Attitude of emergency department patients with minor problems to being treated by a nurse practitioner

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ABSTRACT

Introduction: It may be appropriate for nurse practitioners (NPs) to provide care for a subset of emergency department (ED) patients with non-urgent problems. Our objective was to determine the attitude of ED patients with minor problems to being treated by an NP.

Methods: Consecutive adults who presented to this tertiary ED on weekdays between 8 am and 4 pm were eligible for the study if they had 1 of the following 18 complaints: minor abrasions or lacerations, minor bites, minor burns, minor extremity trauma, cast check, earache, superficial foreign body, lice or pinworms, morning-after pill request, needlestick injury or body-fluid exposure, prescription refill, puncture wound, sore throat, subconjunctival hemorrhage, suture removal or wound check, tetanus immunization request, toothache, or urinary tract infection (women). Unless pain or a language barrier precluded study involvement, a triage nurse gave each patient a brief survey to be completed prior to physician assessment.

Results: Of 728 eligible patients during the study period, 246 (34%) were invited to participate and 213 (87%) were enrolled. The mean age was 34.5 years, and 58% were men. When asked about their willingness to be treated by an NP, 72.5% said "yes" (95% confidence interval [CI], 65.8%–78.4%), 15.5% were "uncertain" (95% CI, 10.8%–21.1%) and 12.1% said "no" (95% CI, 8.0%–17.3%). Of those who said "yes," 21% expected to also see an emergency physician during their ED visit and 67% did not. Willingness to be treated by an NP was independent of age, gender or educational status.

Conclusions: A majority of ED patients with minor problems accepted being treated by an NP, often without additional physician assessment. Several factors, including impact on ED staffing and patient flow, logistics, cost and quality of care should be evaluated before implementing such strategies.

Key words: emergency medicine; emergency department; health personnel; nurse practitioner; questionnaire; survey

RÉSUMÉ

Introduction : Des infirmières praticiennes pourraient peut-être offrir des soins à un sous-groupe de patients reçus au département d'urgence (DU) pour des problèmes non urgents. Notre objectif

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était de déterminer la réaction des patients au DU face à l'idée d'être traités par une infirmière praticienne pour des problèmes mineurs.
Méthodes : Des adultes consécutifs ayant visité ce DU d'un hôpital de soins tertiaires sur semaine entre 8 h et 16 h furent admissibles à l'étude si leurs symptômes de présentation figuraient dans la liste qui suit : abrasions ou lacérations mineures, morsures mineures, brûlures mineures, traumatismes aux extrémités mineurs, vérification de plâtre, mal d'oreille, corps étranger superficiel, poux ou oxyures, demande de pilule du lendemain, blessure par piqûre d'aiguille ou exposition à des liquides corporels, renouvellement d'ordonnance, blessure par perforation, mal de gorge, hémorragie sous-conjonctivale, enlèvement de points de suture ou vérification de plaie, demande d'immunisation anti-tétanique, mal de dents ou infection urinaire (femmes). À moins que la douleur ou qu'une barrière linguistique n'empêche la participation à l'étude, une infirmière de triage remit à chacun des patients un bref sondage à remplir avant l'évaluation par le médecin.
Résultats : Parmi 728 patients admissibles au cours de la période d'étude, 246 (34 %) furent invités à participer et 213 (87 %) furent inscrits. L'âge moyen était de 34,5 ans et 58 % des participants étaient des hommes. Lorsqu'on leur demanda s'ils étaient prêts à se faire soigner par une infirmière praticienne, 72,5 % des patients répondirent «oui» (intervalle de confiance de 95 % [IC] 65,8 %–78,4 %), 15,5 % étaient «incertains» (IC 95 %, 10,8 %–21,1 %) et 12 % répondirent «non» (IC 95 %, 8,0 %–17,3 %). Parmi ceux qui répondirent «oui», 21 % s'attendaient à voir également un médecin d'urgence lors de leur visite au DU et 67 % ne s'attendaient pas à voir un médecin. La bonne volonté à être traité par une infirmière praticienne était indépendante de l'âge, du sexe et du niveau d'éducation.
Conclusions : Une majorité de patients reçus au DU pour des problèmes mineurs ont accepté de se faire traiter par une infirmière praticienne, souvent sans évaluation additionnelle par un médecin. Plusieurs facteurs, notamment l'impact sur la main-d'œuvre au DU et le débit des patients, la logistique, le coût et la qualité des soins devraient être évalués avant de mettre en pratique une telle stratégie.

Introduction

Nurse practitioners (NPs) have provided independent care to many North American rural communities since the 1960s.[1] From the early 1990s, the integration of NPs into the acute care setting has become more common.[2] Although a universal definition of what constitutes an NP is elusive, there are 2 specific groups commonly referred to as NPs: acute care/specialty NPs, and extended class NPs.[3]

There are growing pressures to change the delivery of acute care in Canada. The Romanow Report suggested there is a need to break down barriers between health care workers and have greater teamwork and interdisciplinary collaboration;[4] therefore an increased deployment of NPs in the Canadian health care system seems likely.

Although the potential of a role for NPs in primary care delivery in Canadian emergency departments (EDs) has been identified, this role remains undefined and controversial.[3] High levels of patient satisfaction with NP care have been reported,[5] but no studies have prospectively assessed patient willingness to be treated by NPs in urban tertiary care settings. The purpose of this study was to assess the stated willingness of adult tertiary care ED patients with minor problems to be treated by an NP, and to determine the characteristics of this population.

Methods

Design and setting

This prospective descriptive study was conducted in the ED of Vancouver General Hospital, Vancouver, BC. This tertiary trauma centre has an annual ED census of 53 000 patients, 56% of who are triaged to the treatment (non-acute) area.

Ethics and approval

The Behavioural Research Ethics Board of the University of British Columbia and Vancouver Hospital and Health Sciences Centre approved the study. Completion and return of the survey implied the patient's consent to participate in the study.

Study setting and population

From April 10, 2000, to July 13, 2000, consecutive patients over age 16 who were triaged to the ED treatment area on weekdays between 8 am and 4 pm were eligible if they had 1 of the following 18 complaints: minor abrasions or lacerations, minor bites, minor burns, minor extremity trauma, cast check, earache, superficial foreign body, lice or pinworms, morning-after pill request, needlestick injury or body-fluid exposure, prescription refill, puncture wound,

sore throat, subconjunctival hemorrhage, suture removal or wound check, tetanus immunization request, toothache, or urinary tract infection (women). These specific complaints were developed by an interdisciplinary committee of emergency physicians and nurses for a potential ED fast-track program prior to the genesis of this study. Patients were excluded if they were unable to provide informed consent, unable to read or understand questions due to language or comprehension difficulties, unable to complete the survey due to pain severity, or if the emergency physician had already assessed them.

Sampling

Convenience sampling was chosen to maximize patient enrolment during times of high ED volume when research personnel were available. Based on projecting sufficiently narrow confidence intervals (CIs) for the proportion of subjects hypothetically willing to see an NP, we established a priori that our minimum sample size requirement was 200 patients.

Protocol and data collection

The study training program included one-on-one in-servicing of all triage nurses, distribution of a pocket card study summary prior to study commencement, and daily briefings to triage nurses during study enrolment.

On-duty triage nurses invited eligible patients to participate in the study and gave them a cover letter (Flesch–Kincaid Readability Grade 11.5), a survey (Flesch–Kincaid Readability Grade 5.2) and a pen. The cover letter (Appendix 1) explained the purpose of the study and the survey procedure. To maximize response consistency, the cover letter defined "nurse practitioner" as a registered nurse with advanced knowledge and decision-making skills in assessment, diagnosis and health care management; and defined "emergency physician" as a doctor with specialist training and certification in emergency medicine. The cover letter also indicated that NPs assess and discharge some patients without direct physician involvement, but that, during the study, all patients were assessed and discharged by an emergency physician. The one-page survey (Appendix 2) took approximately 5 minutes to complete and included the following: 5 closed-ended demographic questions, 1 open-ended question to clarify the presenting problem, and one 3-part, closed-ended question regarding hypothetical willingness to have an NP treat this problem (assuming availability). Patients were informed that completion and return of the survey to a dedicated study box in the treatment area waiting room prior to physician assessment implied consent to participate. To maintain consistency, triage nurses directed all patient questions to the on-call research nurse who was available by pager during the study period.

To determine the true denominator of eligible patients, 1 of 2 dedicated research nurses regularly reviewed the ED charts and computer tracking system for eligible patients each day during the study period. Every day at 8 am, research nurses gave triage nurses batches of 20 sequentially numbered surveys. At 4 pm they collected and documented all unused surveys at triage and all completed surveys in the study box. Research nurses also confirmed patient eligibility, checked completed surveys, and noted any reasons for exclusion. All survey responses were transferred to a computer database for analysis.

Statistical analysis

SPSS (Version 6.1, Macintosh) was used to generate descriptive statistics and conduct logistic regression modeling. Bionomial 95% CIs for proportions, and tests of differences between proportions for exploratory purposes were calculated using Stata (Version 5.0, Macintosh). All statistical tests were two-tailed, and $p \leq 0.05$ was considered statistically significant.

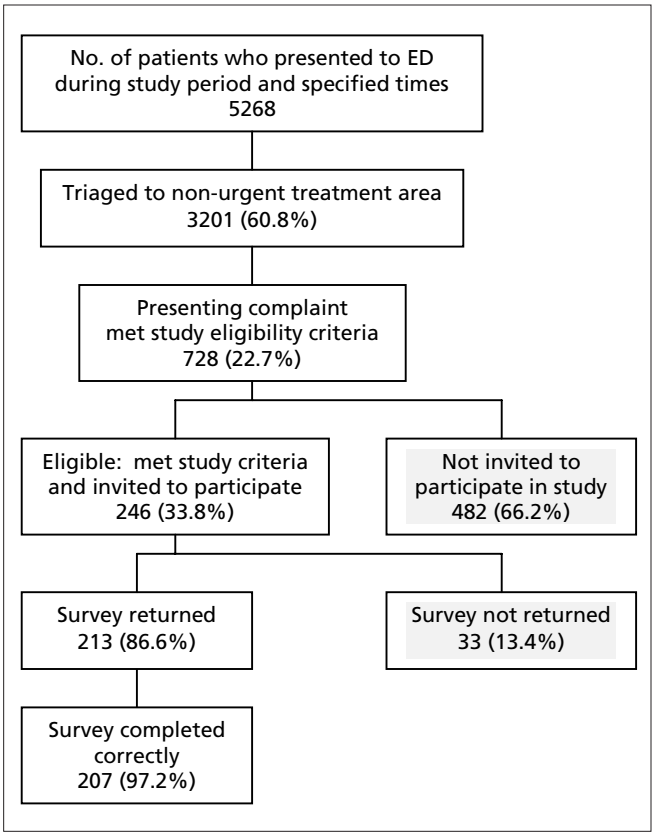

Fig. 1. Study population

Results

Study population

During the study period and specified times, 5268 patients presented to the ED. Of these, 3201 were triaged to the non-urgent treatment area. Of 728 eligible patients, 246 (34%) were asked to participate in the study and 213 (87%) returned surveys. Six surveys were excluded due to incorrect completion and resultant coding errors (Fig. 1).

Table 1 shows that patients ranged from 16 to 91 years of age, with a mean of 34.5. Fifty-eight percent of subjects were men. The highest level of subjects' completed schooling was a college diploma (38.2%). One percent had completed either a trade school or an English as a Second Language program. English was the primary language spoken at home for 93.2% of patients. Table 2 summarizes the number of patients enrolled in each pre-specified presenting complaint category and shows that the category could not be determined in 30 cases. These 30 completed surveys were included in the analysis on an intent-to-treat basis to reflect the reality of triage nurse assessment, complaint category assignment, and potential NP allocation.

Willingness to be treated by a nurse practitioner

Figure 2 shows that 150 of 207 subjects (72.5%; 95% CI, 65.8%–78.4%) indicated a hypothetical willingness to be treated by an NP for their presenting complaint. Of these, 67.3% said they would be comfortable being treated and discharged without direct emergency physician assessment, 21.3% said they would be comfortable only if they were also assessed by an emergency physician, 6.7% said they were uncertain how they felt about NP function, and 4.7% did not respond to the question. Of the 207 subjects surveyed, 25 (12.1%; 95% CI, 8.0%–17.3%) said they were unwilling to have an NP treat their presenting problem. In this group, 9 (36%) indicated they would never be comfortable being treated by an NP and 16 (64%) indicated they might be comfortable under the following conditions: if they had a different problem (n = 13; 81.3%), if NP treatment resulted in substantial cost savings to the health care system (n = 4; 25.0%), or if it resulted in shorter ED waiting times (n = 6; 37.5%). Note that multiple responses were permitted. Thirty-two of 207 subjects (15.5%; 95% CI, 10.8%–21.1%) were uncertain if they would be willing to have an NP treat their presenting problem. A logistic regression analysis showed that willingness

Table 1. Characteristics of survey respondents

Variable	n = 207
Mean age (range)	3.45 (16–91)
Male gender (%)	119 (57.5)
Language spoken at home (%)	
English	193 (93.2)
Chinese	4 (1.9)
Japanese	2 (1.0)
Other*	8 (3.9)
Highest level of schooling completed (%)	
None, or no formal schooling	3 (1.4)
Elementary school	8 (3.9)
Secondary/high school	60 (29.0)
Diploma program	79 (38.2)
University degree	43 (20.8)
Postgraduate education	11 (5.3)
Other level of schooling†	3 (1.4)

*One each of French, Guiridi, Korean, Norwegian, Punjabi, Spanish, Taiwanese, plus 1 survey with missing data for this query.
†English as Second Language (1), Machinist, level 2 (1), Trade school (1).

Table 2. Number of study participants enrolled in each pre-specified presenting complaint category*

Complaint category	No. (and %) of participants
Extremity trauma, minor	68 (32.9)
Lacerations / Abrasions, minor	47 (22.7)
Sore throat	9 (4.3)
Bites, minor	8 (3.9)
Burns, minor	6 (2.9)
Earache	6 (2.9)
Toothache	6 (2.9)
Superficial foreign body	5 (2.4)
Urinary tract infection (women)	5 (2.4)
Morning-after pill request	4 (1.9)
Suture removal / Wound check	3 (1.4)
Abrasions	2 (1.0)
Prescription refill	2 (1.0)
Subconjunctival hemorrhage	2 (1.0)
Cast checks	1 (0.5)
Needlestick injury or Body-fluid exposure	1 (0.5)
Tetanus immunization request	1 (0.5)
Puncture wound	1 (0.5)
Lice or Pinworms	0 (0.0)
Sub-total	177 (85.5)
Unable to determine study eligibility complaint category*	30 (14.5)
• Complaint does not fit a study eligibility category	20 (9.7)
• Documented subjective complaint too vague	6 (2.9)
• Subjective complaint not documented	4 (1.9)
Total number of study participants	207 (100.0)

*The category could not be deteremined in 30 cases, but the respondents' surveys were included in the analysis on an intent-to-treat basis to reflect the reality of triage nurse assessment, complaint category assignment, and potential nurse practitioner allocation.

to be treated by an NP was independent of age, gender or educational status.

Discussion

We found that most adult tertiary care ED patients with minor problems indicated a willingness to be treated by an NP, often even if this meant being discharged without direct emergency physician assessment. Acceptability to patients is critical and, while there have been many studies on the use, the care spectrum and on patient acceptance of NP care,[1,2,3,5,6] no previous research has assessed patient acceptability in an urban tertiary care ED where nurse physicians do not currently practise.

Canadian emergency care is evolving, as suggested by a recent report from the Canadian Association of Emergency Physicians to the Romanow Commission.[7,8] If future research suggests that the introduction of NPs for non-urgent ED care will improve patient flow, increase staffing flexibility and provide high quality care at lower cost, then the data from this study suggest that most Canadians would be open to NPs providing non-urgent emergency care. A recent review outlined the numerous issues, controversies and challenges that must be addressed before deploying NPs in Canadian EDs, as well as the roles they might best fulfill if they are deployed.[3] Interested readers are encouraged to refer to this well referenced discussion paper.[3]

Limitations

This was a study of stated willingness to be treated by an NP in a province that has yet to regulate and deploy NPs. It is conceivable that hypothetically stated willingness may

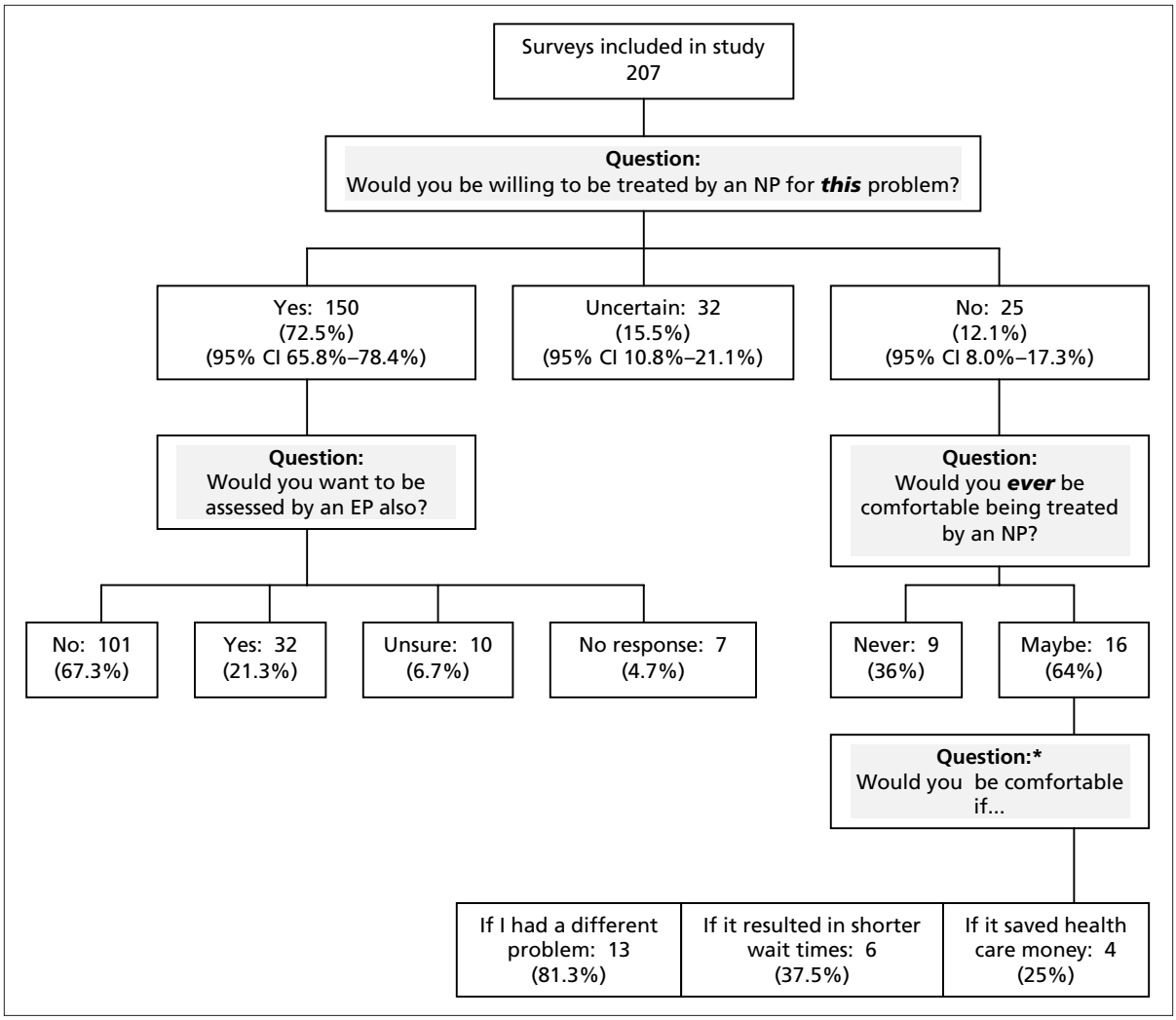

Fig. 2. Survey responses, indicating respondents' willingness, or not, to be treated by an NP, reasons for their decisions and under what circumstances they would be willing. *Multiple answers were allowed. NP = nurse practitioner; CI = confidence interval; EP = emergency physician.

not translate to true acceptance of such care, were it actually in place. Our study is also limited by the fact that triage nurses recruited only 34% of eligible patients, and it is possible that this selection was a non-random process. It is also conceivable that, because of triage workload, fewer eligible patients were invited to participate during high ED volume periods (making our study population less representative). These factors introduce uncertainty about the precision of our primary outcome; nevertheless the level of acceptance of NPs remains striking.

Conclusion

Most adult tertiary care ED patients with minor problems indicate a hypothetical willingness to be treated by an NP, often even if this involves treatment and discharge without direct emergency physician assessment. Several factors, including impact on ED staffing and patient flow, logistics, cost and quality of care should be evaluated before implementing such strategies.

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Competing interests: None declared.

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Appendix 1. Cover letter

A Survey of Patients' Attitudes Toward Being Treated by a Nurse Practitioner in a Tertiary Emergency Department

Dear Patient,

With increasing demands on Canadian emergency departments, the possible role of nurse practitioners has been considered. However, as patients' attitudes toward such a program have not been evaluated, we are seeking your feedback.

We are doing a survey on the attitudes of patients with minor injuries and illnesses toward being treated by a nurse practitioner in the Emergency Department at Vancouver General Hospital. A nurse practitioner is a registered nurse with advanced knowledge and decision-making skills in assessment, diagnosis and health care management. In some places, nurse practitioners assess and discharge some patients without direct physician involvement. Currently, all our patients are assessed and discharged by an emergency physician. An emergency physician is a doctor with specialist training and certification in emergency medicine.

It would be appreciated if you would take a few minutes of your time to complete this short survey. Your responses to the survey are, and will remain, anonymous and confidential. There is no need to put your name on the survey. Your participation in this study is completely voluntary. Your decision to participate or not participate will in no way affect your treatment. There will be no cost to you for participation in this study. Completion and return of the survey implies your consent to participate.

After you have completed the survey, please return it to the box labeled "Nurse Practitioner Survey" in the Treatment Area waiting room. If you have any questions regarding this survey, please do not hesitate to contact the undersigned *at* (604) xxx-xxxx ext. yyyyy.

Yours sincerely,

(Principal investigator)

(Research coordinator)

Please turn to page 252 for Appendix 2.

Appendix 2. Questionnaire*

A Survey of Patients' Attitudes Toward Being Treated by a Nurse Practitioner in a Tertiary Emergency Department

SURVEY QUESTIONS

Please respond to the following questions:

1. What is the problem you are presenting with today? (Please specify below, use back of page if necessary)

2. Would you be willing to be treated by a nurse practitioner for this problem?

Uncertain (please specify why, use back of page if necessary): _____

Yes If yes, please select ONE of the following statements:

– I would be comfortable being treated by a nurse practitioner and discharged without an emergency physician directly assessing me

– I would be comfortable being treated by a nurse practitioner only if I was also assessed by an emergency physician

– I am uncertain of how I feel regarding how nurse practitioners should function

No If no, please select ONE of the following statements:

– I would never be comfortable being treated by a nurse practitioner

– I might be comfortable being treated by a nurse practitioner if . . . (check all that apply)

a) I had a different problem than I do today

b) It resulted in substantial cost savings to the health care system

c) It resulted in shorter waiting times in the emergency department

d) Other (specify): _____

FACTS ABOUT YOU

The following questions are being asked to help us describe the people who complete this survey.

1. How old are you? _____ Years
2. Gender: Female Male
3. What language do you usually speak at home? (Choose one)
   English French Chinese Punjabi Other (specify): _____
4. What is the highest level of schooling that you have completed? (Choose one)
   – None or No Formal Schooling
   – Completed Elementary School
   – Completed Secondary/High School
   – Completed Diploma Program (Technical or Community College)
   – Completed University Degree (Bachelor's Degree)
   – Completed Post Graduate Education (Masters, Ph.D.)
   – Other (specify): _____
5. What is your postal code? __ __ __ - __ __ __
6. Comments: (please specify below, use back of page if necessary)

PLEASE RETURN SURVEY TO BOX LABELLED "NURSE PRACTITIONER SURVEY" IN THE TREATMENT AREA WAITING ROOM.

*Note: spaces for patients' responses were eliminated to facilitate publication.