trauma
Table 14 - Education as an NP outcome
Table 15 - LOS/Cost
Table 16 - Barriers to ONP practice
Table 17 – Notari Synthesised Finding 1
Table 18 – Notari Synthesised Finding 2
Table 19 – Notari Synthesised Finding 3
Abstract

Background

There is commonality amongst the definition and characteristics of Nurse Practitioner (NP)/Advanced Practice Nurse (APN) role and practice internationally in terms of education, practice standards and regulation; operationally there is variability. The NP role has been implemented internationally; at least 70 countries are considering some form of APN role. NPs provide advanced clinical care and were implemented as part of health service reform to improve access and timeliness of healthcare. Whilst much has been written on advanced practice nursing roles per se, there has been little focus specifically on the orthopaedic nursing context. This review will focus on orthopaedic nurse practitioners (ONP) in an international context.

Objective

To appraise and synthesise the best available evidence on the experience and effectiveness of the role and practice of ONPs.

Inclusion Criteria

Types of Participants

ONP/APN in acute care or sub-acute orthopaedic settings.

Types of Interventions

Interventions of ONP specific care.

Phenomena of Interest

The experience of becoming or being an ONP in relation to role development, role implementation and (ongoing) role evaluation.

Types of Studies

This comprehensive systematic review looked at both quantitative and qualitative studies together with narrative text and opinion papers. Quantitative study designs included in this review included observational cohort/case control studies and descriptive case report/series. Phenomenology was the qualitative study design included. Mixed method studies were also included in this review.
Types of Publications

The textual component of this review considered publications of expert opinion, discussion papers, position papers and other relevant text where there existed a particular focus on the ‘orthopaedic’ aspect of NP practice.

Types of Outcomes

A range of outcome measures were included but were not limited to primary patient outcomes: occasions of service/numbers seen, length of stay (LOS), wait times, patient satisfaction, readmission, and other patient encounter data or relevant nurse-sensitive outcome data that characterised ONP practice. Secondary and related outcomes data relative to process indicators/outcomes such as: NP satisfaction, key stakeholder (other health professional) satisfaction, knowledge, LOS, cost benefit were considered.

Search Strategy

Both published and unpublished English language studies were considered from individual database inception and searched up to December 2012. The search was repeated in early 2013 to ensure no recent papers had been published. A three step search strategy was employed for each component of this review.

Methodological Quality

All retrieved studies and opinion papers were assessed by two independent reviewers using the standardised Joanna Briggs Institute critical appraisal tools. Any disagreements that arose between the reviewers were resolved through discussion, or with a third reviewer.

Data Collection

Quantitative data was extracted using the JBI-MAStARI tool. The data extracted included details about the interventions, populations, study methods and outcomes of significance to the review question.

Qualitative data was extracted using the JBI-QARI tool. The data extracted included details about the methodology, method, phenomena of interest, participants, data analysis and relevant findings.

Textual data was extracted using JBI-NOTARI tool. The data extracted included the type of text,
stated allegiance or position, setting, geographical and cultural influences and messages and conclusions located within the publication.

**Data Analysis/Synthesis**

Quantitative data was analysed using JBI-MAStARI. Meta-analysis of the quantitative data was not possible due to a lack of clinical and statistical heterogeneity; findings were presented in narrative format including tables to aid in data representation.

As only one qualitative study was included, meta-synthesis by meta-aggregation was not possible.

Textual data were synthesised using the Joanna Briggs Institute approach of aggregation using JBI-NOTARI.

**Results**

A total 31 studies and publications were included in the review.

Nineteen quantitative studies were included, 10 comparable cohort and 9 descriptive studies. Seven broad review outcomes measures were identified: Three of which were patient related (primary) outcomes and three nurse related (secondary) outcomes. Three sub category patient-related outcomes focussed on (1) specialist care interventions, (2) patient satisfaction/acceptance, (3) wait times and access to care. Another four sub category nurse-related or process-related review outcomes focussed on (4) education, (5) length of stay, (6) other cost-related issues and (7) barriers.

One unpublished qualitative thesis discussed four themes: (1) having knowledge, (2) being in and outside the role, (3) being an advocate and (4) being in control with decision making & anticipation as sub themes. The author concluded that advanced practice is a continuum.

Eleven text and opinion publications were included where 39 conclusions were identified. From these conclusions eight categories emerged and three synthesised findings. The synthesised findings related to ‘Duality’, ‘Role & Relationships’ at a personal, organisational and professional level with an emphasis on collaboration, and ‘Moving Forward’ with an emphasis on resources needed to support the NP in this.
Conclusions
The findings of this comprehensive review demonstrate the experience and effectiveness of NPs in orthopaedic settings is influenced by multiple factors from within and external to the individual. Overall the results derived from quantitative evidence indicated that NPs in orthopaedic settings provide comparable care when compared to conventional methods of health care delivery. However the results showed better outcomes in specific units where care is led by Clinical Nurse Specialists, NP management of distal radius fracture, and NP screening for developmental hip dysplasia. Decreased length of stay, improved patient wait times & access and patient satisfaction were demonstrated across the evidence, generally. Caution is required however when interpreting the results due to the lower quality of study designs.

The qualitative and textual evidence demonstrated that the role of the ONP is multidimensional with confidence, knowledge and experience as essential elements to deal with complex and challenging situations. The experience of becoming or being an ONP is relational and collaborative at a personal, organisational and professional level. A ‘duality’ of purpose for ONP’s emerged from the textual evidence with interplay between benefits and barriers to ONP practice. Barriers as an outcome emerged from both quantitative and textual evidence. The experience of ONP is characterised by moving forward along a continuum – where the continuum represents the entire journey/career/professional life of the NP. From the comprehensive evidence on the effectiveness and experience of NPs in orthopaedic settings this review identified four ‘shared findings’ across the evidence base: Acceptance, Collaboration, Education/Knowledge/Experience, Duality.

Keywords Orthopaedic nurse practitioner, advanced practice nurse, extended practice, expert nurse, systematic review, effectiveness, experience
Student Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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