REVIEW PAPER

Factors affecting nurse practitioner role implementation in Canadian practice settings: an integrative review

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Abstract

Aim. To review the literature about the Canadian experience with nurse practitioner role implementation and identify influencing factors.

Background. Although nurse practitioners have been in existence for more than 40 years, their integration into healthcare systems has been challenging. While frameworks exist to guide implementation of these roles, clear identification of factors influencing role implementation may inform best practices. Given that Canada has witnessed considerable growth in nurse practitioner positions in the past decade, an exploration of its experience with role implementation is timely.

Data sources. A review of Canadian literature from 1997 to 2010 was conducted. Electronic databases including CINAHL, Cochrane Database of Systematic Reviews, Health Source: Nursing Academic Edition, Medline, Social Science Index, PubMed, Web of Science and PsychINFO and government and professional organization websites were searched.

Methods. An integrative review was performed guided by Whittemore and Knafl's method.

Results. Ten published studies and two provincial reports were included. Numerous facilitators and barriers to implementation were identified and analysed for themes. Three concepts influencing implementation emerged: involvement, acceptance and intention. Involvement is defined as stakeholders actively participating in the early stages of implementation. Acceptance is recognition and willingness to work with nurse practitioner. Intention relates to how the role is defined.

Conclusion. This integrative review revealed three factors that influence nurse practitioner role implementation in Canada: involvement, acceptance and intention. Strategies to enhance these factors may inform best practice role implementation processes.

Keywords: barriers, concept development, facilitators, integrative review, nurse practitioner, role implementation

Introduction

Advanced nursing practice, according to the national framework developed by the Canadian Nurses Association (CNA) is 'an umbrella term describing an advanced level of clinical nursing practice that maximizes the use of graduate educational preparation, in-depth nursing knowledge and expertise in meeting the health needs of individuals, families, groups, communities and populations. It involves analysing and synthesizing knowledge; understanding, interpreting and applying nursing theory and research; and developing and advancing nursing knowledge and the profession as a whole' (CNA, 2008, p. 10). In Canada, there are two types of advanced practice nurses: the clinical nurse specialist and the nurse practitioner (NP). The nurse anaesthetist is just emerging in this country. This paper will focus on the NP.

The NP role has been in existence for more than 40 years (Miller *et al.* 2005). Originally established in the United States in 1965 (Silver *et al.* 1967, Miller *et al.* 2005), Canada followed closely behind in 1967 with the development of a programme to educate NPs to practise in remote northern communities (DiCenso *et al.*, 2003). Other countries have since then introduced the NP role. Currently more than 60 countries have implemented some type of advanced nursing role (Driscoll *et al.* 2005, Schober & Affara 2006, Srivastava *et al.*, 2008, Donato 2009, Delamaire & Lafortune 2010).

Internationally, there is no consensus on how best to define, introduce or implement advanced practice nursing (APN) roles (Schober & Affara 2006, Sheer & Wong 2008). The lack of a consistent international approach to defining and implementing APN roles has contributed to the diverse understanding of what constitutes advanced nursing roles and the complexity of establishing best practices for implementing new roles (Bryant-Lukosius *et al.* 2004, Delamaire & Lafortune 2010).

Historically, factors at the systems level have impeded NP role implementation. Systems level factors include a lack of legislative and regulatory authority for the role, conflicting role definitions, multiple titles, inadequate organization of care, no established funding mechanisms, opposition from the medical profession and inconsistent educational requirements (Dunn & Nicklin 1995, Schreiber *et al.* 2003, Bryant-Lukosius & DiCenso 2004, Micevski *et al.* 2004, Delamaire & Lafortune 2010). Delamaire and Lafortune (2010) surveyed 12 developed countries and found that as countries attempt to implement the role, these systems issues continue to influence implementation efforts.

The International Council of Nurses Nurse Practitioner/ Advanced Practice Network (2007) defines a NP as a Registered Nurse with expert knowledge, complex decision-making skills and clinical competencies for expanded practice. In Canada, NPs are defined as Registered Nurses with additional education and experience 'who possess and demonstrate the competencies to autonomously diagnose, order, and interpret diagnostic tests, prescribe pharmaceuticals, and perform specific procedures within their legislated scope of practice' (Canadian Nurse Practitioner Initiative 2006, p. 26, CNA 2009). Although the NP role exists in all Canadian provinces and territories, in some jurisdictions introduction of the role has been more recent (Schreiber & MacDonald 2003, DiCenso 2008). Across Canada there is variation in understanding of the NP role and how best to implement it to support optimal NP practice (S. Doucette & E. Sangster-Gormley, unpublished data, DiCenso *et al.* 2007, DiCenso & Bryant-Lukosius 2010).

Early Canadian studies indicated that NPs give safe and effective care while increasing access to primary care (Spitzer *et al.* 1974, 1975). Instead of continued role development and implementation, lack of demand for NPs led to closure of most NP educational programmes in the late 1980s (DiCenso *et al.*, 2003, Worster *et al.* 2005, Nurse Practitioner Association of Ontario 2006). Factors contributing to this lack of demand included an oversupply of physicians, limited public awareness and understanding of the NP role and an absence of the following: a remuneration mechanism, legislation supporting the role, government funding for educational programmes and support from organized medicine and nursing (Spitzer 1984, Haines 1993, Calnan & Fahey-Walsh 2005, deWitt & Ploeg 2005).

For over a decade, there has been renewed interest in the NP role by federal and provincial governments as a way to influence changes in Canada's healthcare system (Hutchinson *et al.* 2001, Romanow 2002, Rachlis 2003, Lewis 2004). Governments, regulators, educators, employers and prospective NPs across Canada have expended substantial resources to implement or expand the NP role. Provinces and territories have enacted legislation and regulation for the role and there is a movement to standardize educational programmes and the title (Canadian Nurse Practitioner Initiative 2006, DiCenso *et al.* 2007).

While some systemic issues that contribute to the credibility of the role such as legislation and regulation have been addressed, other factors hindering NP role implementation in practice settings remain and best practices for how to implement the role are uncertain (Calnan & Fahey-Walsh 2005, van Soeren *et al.* 2009). Practice settings are defined as the geographical locations, in which NPs enact their role. These include acute care, long-term care and primary healthcare settings. DiCenso *et al.* (2007) noted that the context of practice settings influences NP role implementation and

integration. As of this paper, there is a need to further identify practice setting specific factors that influence implementation and contribute to successful NP role implementation (Bryant-Lukosius *et al.* 2004).

The Participatory, Evidence-Based, Patient-Focused Process for Advanced Practice Nursing Role Development, Implementation and Evaluation (PEPPA) framework is one model that has been developed to guide the development and effective use of APN roles in practice settings (Bryant-Lukosius & DiCenso 2004, Bryant-Lukosius 2009). The PEPPA framework has been used to develop NP roles in acute care (McNamara *et al.* 2009), long-term care (McAiney *et al.* 2008) and primary healthcare settings (Martin-Misener *et al.* 2010). The theory underlying the PEPPA framework is that the process of APN role implementation can be successfully achieved through an evidence-informed, patient-centred and participatory approach. The framework demonstrates an organized, interrelated process that moves from initial discussion of what changes to the current model of care are needed to facilitate an APN role, to implementation and evaluation of the role once implemented. The PEPPA framework demonstrates the complexity of the process of role implementation. Steps six and seven of the PEPPA framework relate to planning and initiating implementation. Step six identifies organizational structures that need to be in place to enable implementation of the role in practice settings. Step seven begins with the hiring of the NP and stakeholders are encouraged to monitor implementation (Bryant-Lukosius & DiCenso 2004). Although the framework gives direction and guidance for developing, implementing and evaluating APN roles, aspects of the complexity of Steps six and seven of the framework remain elusive and best practices for implementing these roles into practice settings have not been established. The Canadian experience with NP role implementation gives insight into this highly complex process and informs the identification of key factors in need of further study.

The review

Aim

The aim of this review was to summarize the literature about the Canadian experience with NP role implementation and to identify influencing factors at the practice setting level in order to develop a more extensive understanding of role implementation and inform theory development (Colling 2003, Whittemore & Knafl 2005). Primary, acute and long-term care settings were specifically targeted for this review because it is in these settings that NPs enact the role.

Design

An integrated review was conducted to identify practice setting level factors that influence NP role implementation (Whittemore & Knafl 2005). An integrative review differs from a systematic review; in that it summarizes a broad body of research that uses diverse study designs and methods to facilitate a fuller understanding of complex phenomena, such as NP role implementation.

Search method

Electronic databases including CINAHL, Cochrane Database of Systematic Reviews, Health Source: Nursing Academic Edition, Medline, Social Science Index, PubMed, Web of Science and PsychINFO were searched using the keywords 'nurse practitioner', 'role', 'integration' and 'implementation' and the phrases 'NP and role', 'NPs and implementation studies', 'NPs and integration', 'NPs and organizational change' and 'NP role implementation'. Grey literature obtained through digital dissertations and documents on governmental and nursing organization websites were identified.

Published and unpublished Canadian NP implementation studies written in the English language in the last 13 years (January 1997–July 2010) were included in the review. Limiting studies to the previous 13 years excluded early studies of NP role implementation prior to legislation and regulation of the role. Qualitative and quantitative studies of implementation or integration of the NP role in acute, primary health and long-term care settings were included. Role implementation refers to the process used to establish the NP role in a practice setting and is a component of role integration.

Role development studies were excluded. Role development is limited to designing the role, not the actual hiring of an NP into a position. Discussion papers, theoretical papers and studies of extended or expanded nursing roles (e.g. Hanrahan *et al.* 2001) were also excluded.

Search outcome

A total of 58 studies were identified. Abstracts or full articles were reviewed for inclusion by the first author (ESG). Ten published studies and two provincial reports published between 1997 and 2010 met the inclusion criteria for this review.

Quality appraisal

Whittemore and Knafl (2005) do not advocate that quality appraisal of included evidence is essential in an integrative

review. All studies meeting the inclusion criteria, regardless of methodological quality, were retained in the review in an effort to examine all evidence of factors that have influenced NP role implementation in practice settings.

Data abstraction and synthesis

The findings from each study were reviewed to identify barriers and facilitators to the process of NP role implementation across practice settings. Barriers and facilitators were then reviewed to identify themes. Miles and Huberman (1994) describe the process of identifying common themes as sorting data into intellectual bins so that orienting ideas may give clarity and focus for researchers. Naming themes and looking for relationships may then be used to identify concepts to guide future studies (Miles & Huberman 1994). The themes were analysed further and three concepts related to the process were identified.

Results

Characteristics of studies

In Canada, the NP role has been implemented in acute, primary healthcare and long-term care settings. The findings of studies conducted in each of these settings indicate that implementing the NP role is a complex process that occurs over time. While there are factors at the systems (macro) and organizational (meso) levels that influence implementation, it is in practice settings (micro level) where NPs are expected to enact the role. Findings from the studies included in this review identified multiple factors influencing NP role implementation in practice settings (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Reay *et al.* 2003, 2006, Jensen & Scherr 2004, Stolee *et al.* 2006, Gould *et al.* 2007, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009, van Soeren *et al.* 2009). Three studies (Goss Gilroy Inc 2001, DiCenso *et al.*, 2003, Gould *et al.* 2007) also identified systems level factors, such as healthcare funding, restrictive legislation and regulatory frameworks and methods of physician remuneration as factors influencing implementation.

The studies used quantitative and qualitative methodologies. Five studies (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Jensen & Scherr 2004, Stolee *et al.* 2006, van Soeren *et al.* 2009) employed structured self-administered questionnaires. Five used interviews (Cummings *et al.* 2003, Reay *et al.* 2003, 2006, Gould *et al.* 2007, Thrasher & Purc-Stephenson 2007) and two used mixed methods of questionnaires and interviews (DiCenso *et al.*, 2003, Martin-Misener *et al.* 2009). Participants included NPs, managers and administrators of healthcare facilities, physicians, registered nurses, other professional staff and community members. The studies were conducted in five Canadian provinces.

In most studies, factors influencing implementation were referred to as either barriers or facilitators. In Table 1, we list the studies included in the review and the barriers and facilitators identified in each.

Factors influencing NP role implementation

Study findings reveal barriers to NP role implementation in primary healthcare, acute care and long-term care settings. As well, barriers to implementing the NP role occur at systems, organizational and practice setting levels. At the systems level, a lack of legislation and regulation contribute to restricted role domains (Goss Gilroy Inc 2001, DiCenso *et al.*, 2003). At the organizational level, lack of a standard job descriptions, conflicting expectations, inadequate administrative support for the role, workload and remuneration issues, organizational culture, a lack of long-term human resource planning for the role and lack of NP role autonomy contribute negatively to NP role implementation (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.* 2003, Stolee *et al.* 2006). Barriers identified in various practice settings include physician resistance, staff's lack of understanding of the NP role and limited direct contact of the NP with other staff (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.* 2003, 2007, Stolee *et al.* 2006).

Unlike established nursing roles, the complexity of implementation of the NP role requires prior planning for role introduction, mentorship for the NP and understanding of the interface between the NP and other professional staff (van Soeren & Micevski 2001, Cummings *et al.* 2003, Stolee *et al.* 2006, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009). As NPs are a relatively new role in the Canadian healthcare system, it is imperative that key stakeholders have knowledge about the role, a clear understanding of how NPs are expected to function, their competencies, capabilities and scope of practice. Lack of role clarity contributes to confusion and resistance to the role by others. Variable support, understanding and acceptance of the NP role by stakeholders such as managers, physicians and other professional staff influence implementation (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, Martin-Misener *et al.* 2009, van Soeren *et al.* 2009).

Table 1 Studies included in the review

Author	Participants	Study design and data collection method	Setting	Barriers influencing implementation	Facilitators influencing implementation
Cummings *et al.* (2003)	2 Administrators 1 Nurse manager 3 ACNPs 2 Physicians 1 Clinical nurse specialist 2 Clinical supervisors 6 Registered nurses	Modified experiential case study Interviews	Acute care; Alberta	Lack of role clarity Resistance from nursing staff No clear vision for the role Lack of a model to guide role implementation Differing role expectations	Support from senior managers and physicians
DiCenso *et al.* (2003)	253 NPs 718 Physicians 260 Patients	Mixed methods: Self-administered surveys Interviews	Primary health care; Ontario	Healthcare financing Restrictive legislation Funding limitations Resistance from other healthcare providers Physician personality and philosophy	Physician personality and philosophy NP's prior work experience Working relationships with team members
Goss Gilroy Inc (2001)	22 NPs 11 Physicians 254 Other health professionals	Quantitative Self-administered questionnaire	Primary health care; Newfoundland/Labrador	Lack physician and administrative support and acceptance Restrictive legislation and regulatory framework NP isolation Lack of preparation for role introduction or long-term human resources plan	NP's prior experience NP's leadership in educating team about the role Physician and administrative champions More than one NP in setting
Gould *et al.* (2007)	7 NPs	Descriptive Semi-structured interviews	Primary health care; New Brunswick	Hierarchical structure in the setting Fee-for-service physician remuneration	
Jensen and Scherr (2004)	1 NP 6 Registered nurses 12 Physicians 3 Administrators 10 Other professional staff	Quantitative Self-administered questionnaires	Acute care; Alberta	Lack of other's appreciation of role domains Lack of standard job description Limited intra-professional support	NP independence and role autonomy
Martin-Misener *et al.* (2009)	7 Healthcare providers 9 Healthcare administrators 2 Multidisciplinary service provider groups 2 Community resident groups	Longitudinal cohort study Individual and group interviews Self-administered questionnaires	Primary health care; Nova Scotia	Resistance from healthcare professionals	Political and administrative support for the role Patient satisfaction with the NP NP–paramedic and NP–physician collaboration
Reay *et al.* (2003)	7 Managers 25 NPs	Descriptive Interviews	Acute care and Primary health care; Alberta	Disruption of well-established routines Resistance from RNs	Administrative support for the role and team

Table 1 (*Continued*)

Author	Participants	Study design and data collection method	Setting	Barriers influencing implementation	Facilitators influencing implementation
Reay et al. (2006)	4 Physicians 4 Clinic staff 9 Regional health authority staff 3 Community members	Case study, Grounded theory Interviews	Physician clinic; Alberta		Management support of team and champions to guide the process Strong team relationships
Stolee et al. (2006)	10 Administrators 3 Physicians 1 NP 32 Registered nurses 45 Nurses' aides 11 Allied health professionals	Evaluation study Self-administered questionnaire	Long-term care; Ontario	Lack of direct contact with staff and administrative support Lack of staff understanding of the role No perceived need for the role	Willingness of staff to work with NP NP–physician–staff collaboration Opportunity for direct contact with staff Administrative support
Thrasher and Purc-Stephenson (2007)	6 NPs 6 Physicians 6 Registered nurses 6 Managers	Grounded theory Semi-structured interviews	Emergency Department; Ontario	Fee-for-service physician remuneration Inadequate definition of the role	Previous experience working with NP Advanced discussion of the role with staff
van Soeren et al. (2009)	371 PHC NPs	Descriptive Self-administered questionnaire	Primary health care; Ontario	Lack of physician understanding of the role Inability to practise to full scope	
van Soeren and Micevski (2001)	14 ACNPs 12 Physicians 9 Administrators 34 Registered nurses	Descriptive Self-administered questionnaire	Acute care; Ontario	Lack of NP mentorship and knowledge of the role Perceived lack of administrative and physician support	NP's level of preparation

ACNPs, acute care nurse practitioner; PHC, primary health care.

Implementing the NP role in healthcare systems requires changes in policies at different levels of the organization. Factors at the organizational level can either create barriers or create facilitators to successful role implementation. Previous research has identified lack of a standard job description, differing role expectations, inadequate administrative support, workload and remuneration issues, organizational culture, no clear vision for the role, lack of physicians and other staff's understanding of the role, lack of long-term human resource planning for the role and inability to practise to full scope as organizational barriers (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Jensen & Scherr 2004, Stolee *et al.* 2006, Gould *et al.* 2007, van Soeren *et al.* 2009). Administrative support and champions, patient satisfaction with the NP, advanced discussion of the role with staff, and the NP's level of preparation facilitate implementation (van Soeren & Micevski 2001, Cummings *et al.* 2003, Jensen & Scherr 2004, Reay *et al.* 2006, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009).

While system and organizational factors influence how the NP role is implemented, it is in the practice setting that the NP enacts the role. Barriers to successful implementation in practice settings include lack of physician and administrative support, poor understanding of how the NP role interfaces with other members of the health team, NP isolation and limited direct contact of the NP with other staff (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Stolee *et al.* 2006, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009, van Soeren *et al.* 2009).

Although multiple barriers have been identified in the practice setting, manager and physician support and knowledge of the role, NP's prior work experience and level of preparation, trust and acceptance by team members and patient satisfaction with NP facilitate implementation (van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Reay *et al.* 2006, Stolee *et al.* 2006, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009, van Soeren *et al.* 2009). Furthermore, managers play a pivotal role. Managers contribute to successful implementation by staying focused on the overall objectives, supporting all staff as they experience the stresses and strains of change and working with the team to develop goals focusing on all aspects of the team, not just the NP role (Reay *et al.* 2003).

What is evident from this literature review is that successfully implementing the NP role into practice settings is a complex process that is influenced by numerous factors. The multiplicity of barriers and facilitators indicates the challenges of NP role implementation, especially in the early stages. Clearly, there is variation among these factors as facilitators become barriers if not addressed appropriately. Conversely, barriers can be changed to facilitators. These barriers or facilitators exert influence on role implementation and long-term sustainability of the NP role (Mark *et al.* 2003).

Identifying concepts

To further our understanding of factors influencing the process of implementation, we compared the data from our review looking for patterns and themes across data sources (Miles & Huberman 1994). By removing the qualifiers of barrier or facilitator, we were able to analyse the multiplicity of factors influencing implementation in practice settings. From this analysis of studies of role implementation across practice settings, we identified three concepts related to the process. These concepts are involvement, acceptance and intention. These concepts are particular and add to the understanding of Steps six and seven of the PEPPA framework.

Involvement

Involvement is defined as actively participating in the early stages of role implementation. Characteristics of this concept are stakeholder inclusion and a shared understanding and vision for the role that guides the implementation process. These attributes were derived from previous studies indicating that inclusion of managers, physicians and other healthcare providers in activities, such as mentoring new NPs (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Reay *et al.* 2003, 2006, Stolee *et al.* 2006) was important. As well, managers attending to the varied team perspectives, assisting with conflicts that may arise over altered working relationships and guiding the team through the process (Reay *et al.* 2003, 2006) and prior planning (Goss Gilroy Inc 2001, Cummings *et al.* 2003) influence NP role implementation. Managers demonstrate involvement by introducing the NP to other team members, assisting the team to understand how the NP role fits in the practice setting, involving team members in the process and allowing all team members to voice concern about how the NP role will impact various established roles (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Stolee *et al.* 2006). Involvement of stakeholders such as physicians and other professional staff in the implementation process allows a common understanding and shared vision for the role to emerge. A shared understanding of the role may then foster alignment of the NP role with patient needs (DiCenso *et al.* 2003, 2007).

Table 2 Factors influencing implementation in practice settings and related concepts

Author	Factors identified in practice settings Influencing implementation	Concept
Cummings *et al.* (2003)	Understanding and knowledge of role by team	Acceptance
	Organization plans for implementation	Involvement
	• Involvement of team in process	
	Role expectations/work demands	Intention
	• Delineation of interface between RN–NP roles	
DiCenso *et al.* (2003)	Shared vision of NP role	Involvement
	• Common values, understanding of mission and desired outcomes aligned with NP role	
	• Identified needs of community	
	• Involvement of NP in development of position description	
	• Allocation of resources	
	Understanding of role	Acceptance
	• Community and physician acceptance of role	
	• Team understanding of each other's roles	
	• Collaborative culture	
	• Role autonomy	
	• NP able to enact role domains/competencies	
	Defining NP role	Intention
	• Identification of patient needs NP expected to meet	
	• Team understanding and readiness for role	
	• Summary, circulation and discussion of NP role in writing	
	• Development of guidelines and job descriptions	
	• Building in time for NP to establish rapport with team	
Goss Gilroy Inc (2001)	Physician, team and community support for the role	Acceptance
	NP's prior experience with team	
	Planning for role introduction	Intention
	• Defined scope of practice	
	• Defined role expectations and goals for implementation	
	• Allocation of resources	
	Management and physician involvement, support and feedback	Involvement
	• Long-range human resource planning	
	• Inclusion of team in decisions related to role	
	• Introduction of NP to team and community	
	• Shared understanding of role fit with team	
	NP's involvement in educating team about the Role	Involvement
Gould *et al.* (2007)	Physician understanding of the role	Acceptance
Jensen and Scherr (2004)	• Role demands and definition	Intention
	• Acceptance and support	Acceptance
	• Independence and role autonomy	
Martin-Misener *et al.* (2009)	Defining the NP role	Intention
	• Team understanding and readiness for role	
	MD, team and community support for role	Acceptance
Reay *et al.* (2003)	Manager's role in process	Involvement
	• Attention given to varied perspectives of team	
	• Involvement of team in process	
	• Managing altered working relationships	
	Identified goals for role implementation	Intention
Reay *et al.* (2006)	Management support of team and champions to guide implementation process	Involvement
	• Team involvement in implementation	
	• Model to guide the process	
	Understanding of role by team	Acceptance

Table 2 (*Continued*)

Author	Factors identified in practice settings Influencing implementation	Concept
Stolee *et al.* (2006)	Administrative support	Involvement
	• Introduction of the role to staff	
	• Reminding staff to use the NP role effectively	
	Willingness of team to collaborate	Acceptance
	Definition of role expectations	Intention
Thrasher and Purc-Stephenson (2007)	Defining the role	Intention
	Staff's previous experience working with an NP	Acceptance
van Soeren *et al.* (2009)	MD understanding of the role	Acceptance
	NP practicing to full scope	
van Soeren & Micevski (2001)	Administrative and nursing support for role	Involvement
	• Mentorship for new NPs	
	• Involvement of team in process	
	Acceptance from team	Acceptance
	Role clarity/definition	Intention

Acceptance

Acceptance is defined as recognition of the role and willingness to work with the NP. Attributes of this concept include support for and collaboration with the NP, valuing the NP's prior experience (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Stolee *et al.* 2006) and awareness and appreciation of the role by team members (Cummings *et al.* 2003, Reay *et al.* 2006). In turn, the ability of the NP to enact all dimensions of the role is influenced by the degree of the team's acceptance (DiCenso *et al.*, 2003).

Intention

The concept of intention relates to how the NP role is defined. Determining the intentions of the NP role gives clarity about how the NP will interface with other providers, including physicians, and expectations such as the patient population for whom the NP will give care (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, DiCenso *et al.*, 2003, Stolee *et al.* 2006, Thrasher & Purc-Stephenson 2007, Martin-Misener *et al.* 2009). Team collaboration in defining role expectations allows members to identify patient needs collectively and facilitates the team's understanding and readiness for the role (DiCenso *et al.*, 2003). Clearly identified intentions for the role also assist in the development of position descriptions and guidelines for how the NP is intended to function in the team (Goss Gilroy Inc 2001, DiCenso *et al.* 2003, 2007). Characteristics of intention include role definition and expectations, goals for the role and a plan for how to implement the role.

The involvement of key stakeholders in the implementation process, along with their acceptance of the NP role, and clearly understood intentions for role implementation are critical factors in the successful implementation of the NP role. The effectiveness of the NP role is influenced by how the implementation process is carried out in practice settings. In Table 2, the concepts of involvement, acceptance and intention are related to factors that influence the process of implementation in practice settings.

Discussion

The NP role is emerging around the world (Driscoll *et al.* 2005, Schober & Affara 2006, Srivastava *et al.*, 2008, Donato 2009, Delamaire & Lafortune 2010). The studies included in this review reveal the complexity of implementing the role in practice settings. Practice settings possess a unique culture established prior to implementation of the NP role. The role is introduced into settings where recognized relationships, roles and work patterns exist. Adding a new role into this milieu is not simple or straight forward as demonstrated by the studies included in this review.

Multiple factors influence how successfully the role is implemented. While in one setting a factor may act as a barrier, in another setting the same factor may facilitate the process. Administrative support is one example of this variability. Goss Gilroy Inc (2001) found lack of administrative support to be a barrier to implementation. Reay *et al.* (2003) identified managerial support as a facilitator to successful implementation. Similarly, physician and staff support was identified as a barrier when the support was lacking (Cummings *et al.* 2003, DiCenso *et al.*, 2003) and a facilitator if present (Reay *et al.* 2006).

Acknowledging the complexity of the process, and that barriers or facilitators exist, is one step to deepening our understanding of the implementation process. The concepts of intention, acceptance and involvement were identified by

looking for influencing factors across studies. The concepts summarize the barriers and facilitators that need to be addressed when implementing the NP role. From a knowledge translation perspective, the concepts add to our understanding of how implementation unfolds and alert those in practice settings to the key processes that are needed to enhance implementation. Key processes include the need to involve team members (Goss Gilroy Inc 2001, van Soeren & Micevski 2001, Cummings *et al.* 2003, Reay *et al.* 2003), gain their acceptance and support for the role (Jensen & Scherr 2004, Martin-Misener *et al.* 2009) and clearly identify goals and NP role expectations (Cummings *et al.* 2003, DiCenso *et al.*, 2003, Stolee *et al.* 2006).

From a research perspective, the concepts can be used to sensitize researchers to areas in need of further study. However, further research is needed to determine the hardiness of these concepts and, if they are used to guide research, to determine what if anything would be missed. If

future researchers determine their hardiness, the concepts of involvement, acceptance and intention will be very useful when implementing the NP role in the future.

Limitations of the review

This integrative review consolidates factors that have been previously identified as influencing NP role implementation. While the concepts consolidate many individual factors that have influenced implementation in previous Canadian studies, these factors may not apply to practice settings in other countries. There is a need to recognize that the studies were conducted in settings where the NP role was new and these concepts may not be important after the role is well established in a practice setting. For instance, the same barriers and facilitator may not exist when hiring a second NP in a practice setting.

The following limitations were also identified. All studies of various designs were included in the review; however, no quality assessment of study design was included. While this limitation is consistent with Whittemore and Knafl's (2005) approach, and that Arksey and O'Malley (2003), including all evidence means that potentially weak evidence are also included. While this approach gave us breadth and the opportunity to identify many facilitators and barriers, some findings may not be valid if they were identified through a weak study design or poor data collection methods. However, the consistency of the findings across studies strengthens the case for inclusion of factors that were identified in the studies.

Another limitation is that findings of studies published in French were excluded. Studies conducted in the Canadian province of Quebec and written in French would have been missed and therefore some of the Canadian experience with NP role implementation would not have been included.

A single reviewer conducted the search, applied the inclusion criteria and extracted all data from the studies. Consequently, some studies could have been missed and some factors may also have been missed or incorrectly extracted. Efforts were made to validate data by having two research assistants independently review every paper to double-check the accuracy of data extraction. However, this process was not blinded as they had access to the final paper as they reviewed the referenced papers.

Evidence supports the need to consider multiple factors when implementing the NP role. However, additional research is needed to determine how and why these concepts influence the process. Knowledge generated using these concepts will contribute to best practices for role

implementation, improve the process and support NP role sustainability.

Conclusion

Multiple factors have influenced early efforts to implement the NP role in Canada. This review of implementation studies facilitated our development of three concepts related to NP role implementation in need of further study. Identifying barriers and facilitators to implementation from completed studies has been helpful. At this time in knowledge development, there is a need to advance nursing's understanding of the complexity of implementing this advanced nursing role and to move beyond simply identifying factors that influence the process.

As countries around the world continue to look to advanced nursing roles such as the NP to increase access to care, improve patient outcomes and extend the boundaries of nursing practice developing best practices for role implementation is imperative. The use of the concepts of intention, involvement and acceptance will contribute to these best practices as we continue to expand our knowledge of how acceptance occurs, who needs to be involved in implementation and how best to define intentions for the role.

Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

ESG was responsible for the study conception and design. ESG was responsible for the drafting of the manuscript. RMM, BDW and AD made critical revisions to the paper for important intellectual content.

Supporting Information Online

There is no supporting information associated with this article.

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