

# The nurse pivot-navigator associated with more positive cancer care experiences and higher patient satisfaction

by Carmen G. Loiselle, Samar Attieh, Erin Cook, Lucie Tardif, Manon Allard, Caroline Rousseau, Doneal Thomas, Paramita Saha-Chaudhuri, and Denis Talbot

## ABSTRACT

**Background and objectives:** Growing evidence indicates that the nurse navigator-pivot (NN)\*, is key to optimizing care processes and outcomes. However, large scale studies are needed to examine how patients exposed to NNs (as opposed to non-NN) differentially perceived their cancer care experiences.

**Method:** Participants (N = 2,858) treated for cancer in the last six months at university-affiliated cancer centres in Montréal, Québec, completed the Ambulatory Oncology Patient Satisfaction Survey (AOPSS).

**Results:** Cancer care experiences and satisfaction were significantly higher in the NN group (n = 2,003) for all six care domains (Ds from 3.32 to 8.95) and all four nursing functions (Ds from 5.64 to 10.39) when compared to the non-NN group (n = 855).

**Discussion:** The NN role is significantly related to enhanced cancer care experiences and higher patient satisfaction. Future research

should explore potential causal effects between NNs and care processes, as well as patient outcomes.

\*NN includes both terms: nurse navigator and nurse pivot

**Key words:** cancer, oncology, nurse navigator, nurse pivot, patient satisfaction, patient cancer care experiences

## INTRODUCTION

A diagnosis of cancer and its treatment can be an overwhelming, life-changing experience that brings a host of emotions including fear, uncertainty, and distress, as well as an array of physical and social challenges (Canadian Cancer Society, 2018; Fenn et al., 2014; Meecker et al., 2016; Canadian Partnership Against Cancer, 2018). Individuals with cancer often report various unmet needs (Canadian Partnership Against Cancer [CPAC], 2018) and in response to these needs and challenges, person-centred care (PCC) is now part of routine clinical practice (Institute of Medicine [US] Committee on Approaching Death, 2015; Moody et al., 2018; CPAC, 2010; Robinson et al., 2008). PCC, defined as respectful, responsive and tailored approaches that meet patients' needs and preferences, provides benefits such as improvement in the quality of patient care and higher patient satisfaction (Finney-Rutten et al., 2012; Kullberg et al., 2017; Loiselle et al., 2019; Westphal, 2016).

To adequately fulfil PCC's goals, a key member of the multidisciplinary team is the nurse navigator (NN), also called nurse pivot in Québec (Koh et al., 2011; Yatim et al., 2017; Zibrik et al., 2016). NNs are now considered essential members of the oncology multidisciplinary team and their role includes four main functions: assessing patient needs, providing education and information, supporting patients and family members, and coordinating care (Lévesque-Boudreau & Champagne, 2008). Often, NNs readily connect patients to support services, help them overcome potential healthcare system barriers to access, as well as provide timely health education and support (Yatim et al., 2017; Zibrik et al., 2016; Cook et al., 2013; Shockney, 2015). Moreover, NNs often act as liaison agents with cancer care team members. As such, stakeholders in cancer care around the world acknowledge the key role that NNs play in optimizing PCC and health-related outcomes (Fillion et al., 2009; Lee et al., 2011; Tariman & Szubski, 2015; McMullen, 2013). Despite the importance of the NN within the care team (Tho & Ang, 2016; Case, 2011), more evidence is needed from the perspective of care recipients. Herein, with a survey design, we sought to document potential significant

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relationships between NN assignment and patient cancer care experiences and satisfaction.

More specifically, the main goals of this study were to:

1. Report on participants' cancer care experiences and satisfaction according to their perceptions of being assigned a NN (or not).
2. Compare NN/non-NN groups across the AOPSS's six cancer care domains: (1) emotional support, (2) coordination and continuity of care, (3) respect for patient preferences, (4) physical comfort, (5) information, communication and education, and (6) access to care; as well as four main nursing functions (i.e., assessment, education, support and coordination, as per Lévesque-Boudreau & Champagne, 2008) that we established by clustering relevant AOPSS items.

## MATERIALS AND METHODS

### Sample

The sample consisted of all patients with diverse cancer diagnoses who had been treated for cancer within the last six months. Out of 7,885 surveys mailed to eligible patients, 3,278 completed surveys were returned. Of these, 2,858 answered the NN assignment item (2,003 reported being assigned a NN and 855 did not). More specifically, inclusion criteria were being aged 18 years or older, having a confirmed cancer diagnosis and being treated (e.g., surgery, chemotherapy, and/or radiotherapy) as an outpatient in the participating cancer centres.

### Setting

Three university-affiliated hospitals with integrated cancer centres in Montreal, Québec, took part in the study: (1) the Segal Cancer Centre at the Jewish General Hospital, (2) the Cedars Cancer Centre at the McGill University Health Centre, and (3) the Cancer Centre at St. Mary's Hospital. The Rossy Cancer Network (<https://www.mcgill.ca/rcr-rcn>) worked closely with Ambulatory Oncology Patient Satisfaction Survey (AOPSS) license holders (NRC Picker) to facilitate survey administration including distribution and compilation of responses.

### Design

A self-report survey was used to examine relationships between participants' perceptions of being assigned a NN (or not) and cancer care experiences and patient satisfaction with care.

### Procedures

As part of an ongoing quality improvement initiative, an institutional quality council, comprised of representatives from each of the cancer centres, provided oversight of the quality improvement study. Potential participants were randomly selected using hospital mailing lists that filtered out patient records that did not meet inclusion criteria. Every three months, a new wave of surveys was mailed to eligible participants. The survey package included a cover letter, the AOPSS with five additional items and a pre-paid postage return

envelope. Participants were told that a mailed back completed survey (sent to NRC Picker) indicated voluntary consent to take part in the study. A follow-up letter and survey were sent again, approximately four weeks later, if no prior completed survey was received. Consistent with Québec's privacy laws, no personally identifiable information was collected.

### Measures

The Ambulatory Oncology Patient Satisfaction Survey (AOPSS) is a standardized self-report measure used in health-care facilities across North America and elsewhere (National Research Corporation, 2003; Ferguson, 2012). The 83-item survey includes questions pertaining to patient experience and satisfaction with 45 core questions mapped to six care domains: (1) emotional support, (2) coordination and continuity of care, (3) respect for patient preferences, (4) physical comfort, (5) information, communication, and education, and (6) access to care. Five additional items were added, including two pertaining to the NN:

1. When you were diagnosed with cancer, was a specific nurse assigned to you to follow you over time? i.e., a pivot nurse or a primary nurse? (Yes, No, or I don't know).
2. If yes, how useful was this nurse? Please circle the most appropriate number on this scale, from 1 (Not at all useful) to 7 (Extremely useful).

### Statistical Analysis

All analyses were performed using SAS, Version 9.4 for Windows (SAS Institute Inc., 2013). AOPSS items were grouped according to each of the validated six care domains (Cronbach's alphas ranged from 0.79 to 0.93) (National Research Corporation, 2003), including access to care (seven items), coordination (eight items), physical comfort (five items), emotional support (eight items), information (10 items), and respect for patients' preferences (six items). We also grouped particular AOPSS items according to four previously established key nursing functions: patient assessment (five items), education (28 items), support (11 items), and coordination (six items). Participants' satisfaction was assessed by comparing NN versus non-NN ratings across the six care domains and four NN functions using a two-step analytic procedure. First, the percentage of positive ratings to questions constituting each care domain and each NN function were calculated for each participant by adapting the NRC Picker methodology, where only the most positive answers contribute to the calculation: "Yes, completely" for an item with three choices (Yes completely, Yes somewhat, and No) or "Always" for an item with four potential responses (Never, Sometimes, Usually, and Always; Sizmur, 2012). Then, the aggregated ratings for care domains and NN functions were computed as averages for those percentages. Statistical adjustment for multiple tests was performed by using the Bonferroni correction method. Results were statistically significant if the confidence interval (CI) did not include the null hypothesis value (Joseph & Reinhold, 2005). Results were reported as mean group difference (*D*) with 99% CI.

## RESULTS

### Descriptive Statistics for NN and Non-NN Groups

Of the 7,885 study packages mailed to potential participants, 3,278 returned completed surveys (representing a 41% response rate). More than half of participants were female (59%) and half were aged 65 or older (51%). Nearly a third of participants reported having breast cancer (29%). Of the 2,858 participants who completed the NN assignment item, 2,003 (70%) reported being assigned a dedicated nurse or NN and 855 (30%) reported that they did not.

Table 1 shows participant sociodemographic characteristics according to NN and non-NN groups. Of note, participants with head and neck cancers were more likely to report being assigned a NN (87%) with the lowest percentage noted for prostate/testicular cancers (58%).

### Results Pertaining to the Six Cancer Care Domains

Complete data were available for 45% to 99% of all care domains. This was consistent across NN and non-NN groups.

Compared to the non-NN group, participants with a perceived NN assignment gave higher positive ratings on all six care domains (Figure 1). The mean differences of the aggregated positive ratings between NN and Non-NN showed that emotional support had the highest difference ( $D = 8.95$ ; 99% CI [7.19, 10.71]), followed by information, education, and communication ( $D = 6.60$ ; 99% CI [5.37, 7.83]), physical comfort ( $D = 6.56$ ; 99% CI [5.98, 7.14]), respect for patient ( $D = 4.70$ ; 99% CI [2.69, 6.71]), and coordination ( $D = 4.02$ ; 99% CI [2.37, 5.67]). The lowest difference was for access to care ( $D = 3.32$ ; 99% CI [1.07, 5.57]). For both groups, respect for patients' preferences had the highest ratings, whereas emotional support had the lowest ratings (Figure 1). Across all six care domains, positive ratings were, on average, 6% higher in the NN group.

### Results Pertaining to the Four Nursing Functions

Forty to 99% of complete data were available for calculating ratings across nursing functions. The NN group reported significantly higher ratings for all four nursing functions when compared to the non-NN group (Figure 2). The

	<b>Total N = 2858</b>	<b>%</b>	<b>Non-NN n = 855</b>	<b>%</b>	<b>NN n = 2003</b>	<b>%</b>
Sex						
Male	1096	38.4	337	39.4	759	37.9
Female	1712	59.9	505	59.1	1207	60.3
Missing	50	1.7	13	1.5	37	1.8
Age						
18–44 years	164	5.7	45	5.3	119	5.9
45–54 years	429	15.0	106	12.4	323	16.1
55–64 years	775	27.1	199	23.3	576	28.8
65–74 years	868	30.4	266	31.1	602	30.1
75+ years	588	20.6	234	27.4	354	17.7
Missing	34	1.2	5	0.6	29	1.4
Cancer Diagnosis						
Breast	839	29.4	267	31.2	572	28.6
Hematology/Lymphoma	397	13.9	112	13.1	285	14.2
Melanoma/Sarcoma/Stomach/Brain	354	12.4	104	12.2	250	12.5
Colorectal/Bowel	345	12.1	72	8.4	273	13.6
Lung	252	8.8	64	7.5	188	9.4
Cervix/Uterine/Ovarian	186	6.5	34	4.0	152	7.6
Prostate/testicular	165	5.8	96	11.2	69	3.4
Head/Neck	77	2.7	10	1.2	67	3.3
Kidney/bladder	87	3.0	51	6.0	36	1.8
Missing	156	5.4	45	5.3	111	5.5

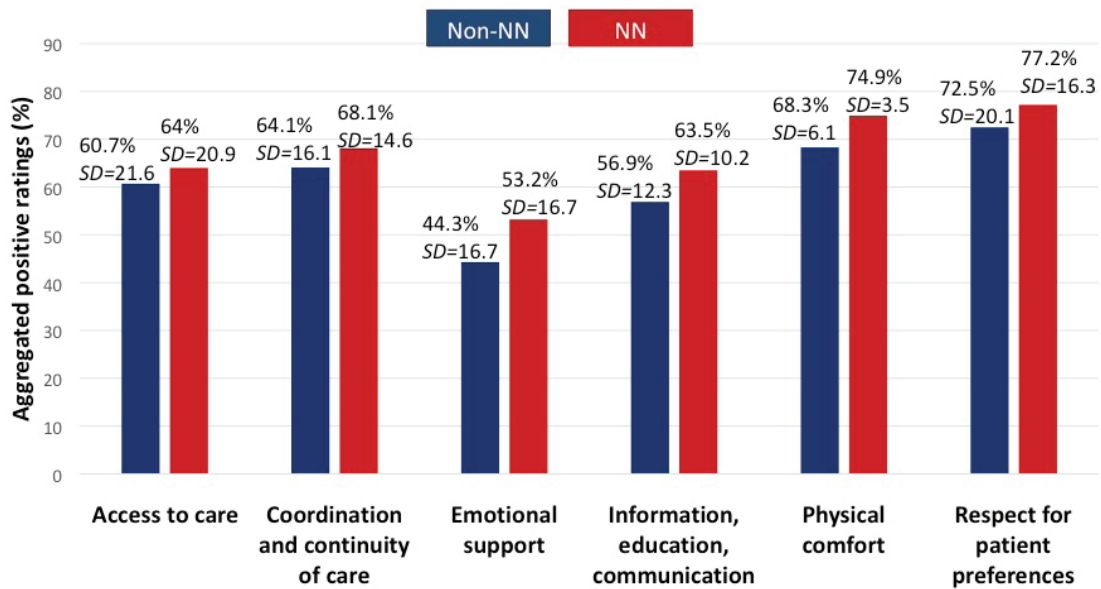


Figure 1. Percentages of positive ratings for the six domains of care according to non-NN ( $n = 855$ ) and NN ( $n = 2,003$ ) groups

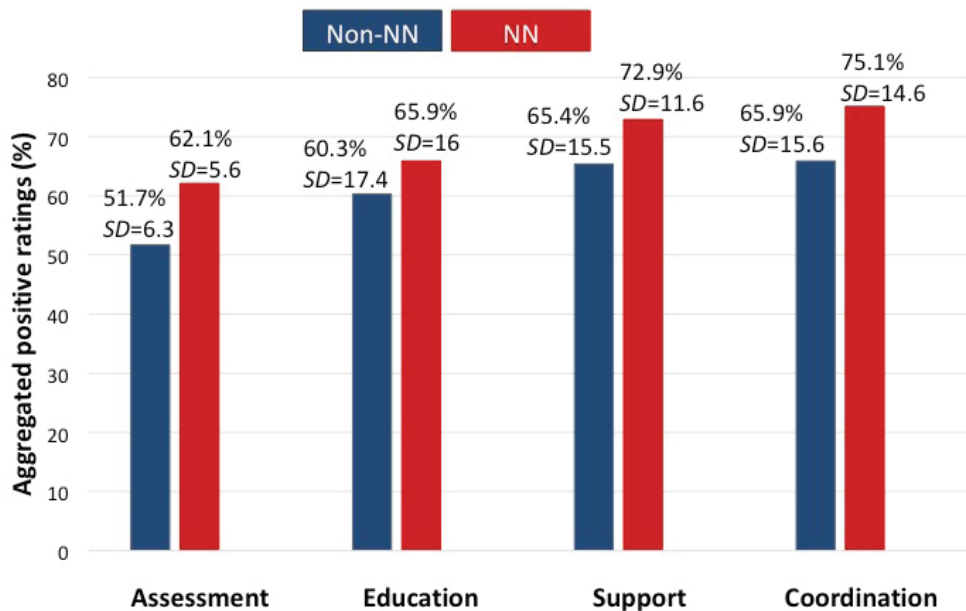


Figure 2. Percentages of positive ratings for the four nursing functions according to non-NN ( $n = 855$ ) and NN ( $n = 2,003$ ) groups

highest differences were for assessment ( $D = 10.39$ ; 99% CI [9.78, 11.00]), followed by coordination ( $D = 9.23$ ; 99% CI [7.62, 10.84]), support ( $D = 7.58$ , 99% CI [6.06, 9.10]), and education ( $D = 5.64$ , 99% CI [3.85, 7.43]). In the NN group, 83.5% reported the NN role to be “very” to “extremely useful.” For both groups, coordination had the highest ratings and assessment had the lowest ratings (Figure 2). Across all nursing domains, positive ratings were on average 8% higher for the NN group compared to the non-NN group.

## DISCUSSION

The goal of the present study was to document how perceived presence of NNs relates to cancer care experiences and patient satisfaction with care in three university-affiliated cancer centres. Participants in the NN group (compared to non-NN) were significantly more satisfied with all care domains and nursing functions. Whereas one other study reported higher patient satisfaction for cancer care domains when a nurse pivot/navigator



is assigned (Dubé-Linteau, 2014), we contributed further by using confidence intervals and identifying key nursing functions and how these vary according to groups. We consistently found significantly higher ratings in the NN group. The largest differences between groups were in the emotional support domain with the NN group reporting higher satisfaction also corroborated by a Québec-wide survey (Dubé-Linteau, 2014). Emotional support includes being told of the cancer diagnosis in a sensitive manner, put in touch with other care providers who could help with anxieties and fears, receiving enough information on possible changes in emotions, sexual activities and relationship with their spouse or partner, and if care providers went out of their way to help patients feel better. Others have documented that emotional support remains the most frequent unmet need (Wang et al., 2018; Deshields et al., 2012), despite being considered an essential component of PCC (Wang et al., 2018). The NN seems particularly relevant in this area, as it readily addresses patients' concerns while encouraging them to openly express emotions (Hébert & Fillion, 2011). A randomized controlled trial in the U.S. also demonstrated the positive influence of NNs and how patients felt more supported emotionally when compared to the usual care group (Wagner et al., 2014). Likewise, an improvement project aimed at evaluating the effectiveness of a breast cancer nurse navigator program reported that 98% of participants ( $n = 136$ ) felt emotionally supported by the NN (Trevillion et al., 2015). Moreover, in our study, NNs were reported to be highly valuable with 83.5% of participants rating them "very" to "extremely useful". This finding is in line with a previous study whereby 98% of participants valued the continuous guidance of a designated oncology nurse navigator (Hryniuk et al., 2014).

Among the four NN functions, patient assessment showed the lowest ratings, which might be explained by the complexity of assessment/evaluation activities in cancer care (Hébert & Fillion, 2011; Hryniuk et al., 2014; Fournier et al., 2015). In response to existing gaps in assessment (e.g., oncology referrals, delays in treatment), a pilot study by Zibrik et al. (2016) tested the benefit of the NN integration into the triage process for patients with cancer and found that early NN care involvement improved timely patient assessment, resource utilization and optimal treatment delivery.

## CONCLUSIONS

The present findings provide much-needed large-scale evidence that the NN role is significantly related to more positive cancer experiences and higher patient satisfaction with care. Future studies should rely on more robust designs to systematically document potential causal effects between NNs and care processes, as well as patient outcomes.

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## Study Limitations

Because of its correlational nature, findings must be interpreted with caution. Also, the study groups (being assigned a NN or not) relied on participants' self-report rather than objective documentation. Participants were asked to rate the quality of events that took place within the last six months, therefore potentially introducing recall bias.

## Clinical Implications

To our knowledge, in addition to using more rigorous strategy to establish statistical importance through confidence intervals, this is the first study to compare patient satisfaction according to evidence-based nursing functions.

Various stakeholders in healthcare are increasingly committed to documenting whether specific professional roles and interventions make a significant difference clinically (i.e., above and beyond statistical significance) (Fethney, 2010; Griffiths et al., 2019). Herein, we provide further support for the clinical importance of NNs. If corroborated by future studies, these findings should serve to inform decisions about human resource allocation in cancer care.

## AUTHOR CONTRIBUTIONS

**Conception and design:** Carmen G. Loiselle, Samar Attieh, Caroline Rousseau

**Data analysis:** Doneal Thomas, Samar Attieh, Carmen G. Loiselle

**Data analysis revisions and suggestions:** Paramita Saha-Chaudhuri, Denis Talbot, Doneal Thomas, Samar Attieh, Carmen G. Loiselle

**Manuscript writing:** Carmen G. Loiselle and Samar Attieh

**Final approval of manuscript:** All authors

**Accountable for all aspects of the work:** All authors

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## CONFLICT OF INTEREST

No conflict of interest to declare.

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