Patient satisfaction with Nurse Practitioner care in primary care settings

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ABSTRACT

Objective
To determine the level of satisfaction with care and acceptance of the role of Nurse Practitioner in New Zealand.

Design
A descriptive correlational study was conducted using a 15 item satisfaction survey distributed to participants by the clinic receptionist after a clinic visit to the NP. Demographic data, reason for visit and waiting times were also collected.

Setting
Two clinical sites in the same medium sized city were used for data collection. The first site was a university campus health clinic and the second a primary health care clinic in an industrial area.

Subjects
Convenience sample of the first 100 patients to complete and return the self-administered survey from each practice site were to be included in the study. In fact 193 useable surveys were included.

Outcome measures
Patient satisfaction and acceptance was measured using modified 15 item version of the Thrasher and Purc-Stephenson (2008) satisfaction survey.

Results
Patients were satisfied with the care they received and had accepted the role. Mean satisfaction score was 15.59; SD 4.71, range 12-25. The lower the score the more satisfied the patient. Satisfaction was significantly correlated by only two variables, age (r=.221, p=.003) and role clarity (r=.355, p=.000).

Conclusions
While this study contained limitations, the overall positive findings are similar to previous study findings on patient satisfaction with Nurse Practitioners care. The instrument, methodology, and findings of this study can be used as initial data on the evaluation and continued monitoring of the role in New Zealand (NZ).

INTRODUCTION

New Zealand like many western countries is currently experiencing a critical health care workforce shortage. Over ten years ago the role of the Nurse Practitioner (NP) was identified and supported by the New Zealand Ministry of Health (Ministerial Taskforce on Nursing 1998) as one approach to relieving this shortage and providing a career ladder to expert clinical nurses. Seven years ago the Nursing Council of New Zealand began to register individuals as Nurse Practitioners (NP). Today there are approximately 70 recognised NPs in New Zealand, a country of over four million people (NPNZ listserve April 2010). To date little research has been published in New Zealand on the outcomes these providers are achieving. However data have been presented at symposiums and conferences addressing NP experiences and outcomes in a variety of settings (Boyd 2009; Gilmer 2009; Langer 2009). This article presents data on patient satisfaction and acceptance of the NP role in a sample of patients in NZ.

Literature Review

Nurse Practitioners in outside of NZ have been shown to positively impact the quality and quantity of life experienced by the individuals, families, and communities they serve (Brown and Grimes 1995; Cooper et al 2000; Shumm et al 2000; Cooper et al 2002; Larkin 2003). NPs have also been shown to practice in a cost effective manner (Jenkins and Torrisi 1995; Spitzer 1997; Hunter et al 1999; Paez and Allen 2006; Bauer 2010). In addition NP care has been associated with increased patient satisfaction over other models of care delivery (Brown and Grimes 1995; Byrne, Richardson, Brunsdon, & Patel (2000)); Brooten et al 2002 .

Researchers addressing the implementation and evaluation of the NP role advocate for initial studies to address outcomes related to safety and efficacy, acceptance and satisfaction, costs and role transfer (Mitchell-DiCenso et al 1996; Bryant-Lukosius, & Dicenso, (2004). Unpublished works in New Zealand by Boyd (2009) speak to the safety, efficacy and financial impact of the NP role in gerontology practice, while Langer's (2009) work addressed safety and role transfer in a mental health setting and Gilmer's (2009) work looked at acceptance of the role in a primary care setting. No data have yet been published on acceptance and satisfaction of the NP role in New Zealand.

As stated above, satisfaction is one of the key outcomes associated with the introduction of a new role in health care delivery. Some researchers have linked satisfaction with outcomes of improved health status (Lashinger et al 2003), decreased use of healthcare resources (Thompson et al 1996), and increased adherence to plans of care (Moore et al 2002).

Measuring outcomes requires the use of validated instruments to accurately capture the concepts under study. Measuring satisfaction can be difficult as many factors may influence a patient's satisfaction with care on any given day. Thrasher and Purc-Stephenson (2008) developed and tested an instrument to measure satisfaction with NP care provided in an emergency department in Canada. This instrument, adapted and used in this study, is discussed further in the sections to follow.

METHODS

This descriptive study presents initial data on two outcomes of NP practice, satisfaction and acceptance. Satisfaction was selected as one variable where quality measures have been developed and tested, Satisfaction with Care Survey (Thrasher and Purc-Stephenson 2008). The Satisfaction with Care instrument contained 21 items that loaded into three factors labelled attentiveness, comprehensive care and role clarity. Of the 21 original items in this instrument 13 items accounted for 70.8% of the variance in the measure. These 13 items were included in the current study along with two additional items. One additional item was included to capture the overall satisfaction level of the respondent (item # 11,) and the other additional item was included to address acceptance of the NP role (item#15). Table 1 includes all the items used in the survey.

Table 1: Items of the Satisfaction Survey

Satisfaction	
1.	The Nurse Practitioner gave me a chance to say what was on my mind.
2.	The Nurse Practitioner was friendly to me.
3.	I felt free to talk to the Nurse Practitioner about private thoughts.
4.	I feel the Nurse Practitioner spent enough time with me.
5.	The Nurse Practitioner took my problems very seriously.
6.	I would trust the Nurse Practitioner with my health.
7.	The Nurse Practitioner provided information about how to look after my health/problem.
8.	The Nurse Practitioner took time to answer my questions or address my concerns.
9.	The Nurse Practitioner provided excellent care.
10.	The Nurse Practitioner was successful in dealing with my problem
*11.	Over all I was very satisfied with the care I received from the Nurse Practitioner.
**15.	I am likely to refer a friend or family member to the Nurse Practitioner
Role Clarity	
12.	I am clear on how a Nurse Practitioner's role is different from a nurse's role.
13.	I am clear on how a Nurse Practitioner's role is different from a doctor's role.
14.	I am clear on how a Nurse Practitioner is trained.

* Added in this project overall satisfaction

** Included in satisfaction score but also represented acceptance.

Two practice sites were used for data collection. The first site was a primary care clinic in a mixed industrial residential area of a medium sized city where one Primary Health Care NP worked two days per week. The second site was a university campus health setting where a Primary Health Care Nurse Practitioner Intern was employed one day per week.

A convenience sample of 200 patients was the goal. The first 100 from each of the two practices to complete and return the questionnaire were included in the study. However upon data entry and cleaning it was determined that seven subjects actually returned blank surveys and several others left some responses blank.

Verbal permission was obtained from clinic administrators in both sites for the study. Approval from both sites was obtained after the research protocol, patient information sheet, and questionnaire were presented along with assurance to the clinic administrators that appropriate ethics approval would be obtained prior to data collection. Ethical approval was received from the ethics committee affiliated with the researchers employing university.

An administrative assistant or clinic receptionist in each site distributed the participant explanation letter and the questionnaires to patients at the completion of their visit with the NP. The assistant asked each patient to complete and place the completed questionnaire in a sealed box in the waiting room on the patient's way out of the clinic. The assistant was oriented to the study so that she could answer any questions. The NP, also the researcher was available to answer any questions. Data collection was hypothesised to take approximately ten weeks. In reality data collection required six months. Issues around the assistant remembering to distribute the questionnaires and holiday breaks at the university influenced the data collection process.

Analysis

One hundred and ninety three surveys with enough data to enter into the study were returned for analysis, seven were returned blank. Several had data missing and were included in analysis only in the areas where item responses were not required for that analysis. Responses were entered, cleaned, and analysed using SPSS version 17. Demographics are presented as a simple frequency table (table 2).

Satisfaction survey results were based on likert scales (1= strongly agree to 4 strongly disagree). A Total Satisfactions score for each individual was calculated by adding responses to the 12 items inquiring about satisfaction with care (first 10 questions from original form plus items 11 and 15 new). The role clarity score was calculated for each individual by adding the responses to the 3 questions about patient ability to describe differences between the NP and a GP or a practice nurse in the same clinic.

Table 2: Description of participants

Variable	N	Range	Mean	Std Deviation
Age	190	9-86yrs	34.59	16.91
Missing	3			
Waiting Time	182	0-30min	7.75	6.20
Missing	11			
Variable		**Frequency**		**Percent**
Gender				
Female		101		50.5
Male		92		46.0
Ethnicity*				
NZ European		138		71.5
Maori		12		6.2
Samoan		2		1.0
Tongan		1		0.5
Chinese		6		3.1
Indian		3		1.6
Other		26		13.5
Both NZ European and Maori		5		2.6
Education (3.1% Missing)				
Primary		3		1.6
Some secondary		33		17.1
Completed secondary		29		15.0
Some tertiary		73		37.8
Bachelor's		21		10.9
Some Postgraduate		13		6.7
Master's		3		1.6
In Doctoral study		6		3.1
Doctorate		2		1.0
Other		4		2.1
Missing		6		3.1
Reason for Visit (8.8% missing)				
Med refill		31		16.1
Injury		23		11.9
Skin complaint		18		9.3
Ill		46		23.8
STI check		3		1.6
MAP/Preg		8		4.1
Health Promotion		14		7.3
Eye/Ear complaint		4		2.1
Blood test results		4		2.1
Forms/letters/ referral		18		9.3
Chest pain		1		0.5
Check up		4		2.1
Accompanied child		2		1.0
Missing		17		8.8

*No one reported being Cook Island Maori or Niuean in this study.

The above grouping was slightly different form the original work of Thrasher and Purc-Stephenson (2008). This study was primarily interested in patient satisfaction with and acceptance of the role of the NP, therefore the grouping of items into one total satisfaction variable was used to capture satisfaction rather than looking at three components of satisfaction.

The role of the NP is new in New Zealand so role clarity was of a secondary interest to the researchers. The original three items defining role clarity were grouped as done in the study by Thrasher and Purc-Stephenson (2008).

Finally one item, #15 was used to address acceptance of the role. While it is recognised that one item scales are not usually robust, this item was deemed representative of the concept acceptance by the research team.

Patient satisfaction was compared across individual characteristics of the sample including age, gender, reason for the visit, educational level, ethnicity, time waiting for service, and role clarity. The dependent variable was Total Satisfaction, a continuous variable and the independent variables were at various levels of data. Analysis was guided by the level of data and statistics used included the Man Whitney U, the Pearson's R for correlation, Analysis of Variance and the Kruskal-Wallis test. The two sites were combined as there was no significant difference on the total satisfaction scores between the NP practices using the t-test for independent samples ($t=1.43$, $p=.159$)

RESULTS

The number of missing responses varied across the independent variables (three for age; six for education; 11 for waiting time and 17 for reason for the visit). One hundred and ninety three completed satisfaction surveys were received with individual items missing data on the satisfaction survey varying from one to seven. Question 15 "I would refer friends or family to the NP had seven missing responses.

No attempt was made to statistically replace missing items. Rather data were analysed using exclude cases pairwise, meaning individuals were only excluded from analysis if data were missing for the item under analysis.

Satisfaction

The dependent variable in this study was satisfaction. The satisfaction items, as previously stated were drawn from the work of Thrasher and Purc-Stephenson (2008). Total Satisfaction was calculated by adding the responses for the first 10 questions plus item 11 and 15 of the survey. Patients responded to the question by ticking a box that corresponded to a 4 point likert scale; strongly agree=1, agree =2, disagree=3, and strongly disagree=4.

Total satisfaction mean score for 179 usable responses was 15.598 with SD of 4.71 and a range of 12-25. The lower the score the more satisfied the patient. Overall respondent strongly agreed or agreed that they were satisfied with the care provided by the NP.

Role clarity

Role clarity scores were calculated based on the three items 12-14 of the survey. The same likert scale was used for these items. The mean Role Clarity score for 191 responses was 6.23 with SD of 2.59 and a range of 3-12. Again, the lower the score the more the patient agreed that they could differentiate between the Nurse Practitioner, the practice nurse and the physicians in the clinic. In this study patients were likely to respond that they agreed or disagreed (the middle scores) that they were clear about role differences and educational differences between the NP, GP and practice nurse.

Acceptance

Item 15 was included both as an item in total satisfaction and as an indicator of acceptance of the role. Item 15 used the same likert scale to determine how likely the patient was to refer a friend or family member to the NP. The mean score on this item from the 186 responses was 1.45 with a SD of.578 and a range of 1-3, meaning that most patients agreed or strongly agreed that they were likely to refer a friend or family member to the NP.

Satisfaction determinates

The total satisfaction score was analysed to determine if the characteristics of the respondents or clinical visit were related to satisfaction. To determine this satisfaction was compared across ages, waiting times, and role clarity using the Pearson's correlation r, gender using the Mann Whitney U, and education, using the Kruskall-Wallis H test and ethnicity and reason for visit using ANOVA. The results are presented in tables 3-7.

Table 3a: Satisfaction and age or waiting times or role clarity

Variable	N	r	Sig.
Age	174	.221	.003*
Waiting time	178	.122	.113
Role clarity	178	.355	.000*

There was a small positive correlation between age and satisfaction, (lower satisfaction scores meant better satisfied, therefore the younger the patient the better satisfied) and a medium positive correlation between role clarity and satisfaction (the clearer on the differences the better satisfied with care). There was no significant correlation between waiting times and satisfaction. Shorter waits were not correlated with higher statisfaction nor were longer waits correlated with lower levels of patient satisfaction with the care provided.

Table 3b: Satisfaction and gender

Variable	N	Score	Z	Sig.
Gender				Two tailed
Female	93	3427	-1.50	.132
Male	84			

There was no significant difference between genders on levels of satisfaction. Males and females reported similar levels of satisfaction with the care the NP provided.

Table 4: Satisfaction and education

	Satisfaction Score
N=172	
Chi-square	12.295
df	9
Significance	.197

Satisfaction was not significantly related to levels of education. Satisfaction levels across the ten different levels of education identified in the NZ census data and included in the study were similar.

Table 5: Satisfaction and ethnicity

	Sum of Squares	df	Mean square	F	Significance
Between groups	60.431	7	8.633	.384	.911
Within groups	3799.072	169	22.480		
Total	3859.503	176			

Satisfaction was not significantly related to ethnic background. Satisfaction levels were similar across the eight ethnicities included in the study. It was noted two categories from the nine NZ census data categories were not selected by respondents, while a new category, Maori and NZ European was added by respondents.

Table 6: Satisfaction and reason for visit

	Sum of squares	df	Mean square	F	Significance
Between groups	341.750	12	28.479	1.391	.176
Within groups	3070.668	150	20.471		
Total	3412.417	162			

Satisfaction was not significantly related to reason for visit. Levels of satisfaction with care were similar no matter the reported reason for the patient visit.

DISCUSSION

The initial evaluation of new health care roles or models of care should include outcomes of safety, acceptance, satisfaction, costs, and role transfers (Mitchell-DiCenso et al 1996). This study set out to address the satisfaction and acceptance of a new health care role in the primary care setting. Using a previously validated instrument with two additional items added by the authors, the present study findings reflect those of other researchers around the world who have looked at satisfaction with care provided by NPs (Benkert et al 2007; Knudtson 2000; Pinkerton and Bush 2000; Cipher et al 2006; Thrasher and Purc-Stephenson 2008). Overall patients were satisfied with the care they received and had generally accepted the role.

Interestingly and different from findings by Thrasher and Purc-Stephenson (2008) patients in this study had a moderate level of understanding of the role and understanding did relate to satisfaction. This finding may reflect an anomaly in the study population or it may be related to the fact that half of the study group was from a university setting where it is assumed that critical thinking and curiosity is encouraged leading to participants requiring clarity around the roles of their health care providers. Satisfaction levels may also reflect the expectations by participants around who provides primary care. Finally satisfaction may reflect the information given to participants by the clinical assistants who may themselves not clearly understand the new role leading to dissatisfaction with explanations given by assistants.

Another interesting finding that younger patients were more satisfied with care than the older members of the sample. This is supported by earlier findings (Berkert et al 2002) but is different from Thrasher and Purc-Stephenson (2008). This finding may again reflect expectations about providers across generations in New Zealand.

Another difference between this study and the original using the survey (Thrasher and Purc-Stephenson, 2008) was in the analysis. The study did not analyse satisfaction, as it's separate components attentiveness, comprehensiveness of care, and role clarity. Rather this satisfaction study combined all the items into one satisfaction measure for analysis. The individual components of satisfaction were not the focus of this study. This study set out to address levels of patient satisfaction and acceptance of the NP role.

One final interesting finding relates to the one item acceptance scale which indicated patients were accepting of the role. This finding is interesting considering the role clarity scores. That is, respondents were not entirely clear on the role but were willing to refer friends or family members to the provider for health care. This may reflect the characteristics of the providers rather than the role.

Limitations of this study

Two definite problems arose in this study that could impact results. The first issue was the failure to use fully trained research assistants to distribute and collect questionnaires or answer participant's questions. This failure impacted the amount of time it took to collect data (nearly six months instead of ten weeks). This failure may also have impacted information given to participants at the time of data collection. Even though efforts were made to educate the clinic assistant as to the nature of the study, how to approach the participants, and how to answer questions, there was no control over the assistant's approach to data collection within the structure of their work day. The inconsistency may have impacted what the participants knew about the NP role and consequently levels of satisfaction and role clarity.

The next problem concerns the instrument itself. The first being the failure to use reverse statements in the questionnaire to avoid the column tick phenomena. Participants had the potential to select the same column response for each item of the questionnaire, potentially impacting on results. However, this format was consistent with the instrument originally designed by Thrasher and Pruc-Stephenson (2008). The other issue concerning the instrument was the use of a one item acceptance scale. Since this is preliminary study of the role, a simple survey of acceptance using one item provided useful information for future studies to build upon.

Finally, this study addressed patient satisfaction with care provided by two primary health care NPs. Given the variation in scope, education, and practice settings of NPs in New Zealand the results of this study may not be generalisable to all NZ practicing NPs.

Future Research

Given the limitations of this study, a larger study including the reverse statements and trained assistants may improve the quality of findings. It would be especially interesting to determine if a larger sample and a trained assistant would have similar findings around role clarity and satisfaction. It would also be interesting to address the components of satisfaction using a larger sample as this would allow for additional statistical analysis of findings.

Future work might address the relationships between role clarity and acceptance. Expanding the acceptance component with more items could provide more robust scale for measuring acceptance.

If it is accepted that participants were satisfied with the care they received from NPs and had accepted the role, then future studies could be designed to address the other variables recommended for initial evaluation of new roles, i.e. safety, efficacy, costs and role transfer. These studies would complete the initial evaluations of the role and set the ground work for long-term monitoring of the role of the NP in NZ.

CONCLUSION

The impact of the relatively new role of the NP in New Zealand has not been fully evaluated. This study addressed two aspects of new roles recommended for evaluation, satisfaction and acceptance. Despite its flaws, this study further demonstrates that patients world wide are satisfied with the care they receive from NPs and that the role is accepted by individuals with varying educational levels, ethnicity, or reasons for their health care visit.

REFERENCES

Bauer, J. 2010. Nurse Practitioners as an underutilized resource for health reform: Evidence-based demonstrations of cost effectiveness. *Journal of the American Academy of Nurse Practitioners, 22*(4):228-231.

Benkert, R., Barkauskas,V., Pohl, J., Tanner, C., and Nagelkirk, J. 2002. Patient satisfaction outcomes in nurse-managed centers. *Outcomes Management, 6*(4):174-181.

Benkert, R., Barkauskas, V., George, N., Pohl, J., Tanner, C. and Marszalek A. 2007. Satisfaction with a School-Based Teen Health Center: A Report Card on Care. Pediatric. *Nursing,* 2(33):103-109.

Boyd, M. 2009. Presentation *Older Persons Ability Level Study* at the College of Nursing Aotearoa symposium on aging, Wellington, NZ.

Brooten, D., Naylor, M., York, R., Brown, L., Hazard Munro, B., Hollingsworth, A., Cohen, S., Finkler, S., Deatrick, J., and Houngblut, J. 2002. Lessons learned from testing the quality cost model of advanced practice nursing (APN). *Journal of Nursing Scholarship, 34(4):*369-375.

Brown, S.A. and Grimes, D.E. 1995. A meta-analysis of nurse practitioners and midwives in primary care. *Nursing Research, 44*(6):332-9.

Bryant-Lukosius, D. and Dicenso, A. 2004. A framework for the introduction and evaluation of advanced practice roles. *Journal of Advanced Nursing, 48*(5):530-540.

Byrne, G., Richardson, M., Brunsdon, J., and Patel, A. 2000. Patient satisfaction with emergency nurse practioners in AandE. *Journal of Clinical Nursing 9*:83-92.

Cipher, D., Hooker, R., and Sekscenski, E. 2006. Are older patients satisfied with physician assistants and nurse practitioners? *Journal of the American Academy of Physician Assistants, 19(1):*36-44.

Cooper, M.A, Lindsay, G.M., Kinn, S., Swann, I.J. 2002. Evaluating emergency nurse practitioner services: A randomized controlled trial. *Journal of Advanced Nursing, 40*(6):721-730.

Gilmer, MJ. 2009. Presentation *Working Differently Stretching Minds*, at the College of Nursing Aotearoa symposium on aging, Wellington, NZ.

Hunter, M., Ventura, M, and Keams, P. 1995. Cost analysis of a nursing center for the homeless. *Nursing Economics, 17*(1):20-8.

Jenkins, and Torrisi, D. 1995. NPs. Community nursing centers and contracting for managed care. *Journal of the American Academy of Nurse Practitioners, 7*(3):119-23.

Kinnersley, K., Anderson, E., Perry, K., Clement, L., and Turton, P. 2000. Randomised controlled trial of nurse practitioners versus general practitioners care for patients requesting "same day" consultation in primary care. BMJ 320(7421):1043-1048.

Knudtson, N. 2000. Patient satisfaction with nurse practitioner service in a rural setting. *Journal of the American Academy of Nurse Practitioners, 12*:405-412.

Langer, L. 2009. Presentation *Development of NZs First Geri-spych Nurse Practitioner* at the College of Nursing Aotearoa symposium on aging, Wellington, NZ.

Larkin, H. 2003. The case for nurse practitioners. *Hospitals and Health Networks, August*:54-59.

Lashinger, H., Almost, J., and Tuer-Hodges, D. 2003. Workplace empowerment and magnet hospital characteristics: Making the link. *Journal of Nursing Administration, 33(7/8)*:410-422.

Ministerial Taskforce on Nursing. 1998. *Report of the ministerial taskforce on nursing: Releasing the potential of nursing*. Wellington, NZ, Ministry of Health.

Mitchell-DiCenso, A., Pinelli, J., and Southwell, D. 1996. Introduction and evaluation of an advanced nursing practice role in neonatal intensive care. In Kelly, K.ed. *Outcomes of Effective Management Practices,* p 1143-1148. Sage, Thousand Oaks.

Moore, J., Saywell, R., Thakker, N., and Jones, T. 2002. An analysis of patient compliance with nurse recommendations from an afterhours call centre. *American Journal of Managed Care,* 8(4):343-351.

NPNZ listserve communications April 2010.

Paez, K and Allen, J. 2006. Cost-effectiveness of nurse practitioner management of hypercholesterolemia following coronary revascularization. JAANP, 18(9):436-444.

Pinkerton, J., and Bush, H. 2000. Nurse practitioner and physicians: Patients' perceived health and satisfaction with care. *Journal of the American Academy of Nurse Practitioners, 12(6):*211-217.

Shumm, C., Humphreys, A., Wheeler, D., Cochrane, M., Skoda, S., and Clement, S. 2000. Nurse management of patients with minor illness in GP settings: a multicenter randomised control trial. BMJ 320(7241):1038-43.

Spitzer, R. 1997. The Vanderbilt experience. Nursing Management, 28(3):38-40.

Thompson, D., Yarnold, P., Adams, S., Spacone, A. 1996. How accurate are waiting time perceptions of patients in the emergency department? *Annals of Emergency Medicine, 28(6)*:652-656.

Thrasher, C. and Purc-Stephenson, R. 2008. Patient satisfaction with nurse practitioner care in emergency departments in Canada. Journal of the American Academy of Nurse Practitioners 20(5):232-237.