10-28-2020

A survey identifying leadership and research activities among nurse practitioners

Mary Ryder
Edith Cowan University

Elisabeth Jacob
Edith Cowan University

Joyce Hendricks
Edith Cowan University

10.1080/10376178.2020.1835508
This is an Accepted Manuscript of an article published by Taylor & Francis in CONTEMPORARY NURSE on 28/10/2020, available online: http://www.tandfonline.com/10.1080/10376178.2020.1835508.
Ryder, M., Jacob, E., & Hendricks, J. (2020). A survey identifying leadership and research activities among Nurse Practitioners. *Contemporary Nurse*, *56*(5-6), 441-454. https://doi.org/10.1080/10376178.2020.1835508

A Survey Identifying Leadership and Research Activities Among Nurse Practitioners

Background: Nurse Practitioners are identified as the ideal conduit to transform healthcare delivery internationally. Healthcare transformation requires the application of leadership and research skills. Current literature has limited information on NPs as leaders or researchers in the nursing profession.

Objectives: Determine if Nurse Practitioners identify themselves as leaders in nursing. Identify the leadership and research activities and influencing characteristics of Nurse Practitioners in Ireland and Australia. Establish similarities in leadership and research activities between Nurse Practitioners in Ireland and Australia. To identify if there is a relationship between leadership and research activities.

Design: A quantitative electronic survey.

Methods: A survey instrument was developed by combining two previously validated instruments. Nurse Practitioners in Ireland or Australia that had practiced within the last five years, and members of the respective professional association were included. Descriptive statistics were used to describe the findings and explore relationships in the data.

Results: Nurse Practitioners in Ireland and Australia identified themselves as leaders of the nursing profession. Nurse Practitioners work practices, leadership and research activities are similar in Ireland and Australia. The majority (55%), of participants reported being research active. There was an association between perceived leadership and research activities among participants.

Conclusion: Nurse Practitioners in both Ireland and Australia identify themselves as leaders of the nursing profession. There is no difference in reported work practices, leadership or research activities of Nurse Practitioners in both Ireland and Australia. There is an association between perceived leadership and research activity.

Impact Statement: Nurse Practitioners in Ireland and Australia are clinical leaders who require more research support.

Keywords: nursing; advanced practice; nurse practitioner; leadership; research

Funding Details: No funding was received for this research.

Conflict of Interest: No conflict of interest has been reported by the authors

Introduction

The Nurse Practitioner (NP) role was established over 50 years ago in the United States of America (USA) to improve access to quality healthcare (Ford, 2015). The NP is one of a number of advanced nursing roles that have been growing worldwide under the umbrella term of Advanced Practice Nurse (APN), that includes NP, clinical nurse specialist (CNS), certified nurse midwife (CNM), nurse consultant (NC) and nurse anaesthetist (NA) (Carney, 2016). Variations in titles have resulted in a lack of clarity pertaining to the NP role (Aleshire, Wheeler, & Prevost, 2012). Consequently, researchers argue that it is in the best interest of the profession to increase awareness and differentiate various roles according to the titles (Gardner, Duffield, Doubrovsky, & Adams, 2016). Establishing a National Framework for the NP role provides a sound basis for role development (Carney, 2016).

The NP role, in Ireland and Australia, is the only identifiable APN role supported with a regulatory framework, specified standards of practice, a minimum standard of specified Master Degree educational preparation and a protected title (Nursing and Midwifery Board of Australia, 2014[NMBA]; Nursing and Midwifery Board of Ireland, 2017[NMBI]). Educational preparation includes leadership, clinical research, and practice improvement methodologies to enable NPs to fulfil the leadership and research components of their role (Australian Nursing and Midwifery Council, 2015; NMBI 2017). Leadership for NPs in both Ireland and Australia encompasses both clinical leadership defined by Elliott et al. (2013, p. 1039) as: “activities

supporting the development of practice in the service" and professional leadership, "activities supporting developments outside of the service at national or international level". Research for NPs is defined not only as the application of evidence in practice but includes demonstrating a vision for the NP role through researching development of new systems of care (NMBA, 2014; NMBI, 2017). As the definitive clinical nursing role with specialized advanced education and clinical capabilities, NPs are enabled to extend and expand the role to deliver patient care to a defined caseload as independent autonomous practitioners (NMBA, 2016; NMBI, 2017).

Legislation in both countries is supportive of the international vision for NPs as part of the solution to spiralling healthcare costs, by enabling healthcare transformation through improved patient access to quality healthcare (Begley et al., 2010; Elliott, Begley, Sheaf, & Higgins, 2016; Leggat, Balding, & Schiftan, 2015). It is reasonable to expect that NP changes to healthcare delivery are conducted using evidence-based research approaches, evaluating healthcare delivery transformations and patient outcomes (Elliott et al., 2016). In order to critically challenge and transform healthcare services, leadership and research skills are required (Carrick-Sen et al., 2015). The expectation is therefore that NPs, in addition to being clinical experts, engage in research and have the capability to be transformational leaders within their various domains (Elliott, 2017; Elliott et al., 2016).

Literature Review

Current literature indicates that NPs in Ireland and Australia are not fulfilling their leadership and research role requirements. Australian researchers exploring work practices of NPs found that the majority of their time was directed at the provision of direct or indirect patient care delivery, and little time is spent on research (Gardner et al., 2010). Whilst NPs practice at a significantly higher level than all other nursing grades in the provision of direct patient care,

they perform at similar levels to other APN in the area of research in Australia (Gardner et al., 2016). As clinical leaders in emerging healthcare, there is a consensus that NPs should engage in research to ensure an evidence-base for extended practices (Gardner et al., 2010).

Similarly, Irish researchers identified that the NP role was distinctly different from the other advanced practice role of CNS (Begley et al., 2013; Begley et al., 2010). Begley et al. (2010) concluded that NPs leadership responsibilities and autonomy enabled NPs to process patients through the healthcare system whilst providing more holistic, efficient care than traditional healthcare models (Elliott, Begley, Kleinpell, & Higgins, 2014; Elliott et al., 2013). The research team found that understanding of the term 'research' varied, from audits and publications by management to knowledge generation and implementation by practitioners (Begley et al., 2013; Begley, Elliott, Lalor, & Higgins, 2015). Also, NPs reported they were required to undertake research in their own time (Begley et al., 2013; Begley et al., 2015).

A significant proportion of NP research to date relates to evaluating implementation of new NP roles in specialist areas (Bourgeois et al., 2014; Cox, Karikios, Roydhouse, & White, 2013; Dwyer, Craswell, Rossi, & Holzberger, 2017; Jennings, McKeown, O'Reilly, & Gardner, 2013; Thompson & Meskell, 2012; Wand, White, & Patching, 2011). There is a lack of literature related to the growth of these roles and how they have continued to enhance, influence and change healthcare services over time. Whilst the research to date arguably demonstrates clinical leadership activity in specific environments, it is difficult to ascertain if NPs identify themselves as nurse leaders (Lamb, Martin-Misener, Bryant-Lukosius, & Latimer, 2018). At this time literature specifically describing NP research productivity and outputs has not been able to be located. The literature calls for a need to provide uniformity to the NP role internationally, yet there is no research to date comparing the NP role across countries

(Delamaire & Lafortune, 2010). This research therefore intends to compare core elements of the NP role across two countries to begin the process of establishing international consensus. The research will also ascertain if NPs identify themselves as leaders in nursing and what they are contributing in the form of research to healthcare transformation.

Objectives

The aim of this first phase of a mixed-methods study was to answer the following research questions:

(1) Do NPs identify themselves as leaders in the nursing profession?

(2) What are the leadership activities and influencing characteristics of NPs in Ireland and Australia?

(3) Do NPs identify research translation or generation of knowledge as a component of the NP role?

(4) What are the research activities and influencing characteristics of NPs in Ireland and Australia?

(5) Is there a difference in the leadership and research activities between NPs in Ireland and Australia?

(6) Is there a relationship between leadership and research activities?

Methods

Design

This paper reports on the first phase of a larger mixed-methods sequential explanatory study based on Creswell & Plano Clark (2011) framework. This quantitative phase the research sought to establish the leadership and research activities of NPs across Ireland and Australia. An anonymous electronic survey was identified as the most suitable survey tool to access

participants across this wide geographical area (Creswell & Plano Clark, 2011; Cope, 2014; Ivankova, Creswell, & Stick, 2006).

Sample/Participants

Nurse Practitioners in Ireland and Australia were selected as the NP framework is similar in both countries, requiring specific education and ongoing development for registration (NMBA, 2016; NMBI, 2017). A convenience sample was chosen from an identified population aimed to represent the characteristics of the overall population. Geographical location was a factor considered in sampling. It was therefore decided to source participants via professional associations. At the time of the research of 1,380 endorsed NP in Australia, 603 (44%) were members of the Australian College of Nurse Practitioners (ACNP) and of the 208 registered NP in Ireland, the Irish Association of Advanced Nurse and Midwife Practitioners (IAANMP) had 95 members (46%). The sample was determined by eligibility criteria in both Ireland and Australia. Inclusion criteria for the sample include:

- Registered Advanced Nurse Practitioner (Ireland) or Endorsed Nurse Practitioner (Australia)
- Have practiced as a Nurse Practitioner in Ireland or Australia within the last five years
- Member of an NP professional association.

Data collection

Instrument

There were no NP surveys available in the literature to measure both leadership and research. Elements from two survey instruments were therefore combined, with permission from the respective authors. Questions related to characteristics and NP work were derived from the Australian Nurse Practitioner Study Nurse Practitioner Survey 2007, (Gardner, Gardner,

Middleton, & Della, 2009). These questions were presented in categorical format. Allocation of responsibilities in their role during the previous week, was requested as a percentage of NPs overall work. Questions related to research activities were selected from the National Organization of Nurse Practitioner Faculties (NONPF) Research Special Interest Group (SIG) Survey (Buchholz, Bloch, Westrin, & Fogg, 2015). Participants were asked in which area they saw the NP research role and from the four options provided were asked to choose one, a) translation of research, b) generation of knowledge, c) both or d) other. Research was defined as "the discovery of knowledge that is or can be allied to real life in healthcare settings" (Buchholz et al., 2015, p. 665) in the survey.

Leadership was not specifically addressed in either of the selected instruments. Participants were asked to score how much of their NP role was in leadership using a scale of 0 (no leadership) to 10 (strong leadership). Nurse Practitioners have not previously been asked to consider their role as a leader, therefore a broader response scale was chosen to increase the diversity of responses. Previous work in Ireland, using thematic analysis, had defined leadership activities and outcomes (Elliott et al., 2014; Elliott et al., 2013) that were incorporated into the final instrument in the format of a five-point Likert scale (0 [never]–4 [always]). The final instrument consisted of questions designed to ascertain demographic characteristics (9 questions), professional development (6 questions), leadership (2 questions), and research related questions (11 questions) (available upon request).

Both instruments that contributed to the final survey were developed by expert panels and subjected to validity tests and analysis testing relationships amongst variables (Buchholz et al., 2015; Middleton et al., 2010). Combining instruments does not imply validity therefore, the final instrument was reviewed for face validity by two NPs, one in Ireland and one in Australia, and two academics involved in NP education prior to distribution.

The cloud-based Leadership and Research Survey, using Qualtrics® software, was distributed to NPs in Ireland and Australia in the months of May and June 2017. A link to the survey was embedded in an email distributed to members by the respective professional associations. Research Ethics approval was granted from the University Ethics Committee (number: 16418 RYDER) prior to undertaking the research. Permission was granted by the ACNP and the IAANMP approval committees respectively.

Data analysis

Quantitative data was downloaded from Qualtrics and analysis was conducted using the software package IBM SPSS Statistics Version 24. Data were checked and cleaned for the purpose of analysis, as recommended by Sandelowski (2000). Incomplete surveys were removed. Descriptive statistics were used to describe, compare and summarize information about the participants. An analysis of histograms, normal Q-Q plots and box plots showed that scores were approximately normally distributed. Descriptive statistics were used to summarise continuous variables. Inferential statistics were used to compare differences between groups. Chi-square statistics were used to establish an association between categorical variables.

Results

One hundred and twenty-five (N=125; 18%) NPs accessed the questionnaire, 29 responses were incomplete and removed from the data. The remaining 96 completed surveys, for analysis, included 22 (23%) were from Ireland, and 74 (77%) from Australia. The characteristics of participants are described in detail in Table 1. The largest proportion of participants (70%, n=67) worked full-time and in emergency departments (28%, n=27). Fifty-four percent of NPs work time was dedicated to providing direct patient care (Table 2). The remainder of the work

time was delivering patient education, on administration and 4% of the working time for research (Table 2). Work patterns were similar across Irish and Australian NPs.

Nurse Practitioner Leadership

Nurse Practitioners perceived that they provided strong leadership in the nursing profession with a mean self-reported leadership score of 7.5 (SD 2.17). The majority of participants (n=67, 69%) reported a score of eight or higher. The mean leadership score for NPs in Ireland was 7.23 (SD 1.9) and Australia 7.59 (SD 2.3) respectively (Table 3). An independent t-test did not identify any statistically significant difference between the scores ($t(40)=0.72$, $p=0.47$). The perception of providing strong leadership increased with each age category (Table 3) and years authorized to practice as an NP (Table 3). Participants from both Ireland and Australia identified all leadership activities in the survey as components of their NP role. (Table 4). The leadership activities were similar for NPs in both Ireland and Australia (Table 4).

Nurse Practitioner Research

The majority (n=82, 85%) viewed the NP role as undertaking both translational research and generation of new knowledge. This result was consistent in both Ireland (n=18, 82%), and Australia (n=64, 86%). More than half of NPs (n=55, 57%) reported that they were research active, including 13 (59%) Irish and 42 (57%) Australian NPs. Research active NPs reported experience in a broad selection of research activities. Clinical outcomes research was reported as the most frequent in both Ireland (n=12, 92%) and Australia (n=34, 81%). Participants were more research active (n=24, 41%) between six and 15 years working as NP (Table 5). Nurse Practitioners age 45 to 64 years-old were more research active (n=42, 72%). There was a significant association between years authorised to practice as NP and research activity, for Australian NP only χ^2 (3, $N=76$) =20.4, $p=<0.001$. Twenty-seven percent of all participants

(n=26) had published research. More Irish (n=9, 69%) NPs reported having published than Australian NPs (n=15, 36%). The published research was across nursing, interdisciplinary and medical peer-reviewed journals. University links and medical consultant colleagues were identified as providing most support and encouragement with research for NPs. Support from universities resulted in more publications.

A relationship between leadership and research was examined. Research active NPs (n=56) had a higher leadership score (M=8, SD 1.8), than the non-research active NPs (n=40, M=7, SD 2.5). An independent t test identified this difference was statistically significant ($t(68)=2.3$, $p=0.02$).

Discussion

This research supports existing knowledge that NP work is primarily focused on the delivery of patient care, with a small proportion of time allocated to research (Chattopadhyay, Zangaro, & White, 2015; Gardner et al., 2010; Johnson, Brennan, Musil, & Fitzpatrick, 2016; Martin-Misener et al., 2015; Middleton, Gardner, Gardner, & Della, 2011). The research reports, for the first time that NPs identify themselves as leaders in nursing. Leadership activities have been validated among NPs across Ireland and Australia. Research among NPs has not been examined to date. This is the first research to compare leadership activities among NPs across two countries. This research identified that more than half of NPs across Ireland and Australia report being research active. Adding to the knowledge of the NP role the research has uncovered an association with leadership and research.

This is the first research exploring self-reported activities of Irish NPs and supports previous research in Australia identified the percentage of time allocated to activities within the NP role,

(Gardner, Gardner, Middleton, & Della, 2009; Middleton et al., 2011). Participant characteristics in this research were consistent with international NP populations, in the middle age category 45-64 years old, work full-time in their NP role, less than five years authorized to practice as NP and hold a master's degree (Chattopadhyay et al., 2015; Johnson et al., 2016; Kleinpell, Cook, & Padden, 2018; Middleton et al., 2011). This research is important as it supports the international literature reaffirming NP work focuses on improving patient care pathways and outcomes, while also reaffirming concerns about the little time allocated to research (Chattopadhyay et al., 2015; Johnson et al., 2016; Kleinpell et al., 2018; Martin-Misener et al., 2015; Middleton et al., 2011; Middleton et al., 2016; Ryder, Jacob, & Hendricks, 2019).

Nurse Practitioner Leadership

This is the first research that provides evidence that NPs in Ireland and Australia perceive themselves as leaders in the nursing profession. The high leadership scores reported provide evidence of this. Participants in this research have validated Elliott et al. (2013) leadership activities in Ireland, and among Australian NPs, for the first time. This builds on Elliott et al. (2013) research by proportioning the leadership activities among NPs in Ireland and Australia. This research has demonstrated that a greater proportion of NP leadership activity is clinically focused and associated with improving evidence-based care for patients. Previous research supports these findings where NP leadership has been described as primarily patient focused for defined patient caseloads (Carryer, Gardner, Dunn, & Gardner, 2007; Begley et al., 2010; Elliott et al., 2013; Lamb, Martin-Misener, Bryant-Lukosius, & Latimer, 2018; Ryder et al., 2019). This research builds on previous research exploring NP leadership in separate countries (Carryer et al. 2007, Begley et al., 2010; Elliott et al., 2013; Lamb et al., 2018), and provides

new knowledge, by reporting that there are strong similarities in the NP leadership role across Ireland and Australia.

Nurse Practitioner Research

This research provided evidence that NPs in Ireland and Australia spent less than 4% of work time on research and not all NPs were research active despite requirements identified in standards of practice (NMBA, 2014; NMBI, 2017). Previous research reports that knowledge generation to inform clinical practice is an expected outcome for NPs (Begley et al., 2015; Elliott et al., 2014; Gardner et al., 2010). Yet, the research literature is meagre in evaluating NP research practices internationally. This is the first research exploring research activities of NPs across Ireland and Australia. Previous research supports these findings identifying that NPs spend little work time on research (Begley et al., 2013; Chattopadhyay et al., 2015; Johnson et al., 2016; Martin-Misener et al., 2015; Middleton et al., 2011). Recent research by Ryder et al. (2019), however, identified that NPs view research as important to their role.

The sample of NPs in this research from both Ireland and Australia were principally working full-time in clinical roles. Ryder et al. (2019), suggest that this impeded research activity in NPs, due to the busyness associated with the clinical role. Interestingly, the largest proportion of NPs in this research were educated to a master degree level, and the literature suggests that this does not adequately prepare nurses to undertake research (Gallen, Kodate, & Casey, 2019; Kim & Hayat, 2015). However, the evidence of NPs educated to Doctoral level being sufficiently prepared in research, remains unconvincing (Carlson, Staffileno, & Murphy, 2018). Irrespective of the academic preparation, NPs research activity, disputably increases with support. Clinically focused research participants identified clinical outcomes research as the most frequent research methodology in this research. Nurse Practitioners working academia

identified quantitative research methodology as the most commonly used (Buchholz et al. 2015).

An association with leadership and research was reported in this research. This has not been explored in literature to date. Yet generating knowledge to inform clinical practice is a required leadership outcome for nurses (Carrick-Sen et al., 2015). This research indicates that the NP role in Ireland and Australia are comparable in work patterns, leadership and research activities.

Limitations

The sample size in this research is small. This may have been compounded through accessing the sample via professional associations. Less than half NPs are members of their respective associations, and not all permit contact for research purposes (Rowley, Balk, Guo, & Wallace, 2019; Wright, 2017). However, this was the optimal method of contact for this research considering geographical limitations. However, the characteristics were similar to other NP research projects. This research did not seek to establish an understanding of translational research from participants. Quality improvement by definition is not research, however, it could have been interpreted as research in the survey.

Impact

The work of NPs in Ireland and Australia was similar. Nurse Practitioners identified themselves as leaders in the nursing profession. Leadership and research activities for NPs in Ireland and Australia were also similar. Research active NPs reported a higher leadership score.

Conclusion

The findings of this research indicate that the NP role is similar in both Ireland and Australia in relation to work practices, leadership and research activities. Nurse Practitioners in Ireland and Australia identify themselves as leaders in the nursing profession and report similar leadership activities that are patient focused. Research participants identify the NP research role in both the generation of new knowledge and translational research. Research in the NP role in both Ireland and Australia is infrequent but there is scope for improvement. Maintaining or establishing strong links with nursing faculty in a university would suggest increased research output for NPs.

References

Aleshire, M. E., Wheeler, K., & Prevost, S. S. (2012). The future of nurse practitioner practice: a world of opportunity. *Nursing Clinics of North America, 47*(2), 181-191.

Australian Nursing and Midwifery Council, A. (2015). Nurse Practitioner Accreditation Standards 2015. In (pp. 38). Canberra, Australia: ANMAC.

Begley, C., Elliott, N., Lalor, J., Coyne, I., Higgins, A., & Comiskey, C. M. (2013). Differences between clinical specialist and advanced practitioner clinical practice, leadership, and research roles, responsibilities, and perceived outcomes (the SCAPE study). *J Adv Nurs, 69*(6), 1323-1337. doi:10.1111/j.1365-2648.2012.06124.x

Begley, C., Elliott, N., Lalor, J. G., & Higgins, A. (2015). Perceived Outcomes of Research and Audit Activities of Clinical Specialists in Ireland. *Clinical Nurse Specialist, 29*(2), 100-111. doi:10.1097/NUR.0000000000000104

Begley, C., Murphy, K., Higgins, A., Elliott, N., Lalor, J., Sheerin, F., . . . MacNeela, P. (2010). *Evaluation of Clinical Nurse and Midwife Specialist and Advanced Nurse and Midwife Practitioner Roles in Ireland (SCAPE) Final Report.*

Bourgeois, S., Blanchard, D., Doldissen, R., Maher, L., Stoddart, K., Johnston, N., & Hungerford, C. (2014). Nurse practitioner work: A case study. *Contemp Nurse, 47*(1-2), 61-68. doi:10.1080/10376178.2014.11081907

Buchholz, S. W., Bloch, J. R., Westrin, D., & Fogg, L. (2015). Nurse practitioner faculty research: Results from the 2012 National Organization of Nurse Practitioner Faculties Survey. *Journal of the American Association of Nurse Practitioners, 27*(12), 664-670. doi:10.1002/2327-6924.12250

Carlson, E. A., Staffileno, B. A., & Murphy, M. P. (2018). Promoting DNP-PhD collaboration in doctoral education: Forming a DNP project team. *Journal of Professional Nursing, 34*(6), 433-436. doi:10.1016/j.profnurs.2017.12.011

Carney, M. (2016). Regulation of advanced nurse practice: its existence and regulatory dimensions from an international perspective. *Journal of Nursing Management, 24*(1), 105-114. doi:10.1111/jonm.12278

Carrick-Sen, D., Baillie, L., Deaton, C., Lowes, L., McCabe, C., Norton, C., . . . Robb, E. (2015). Improving nursing research activity: the importance of leadership. *British Journal of Nursing, 24*(14), 751-751. doi:10.12968/bjon.2015.24.14.751

Carryer, J., Gardner, G., Dunn, S., & Gardner, A. (2007). The core role of the nurse practitioner: practice, professionalism and clinical leadership. *J Clin Nurs, 16*(10), 1818-1825. doi:10.1111/j.1365-2702.2007.01823.x

Chattopadhyay, A., Zangaro, G. A., & White, K. M. (2015). Practice Patterns and Characteristics of Nurse Practitioners in the United States: Results From the 2012 National Sample Survey of Nurse Practitioners. *The Journal for Nurse Practitioners, 11*(2), 170-177. doi:10.1016/j.nurpra.2014.11.021

Cope, D. G. (2014). Using electronic surveys in nursing research. *Oncol Nurs Forum, 41*(6), 681-682. doi:10.1188/14.ONF.681-682

Cox, K., Karikios, D., Roydhouse, J. K., & White, K. (2013). Nurse-led supportive care management: A 6-month review of the role of a nurse practitioner in a chemotherapy unit. *Australian Health Review, 37*(5), 632-635. doi:10.1071/AH13069

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd ed.). London, England: Sage Publications Inc.

Delamaire, M., & Lafortune, G. (2010). *Nurses in Advanced Roles: A description and Evaluation of Experiences in 12 Developed Countries.*

Dwyer, T., Craswell, A., Rossi, D., & Holzberger, D. (2017). Evaluation of an aged care nurse practitioner service: Quality of care within a residential aged care facility hospital avoidance service. *BMC Health Serv Res, 17*(1), 33. doi:10.1186/s12913-017-1977-x

Elliott, N. (2017). Building leadership capacity in advanced nurse practitioners – the role of organisational management. *Journal of Nursing Management, 25*(1), 77-81. doi:10.1111/jonm.12444

Elliott, N., Begley, C., Kleinpell, R., & Higgins, A. (2014). The development of leadership outcome-indicators evaluating the contribution of clinical specialists and advanced practitioners to health care: a secondary analysis. *J Adv Nurs, 70*(5), 1078-1093. doi:10.1111/jan.12262

Elliott, N., Begley, C., Sheaf, G., & Higgins, A. (2016). Barriers and enablers to advanced practitioners' ability to enact their leadership role: A scoping review. *International Journal of Nursing Studies, 60*, 24-45. doi:10.1016/j.ijnurstu.2016.03.001

Elliott, N., Higgins, A., Begley, C., Lalor, J., Sheerin, F., Coyne, I., & Murphy, K. (2013). The identification of clinical and professional leadership activities of advanced practitioners: findings from the Specialist Clinical and Advanced Practitioner

Evaluation study in Ireland. *J Adv Nurs, 69*(5), 1037-1050. doi:10.1111/j.1365-2648.2012.06090.x

Ford, L. C. (2015). Reflections on 50 years of change. *Journal of the American Association of Nurse Practitioners, 27*(6), 294-295. doi:10.1002/2327-6924.12271

Gallen, A., Kodate, N., & Casey, D. (2019). How do nurses and midwives perceive their preparedness for quality improvement and patient safety in practice? A cross-sectional national study in Ireland. *Nurse Education Today, 76*, 125-130. doi:10.1016/j.nedt.2019.01.025

Gardner, A., Gardner, G., Middleton, S., & Della, P. (2009). The Status of Australian Nurse Practitioners: The First National Census. *Australian Health Review, 33*(4), 679-689. doi:10.1071/AH090679

Gardner, G., Duffield, C., Doubrovsky, A., & Adams, M. (2016). Identifying advanced practice: A national survey of a nursing workforce. *International Journal of Nursing Studies, 55*, 60-70. doi:10.1016/j.ijnurstu.2015.12.001

Gardner, G., Gardner, A., Middleton, S., & Della, P. (2009). *AUSPRAC: The Australian Nurse Practitioner Study*. Australia

Gardner, G., Gardner, A., Middleton, S., Della, P., Kain, V., & Doubrovsky, A. (2010). The work of nurse practitioners. *J Adv Nurs, 66*(10), 2160-2169. doi:10.1111/j.1365-2648.2010.05379.x

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods, 18*(1), 3-20. doi:10.1177/1525822X05282260

Jennings, N., McKeown, E., O'Reilly, G., & Gardner, G. (2013). Evaluating patient presentations for care delivered by emergency nurse practitioners: A retrospective analysis of 12 months. *Australasian Emergency Nursing Journal, 16*(3), 89-95. doi:10.1016/j.aenj.2013.05.005

Johnson, J., Brennan, M., Musil, C. M., & Fitzpatrick, J. J. (2016). Practice patterns and organizational commitment of inpatient nurse practitioners. *Journal of the American Association of Nurse Practitioners, 28*(7), 370-378. doi:10.1002/2327-6924.12318

Kim, M., & Hayat, M. J. (2015). Statistical preparedness of master's degree-prepared nurses in the workplace. *Nurse Educator, 40*(3), 144-147. doi:10.1097/NNE.0000000000000125

Kleinpell, R., Cook, M. L., & Padden, D. L. (2018). American Association of Nurse Practitioners National Nurse Practitioner sample survey: Update on acute care nurse practitioner practice. *Journal of the American Association of Nurse Practitioners, 30*(3), 140-149. doi:10.1097/JXX.0000000000000030

Lamb, A., Martin-Misener, R., Bryant-Lukosius, D., & Latimer, M. (2018). Describing the leadership capabilities of advanced practice nurses using a qualitative descriptive study. *Nursing Open*. doi:10.1002/nop2.150

Leggat, S. G., Balding, C., & Schiftan, D. (2015). Developing clinical leaders: the impact of an action learning mentoring programme for advanced practice nurses. *J Clin Nurs, 24*(11-12), 1576-1584. doi:10.1111/jocn.12757

Martin-Misener, R., Donald, F., Wickson-Griffiths, A., Akhtar-Danesh, N., Ploeg, J., Brazil, K., . . . Taniguchi, A. (2015). A mixed methods study of the work patterns of full-time nurse practitioners in nursing homes. *J Clin Nurs, 24*(9-10), 1327-1337. doi:10.1111/jocn.12741

McCaffrey, R., & Reinoso, H. (2017). Transformational Leadership: A Model for Advanced Practice Holistic Nurses. *Journal of Holistic Nursing, 35*(4), 397-404. doi:10.1177/0898010116685242

Middleton, S., Gardner, A., Gardner, G., & Della, P. R. (2011). The status of Australian nurse practitioners: The second national census. *Australian Health Review, 35*(4), 448-454. doi:10.1071/AH10987

Middleton, S., Gardner, A., Gardner, G., Della, P. R., Lam, L., & Allnutt, N. (2016). How has the profile of Australian nurse practitioners changed over time? *Collegian, 23*(1), 69-77. doi:10.1016/j.colegn.2014.10.004

Middleton, S., Gardner, G., Gardner, A., Della, P., Gibb, M., & Millar, L. (2010). The first Australian nurse practitioner census: A protocol to guide standardized collection of information about an emergent professional group: Australian nurse practitioner census: A protocol guide. *International Journal of Nursing Practice, 16*(5), 517-524. doi:10.1111/j.1440-172X.2010.01877.x

Nursing and Midwifery Board of Australia, N. (2014). *Nursing and Midwifery Board Nurse practitioner standards for practice effective 1 January 2014 pdf.* Australia: Nursing and Midwifery Board of Australia

Nursing and Midwifery Board of Australia, N. (2016). Safety and quality guidelines for nurse practitioners. In (pp. 4). Melbourne, Victoria: Nursing and Midwifery Board of Australia.

Nursing and Midwifery Board of Ireland, N. (2017). Advanced Practice (Nursing) Standards and Requirements. In (pp. 44). Dublin, Ireland: Nursing and Midwifery Board of Ireland.

Pilot, D. F. (2010). *Statistics and Data Analysis for Nursing Research, second edition* (second edition ed.). New Jersey, USA: Pearson Education Inc.

Poghosyan, L., & Liu, J. (2016). Nurse Practitioner Autonomy and Relationships with Leadership Affect Teamwork in Primary Care Practices: a Cross-Sectional Survey. *J Gen Intern Med, 31*(7), 771-777. doi:10.1007/s11606-016-3652-z

Rowley, T., Balk, J., Guo, J.-W., & Wallace, A. S. (2019). Factors influencing nurse practitioners' decisions to join nurse practitioner associations. *Journal of the American Association of Nurse Practitioners*, 1. doi:10.1097/JXX.0000000000000231

Ryder, M., Jacob, E., & Hendricks, J. (2019). An inductive qualitative approach to explore Nurse Practitioners views on leadership and research: An international perspective. *J Clin Nurs, 28*(13-14), 2644-2658. doi:http://dx.doi.org/10.1111/jocn.14853

Sandelowski, M. (2000). Combining Qualitative and Quantitative Sampling, Data Collection, and Analysis Techniques in Mixed-Method Studies. *Research in nursing & health, 23*(3), 246-255. doi:10.1002/1098-240X(200006)23:3<246::AID-NUR9>3.0.CO;2-H

Thompson, W. G., & Meskell, P. (2012). Evaluation of an Advanced Nurse Practitioner (Emergency Care)—An Irish Perspective. *The Journal for Nurse Practitioners, 8*(3), 200-205. doi:10.1016/j.nurpra.2011.09.002

Wand, T., White, K., & Patching, J. (2011). Realistic evaluation of an emergency department-based mental health nurse practitioner outpatient service in Australia. *Nursing & Health Sciences, 13*(2), 199-206. doi:10.1111/j.1442-2018.2011.00601.x

Wright, K. B. (2017). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication, 10*(3). doi:10.1111/j.1083-6101.2005.tb00259.x