Impact of Advanced Access Scheduling on Patient Care Choices and Health Behaviours in a Nurse Practitioner-Led Clinic

R. Heale, J. Fournier

R. Heale, RN(EC), NP-PHC, DNP, PhD(c)
Associate Professor, School of Nursing
Laurentian University
rheale@laurentian.ca

J. Fournier, BScN, NP-PHC, MHS
Adjunct Professor, School of Nursing
Laurentian University
jl_fournier@laurentian.ca

Abstract

The Nurse Practitioner-Led Clinic (NPLC) is a new model of primary healthcare. The wholistic approach of nurse practitioner (NP) led care in an NPLC that implements Advanced Access scheduling has the potential to enhance timely access to care and improve health outcomes. The purpose of this study was to determine the experience of patients in one NPLC as well as their healthcare behaviours related to Advanced Access scheduling. A previously developed survey with items related to appointment access, health behaviours and satisfaction was mailed once to patients at a NPLC in northern Ontario. 535 patients replied for a response rate of 29%. A majority (85.4%) were able to access same-day appointments. Access to same-day appointments was associated with less likelihood of attending a walk-in-clinic or emergency department in addition to self-reports of improvements in lifestyle and better control of medical condition(s). Advanced access scheduling contributes to optimal patient care in an NPLC setting. The NP role in lifestyle counselling and wholistic care in the NPLC model contributes to improved self-reported health. Access to an appointment at a point of 'readiness' may positively contribute to lifestyle changes and overall health of patients.

Key words: nurse practitioner-led clinic, advanced access, health promotion, patient satisfaction

Résumé

La clinique dirigée par l'infirmière praticienne est un nouveau modèle de soins de santé primaires. L'approche holistique de l'infirmière praticienne a conduit les soins dans une tel clinique, qui met en œuvre la planification de l'accès avancé, a le potentiel d'améliorer l'accès opportun aux soins et d'améliorer les résultats de la santé. L'objet de cette étude était de déterminer l'expérience des patients dans une seule clinique dirigée par l'infirmière praticienne ainsi que leurs comportements en matière de santé liés à la planification de l'accès avancé.

Un sondage précédemment élaboré portant sur des questions liées à l'accès aux rendez-vous, aux comportements liés à la santé et à la satisfaction a été envoyé par la poste aux patients d'une clinique du nord de l'Ontario. 535 des patients ont répondu pour un taux de réponse de 29%.

Une majorité (85.4%) ont pu accéder à des rendez-vous le même jour. L'accès aux rendez-vous le même jour a été associé à une probabilité moins élevée de se rendre à une clinique sans rendez-vous ou à un service d'urgence en plus des rapports d'amélioration du mode de vie et d'un meilleur contrôle de l'état de santé.

La planification avancée de l'accès contribue à la prise en charge optimale des patients dans un contexte des cliniques dirigées par l'infirmière praticienne. Le rôle de l'IP dans les conseils de mode de vie et les soins holistiques dans le modèle de ces cliniques contribue à l'amélioration de la santé autodéclarée. L'accès à un rendez-vous au point de « préparation » peut contribuer positivement aux changements de mode de vie et à la santé générale des patients.

Mots clés: Clinique des infirmières praticiennes, accès avancé, promotion de la santé, satisfaction des patients

Background

The Nurse Practitioner-Led Clinic Model

Nurse Practitioner -Led Clinics (NPLCs) are an innovative model of primary healthcare that features nurse practitioners as the primary care providers working with an interprofessional team. The NPLCs were established in order to deliver comprehensive healthcare to underserved populations (Virani, 2012). Although versions of this model of primary healthcare have been in existence in Canada for years, the NPLCs represent the first time that a healthcare provider group other than physicians has received comprehensive funding to develop and manage a primary healthcare organization (Heale, 2012). The pilot location, Sudbury District Nurse Practitioner Led Clinics opened in Sudbury, Ontario in 2007. Within a year the provincial Premier announced the opening of twenty-five additional clinics based on the structure of the first project (Virani, 2012).

This NPLC model is unique internationally. A review of literature did not reveal evidence of nurse practitioner led clinics that are developed, governed and managed by nurse practitioners where the NP works within a team approach, but is the primary care provider at the clinic site. Although there are numerous nurse and nurse practitioner-led clinics in a variety of countries across the globe, they tend to offer specialized care and not comprehensive primary healthcare (Shiu et al. 2011; Murfet et al. 2013; Bentley et al. 2014). In addition, health system funding in some countries, specifically the US and in some respects the UK, is not congruent with the NPLC model implemented in Canada (Auerbach et al. 2013; Hoare et al. 2011). The unique nature of the NPLC model in Canada points to the importance of evaluation of the impact of the model on the delivery of patient care. To this end, the authors set out to survey patients at one NPLC to learn more about how the processes within the NPLC impacted their health care behaviours.

Study Community

The Capreol Nurse Practitioner-Led Clinic (NPLC) opened in October, 2011. Capreol is a town of 3600 people located a forty minute drive from the larger centre of Sudbury, in northeastern Ontario (Capreolonline, 2016). Prior to the development of the NPLC, there was no primary healthcare organization in the town. As with the other NPLCs, this clinic was developed to meet the needs of an underserved population. Patients who register with NPLC are assigned to a nurse practitioner who is their primary care provider, but who also works with an interprofessional team (Virani 2012). The Capreol NPLC team includes nurse practitioners, a social worker, registered nurses, a registered practical nurse, a dietician and two part time physicians.

In the NPLC model, the NP provides all healthcare services within his/her scope of practice and involves other interprofessional team members as required (Heale, 2012). NPs provide care that historically resided within the scope of practice of family physicians including diagnosing conditions and prescribing medications. However, NPs have a background in nursing and the result is that appointments with an NP typically include diagnostic investigations and prescriptions as well as patient education and wellness counseling (Dicenso & Bryant Lukosious. 2010). Since only the nurse practitioner clinic director had experience working in an NPLC, the development of operations in the Capreol NPLC included extensive orientation to the model of care

including the NP role, Advanced Access scheduling and working relationships among the team members.

Access to Primary Healthcare

In addition to development of NPLC interprofessional teams, consideration was given to patient access to appointments within the organization. Access to primary healthcare is a key concern in Canada (Health Council of Canada, 2014). In a review of 11 developed countries, Canada has the worst rate of patient access to same day, or next day appointments with their primary healthcare provider. Nearly half (47%) of Canadians, the highest rate in the countries surveyed, indicated that they had recently gone to an Emergency Department for care that their primary healthcare provider could have addressed if she/he had been available (Health Council of Canada, 2014). Given that up to 90% of adults have more than one chronic condition, the ability of patients to access primary healthcare services to address exacerbations, to monitor conditions and counsel about prevention of additional chronic conditions or worsening of current conditions is essential to better patient health outcomes (Marengoni et al., 2011).

One potential solution to addressing the issue of accessibility to healthcare services is Advanced Access. Murray and Tantau (1999), in their seminal work, described Advanced Access as a system designed to simplify scheduling while ensuring an adequate supply of appointments are available – an ongoing balance of appointment supply and demand. The goal of this system is to allow patients the ability to secure a booking same day, or next day if they choose, regardless of what they need (Murray, 2005). Unlike other structured scheduling approaches, Advanced Access does not leave administrative staff to decide who will be granted an appointment. The “today” appointments are available to any patient, even if they are seeking service for something non urgent like filling a prescription that has not yet run out or having an Pap smear (Fournier, Heale & Rietze., 2012).

Research shows that the Advanced Access model increases patient and provider satisfaction (Hudec, MacDougall & Rankin, 2010). Since patients are seen earlier in the course of their illness, exacerbations and complications may be avoided and patients are less likely to visit urgent care centres or emergency departments (Hudec et al., 2010).

The importance of increased access to primary health care services has not gone unnoticed. Health Quality Ontario, a provincially mandated organization with the objectives of improving quality and efficiency in healthcare, has provided extensive training and support to practices willing to adopt Advanced Access as an approach to practice management (Health Quality Ontario, 2012). The interest of government in Advanced Access further supports the need to evaluate the effectiveness of the scheduling model with respect to patient care choices and outcomes. With these benefits in mind, the staff members of the Capreol NPLC were given training in the Advanced Access model before the clinic opened its doors to patients.

Aims

The primary aim of this research was to determine the experience of patients in a Nurse Practitioner-Led Clinic as well as healthcare behaviours related to NP care and Advanced Access scheduling. Evaluation of healthcare services offers information about

the effectiveness of program delivery. In primary healthcare, “patients’ views and experiences are an important source of information about the quality of healthcare, one that a wide range of organizations... are increasingly using to monitor and improve their performance” (Health Council of Canada, 2014, p 49). In the third year of clinic operations, an evaluation of Capreol NPLC clinic services was conducted, in part to determine the level of patients’ access to service as well as the impact of the clinic scheduling system on patient’s choice to attend walk-in clinics and the emergency department. An additional important feature of the evaluation of the Capreol NPLC was to determine the extent to which NP wellness counseling had influenced positive health behaviours in the patients. Finally, satisfaction with services was determined.

Methods

Sample

A survey related to healthcare services at the Capreol NPLC was sent via mail in June 2013. A convenience sample of 1858 patients over the age of 18 years who had been patients of the clinic for over one year were sent the survey.

Data Collection

Each mail out package included a cover letter in English and French as well as a copy of the survey and a stamped return envelope addressed to the university office of one of the researchers. No participant identifiers were included in the survey. No reminder was sent.

Ethics

The study was approved by the Capreol Nurse Practitioner-Led Clinic’s Board of Directors as well as Laurentian University’s Research Ethics Board, certificate 2013-03-03.

Survey Instrument

The survey tool was developed for use at a separate Nurse Practitioner-Led Clinic (Heale & Pilon, 2012). The items were vetted by nurse practitioners working in a variety of settings. There were three questions about patients’ ability to secure same day or next day appointments, if needed, two questions related to seeking care at external agencies (e.g. ER, walk-in clinics) and four questions about impact of clinic care on patient’s medical condition(s). The survey also explored the patient experience including lifestyle change related to health teaching received at the clinic and finally, a measure of overall satisfaction was taken using a five-point Likert scale. Participants were asked to reflect on their experience with the NPLC in the six months prior to receiving the survey.

Analysis

Data were analyzed using SPSS Mac version 20. Descriptive statistics were generated to provide a snapshot of the sample of participants. This included age, sex, length of time registered at the NPLC, and then a breakdown of responses to selected survey questions. Chi Square and Mann Whitney U tests were used to determine if there were any significant associations between accessibility of appointments and satisfaction with clinic, use of walk-in-clinics and emergency department use. Significant

associations were also explored between accessibility of appointments, lifestyle changes and self-reported improvements in medical care.

Results

In total, 526 surveys were returned for a response rate of 28%. The majority of survey respondents were seventy years of age or older and 80.5% were over the age of fifty. The majority of respondents (56.4%) were female. Most respondents (65.8%) had been patients at the clinic for more than one year. The demographics of the survey respondents matched the clinic demographics whereby the average age of patients is 70.

The responses to the survey items are listed in Tables 1 and 2. Participants responded yes or no, where applicable. Participants were able to answer n/a (not applicable) in the cases where they had not requested or attended an appointment in the six months prior to the survey.

Table 1: Responses to Questions about Access and Control of Medical Conditions

	Yes	No	n/a	Missing Responses
Total n =535 Percentages based on responses to yes/no and do not include n/a or missing responses.				
I have been able to see a nurse practitioner for a same day appointment, if needed.	334 (85.4%)	57 (14.6%)	136	8
Since joining the clinic, I have never had to wait longer than 15 minutes past my scheduled appointment time to see a healthcare provider.	368 (71%)	150 (29%)	5	12
Since joining the clinic, I have been to a walk-in clinic for a health issue for me, or for a child in my family.	129 (24.7%)	393 (75.3%)	—	13
Since joining the clinic, I have been to a hospital emergency department for a health issue for me, or for a child in my family.	105 (19.8%)	425 (80.2%)	—	5
I have received counselling from a member of the healthcare team about a lifestyle issue (e.g., food choices, exercise, smoking cessation, etc.).	213 (53.5%)	185 (46.5%)	127	10
I have made improvements to my lifestyle as a result of the counselling received by the clinic staff (e.g., started exercising, decreased or stopped smoking, etc.).	173 (60.1%)	115 (39.9%)	233	14
Since joining the clinic, my medical condition(s) is under better control.	267 (89.3%)	32 (10.7%)	222	14

Table 2. Patient Satisfaction with Clinic Services

Very unsatisfied	Unsatisfied	Neither unsatisfied, nor satisfied	Satisfied	Very satisfied	Missing Responses
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51 (9.7%)	8 (1.5%)	17 (3.2%)	143 (27.1%)	308 (58.3%)	n=7
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Overall 85.4% participants indicated that they were satisfied or very satisfied with their experience at the NPLC. Further evaluation of satisfaction through Independent samples Mann -Whitney U tests determined that there was no significant difference in level of satisfaction (grouped as very unsatisfied; unsatisfied; and satisfied, very satisfied) and age $p=0.211$; gender $p=0.610$; length of time registered at the clinic $p=0.271$.

The majority of participants (85.4%) were able to access a same day appointment and only 24.7% attended a walk in clinic and 19.8% attended the emergency department during the survey period. Chi square analysis demonstrated a significant association between access to same day appointments and marking 'no' to attending walk-in-clinic ($p=0.001$) and emergency department ($p=0.001$) visits. Access to same day appointments was also significantly associated with higher satisfaction (grouped as very unsatisfied; unsatisfied; and satisfied, very satisfied) with clinic services ($U=6.840$, $z=-3.743$; $p=0.001$).

A longer length of time a patient was registered at the clinic was associated with less use of walk in clinic ($r_s=-0.120$, $p=0.001$) or emergency department ($r_s=-0.123$, $p=0.005$) visits. However, there was a no significant association with being satisfied, or very satisfied with clinic services and choosing 'no' to walk-in clinic ($p=0.924$) or emergency department ($p=0.564$) visits.

There were also significant associations between same day appointments and those who indicated that they had made improvements in their lifestyle ($p=0.002$) (eg. smoking cessation, increased exercise, improved diets) and those indicating that their medical condition(s) was under better control ($p=0.001$). In addition, those who marked that they were able to receive same day appointments when they wanted to have them were significantly more satisfied with clinic services ($p=0.001$). Higher levels of satisfaction with clinic services were also significantly associated with those who indicated that they had made lifestyle changes related to health counselling at the NPLC ($p=0.004$) and those who indicated that they a medical condition was under better control ($p=0.001$).

Discussion

The most noteworthy finding in this study is that 85.4% of the patients were able to schedule a 'same day' appointment with their NP, if needed. The success of the scheduling model in this NPLC is in contrast with the provincial average. "In Ontario, only 44.3% of adults in 2014 report that they are able to see their primary care provider on the same day or next day if they are sick" (Health Quality Ontario, 2015, p 41). Timely access to one's primary care provider is an essential element of effective primary healthcare. Lack of access to primary healthcare drives patients to alternatives, such as walk-in-clinics and the emergency departments, where their medical history isn't available and which contributes to the financial and human resource costs of non-urgent care provision within urgent care facilities.

In fact, these findings confirm the relationship between same day or next day access to one's primary healthcare provider and a reduction in the use of emergency department and walk in clinics for care (Hudec et al., 2010), suggesting the value of

Advanced Access scheduling in this NPLC in reducing emergency department visits. A reduction in unnecessary emergency department visits saves time and inconvenience to the patient and decreases costs to the healthcare system. Patient self-reports of satisfaction and the significant association between satisfaction and appointment access also confirm the findings of earlier work (Hudec et al. 2010). Being able to book a timely appointment at the NPLC can prevent the destabilization of both chronic and acute conditions, decrease emergency department visits and reduce hospitalizations. (Hudec et al. 2010).

In many practices with traditional scheduling, patients have not been able to get a same day, or next day appointment when required (Murray & Tantau, 1999). Often attending a walk-in clinic or emergency department was the only way to address their non-urgent health care needs. As patients at the NPLC become more accustomed to the Advanced Access scheduling and timely access to same day appointments, they may realize that they can obtain care quickly at the NPLC and be less inclined to seek care elsewhere. This will result in improved continuity of care and less cost to the healthcare system overall.

The study also identified that patients have made lifestyle changes such as reduced smoking and increased physical activity, related to health counselling they received from their primary nurse practitioner and the interprofessional team at the NPLC. The same finding was identified from the satisfaction survey completed by patients at the Sudbury and District Nurse Practitioner Led Clinics (Heale & Pilon, 2012). This supports the value of the nurse practitioner as the primary care provider and the success of the interprofessional team approach. In addition, the effect may be enhanced when patients are able to seek services on a day when they feel ready to discuss their health and lifestyle behaviours. In other words, having clinical services available “as desired” could allow for greater impact on healthy lifestyles among NPLC patients.

The self-report of better control of a medical condition as a result of the Advanced Access system is encouraging. While there is a good volume of evidence to support the other positive system impacts, control of medical conditions in the context of Advanced Access has been explored less often. Results of a study by Gladstone et al. (2011) identified more episodic visits and less dedicated chronic disease management visits among diabetic patients in an Advanced Access system. Despite these changes there was no significant difference in blood pressure and hemoglobin A1C readings in a diabetic patient population (Gladstone et al. 2011).

Limitations

There are several limitations to this survey. Surveys of this type are only snapshots of a moment in time. Subjective opinion of improved management of health issues was not verified through lab work or clinical assessments. The response rate was only 28%, so that the responses may not be an accurate reflection of the experiences of patients at the clinic. A better response rate may have been achieved if a reminder card had been mailed or if patients were asked to reflect on their total care at the clinic and not just the previous six months. All patients over the age of 18 at the clinic for more than one year were sent the survey. The average age of survey participants is over the age of fifty. This average corresponds to the clinic demographics, however, participants were asked to respond to their experience at the clinic in the previous six months. Since older

participants are more likely to have conditions that require more frequent clinic appointments, there may be a disproportionate number of older participants with medical conditions in the study. In addition, more than one person in a household may have received the survey and the author's postulate that the low response rate may have arisen from only one member of the household completing the survey. One strategy to overcome this situation is to develop a system whereby patients are invited to complete the survey at the clinic either before, or after their appointments.

Conclusions

This study suggests that the model of patient care and decisions about operations, such as scheduling processes, have an impact on patient care choices and health behaviours. While implementation of the Advanced Access scheduling system at this location required a significant investment in training, leading and monitoring by the NP Clinic Director at the outset, the improvements achieved were well worth the time.

As in other studies, the Advanced Access scheduling model at the Capreol NPLC allowed patients to receive the care they needed when they requested it, which has the potential to improve chronic disease management and prevent exacerbations (Hudec et al. 2010). The consequence of this, along with the decrease in inappropriate use of emergency department and walk-in clinic visits could result in healthcare system savings.

Despite the limitations the study highlights the potential impact of model of care and patient care choices. Going forward it would be important to implement research to confirm the associations found in this study and to further explore the relationships. Future research could focus on the health impact of the NP/patient therapeutic relationship and the interprofessional team. In addition, an exploration of the impact of access to primary healthcare and patient readiness to make lifestyle changes would add to what is known about patient health outcomes in the NPLC practice setting. Finally, there are additional unique features of the NPLC model, such as partnerships with diabetes management clinics, that should undergo evaluation to determine the effect on patient health outcomes.

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