ORIGINAL RESEARCH

PEER-REVIEWED

Community pharmacist practices in hypertension management

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I undertook this study because it is very clear that hypertension treatment and control need to be improved. In today's complex health care system, the community pharmacist can often be a patient's first point of contact with the system. The unique positioning of the community pharmacist provides an opportunity to study the effect of community pharmacist intervention on hypertension management.

J'ai entrepris cette étude parce que le traitement et le contrôle de l'hypertension ont clairement besoin d'être améliorés. Dans le système de soins de santé complexe d'aujourd'hui, le pharmacien communautaire constitue souvent le premier point de contact pour le patient. Ce positionnement unique offre l'occasion d'étudier l'incidence de l'intervention du pharmacien communautaire sur la gestion de l'hypertension artérielle.

Abstract

Objective: To determine the current practices of community pharmacists in the management of hypertension.

Methods: This was a cross-sectional, observational study of pharmacist practice using unannounced standardized patients (SPs) with hypertension visiting a random stratified sample of 101 community pharmacies in Edmonton, Alberta. Consent was not obtained from pharmacists.

Results: *Knowledge of current blood pressure guidelines and target values:* Of the 101 community pharmacists who were visited by the SPs, 69% offered a general blood pressure target value (<120/80 mm Hg); only 7% stated the correct target blood pressure value for the SPs' particular scenario (<140/90 mm Hg). Only 14% requested enough patient history to properly determine target blood pressure. *Review of medical history:* Few pharmacists questioned the SPs about their medical history (7%), medication profile (16%), family history of cardiovascular disease (19%), previous elevated blood pressure readings (20%), or previous diagnosis of hypertension (22%). *Accuracy/confirmation of blood pressure reading:* 53% of pharmacists inquired about the conditions under which the blood pressure reading had been taken; 39% of pharmacists offered to retake the patient's blood pressure. *Patient education:* Pharmacists discussed how hypertension is diagnosed (76%), what hypertension is (46%), how to take a blood pressure reading properly (46%), and the impact of lifestyle measures on blood pressure (60%); they also gave supplemental educational materials (29%). *Referral:* 83% of pharmacists advised the SPs to make an appointment to see a physician.

Conclusions: Pharmacists took reasonable steps to determine the accuracy of the blood pressure measurement, explain the diagnosis of hypertension, and refer to a physician. Major deficiencies were observed in assessment of target blood pressure and review of medical history. Pharmacists, alone or in collaboration with other health professionals, are urgently needed to play a major role in identifying, screening, and managing individuals with hypertension. ***Can Pharm J*** **2006;139(5):38–44.**

Hypertension is a highly prevalent, strong, and independent risk factor for cardiovascular disease, the leading cause of death in the Canadian population and worldwide,[1-3] but it has been shown to be poorly managed and controlled in Canadians. In the Canadian Heart Health Survey, Joffres et al. found that while approximately 21% of Canadians had hypertension, 43% of those were not aware of their condition.[4] Among the 56% of hypertensive individuals who were aware of their diagnosis, 21% of those were treated but not controlled, and 22% were neither treated nor con-

trolled. There has been little indication that awareness or control of hypertension has changed significantly over time.[5]

Hypertension treatment and control needs to be improved. As an accessible resource, community pharmacists are in an excellent position to actively identify and screen individuals with high blood pressure.[6]

Contemporary pharmacy practice suggests that pharmacists should take responsibility for medication management and patient outcomes.[6] Community pharmacists are uniquely positioned within the health care system to help patients improve their blood pressure control by using a variety of strategies to solve medication-related problems. Studies in integrated health systems have demonstrated that when pharmacists are included as members of health care teams, control rates for hypertension increase.

One older[7] and three more recent studies[8-10] found that blood pressure control was improved when community pharmacists assisted with patient education, blood pressure monitoring, drug therapy management, and medication adherence assessment. In two of these studies, blood pressure control, based on measurements in physicians' offices, was improved.[7,10] In addition, two studies found that quality of life improved among patients who were followed by a pharmacist for 4 to 6 months.[9,10]

Judging from these studies, it would seem possible for pharmacists to help patients improve their blood pressure control, yet hypertension management remains suboptimal in the Canadian population. While several studies have demonstrated the value of pharmacists when it comes to improving blood pressure control, the extent to which pharmacists have changed their practice to incorporate such findings is unknown. The purpose of this study was to determine the current state of pharmacy practice with respect to hypertension management.

Methods

Stage 1

Stage 1 of our study was necessary to determine practice standards for pharmacists with respect to hypertension management. Until very recently[6] there have been no formal practice guidelines for pharmacists pertaining to hypertension management (or any specific disease conditions, for that matter). As such, we conducted a survey of professional opinions pertaining to pharmacy practice expectations for the management of hypertension in the Capital Health Region in Edmonton, Alberta, from May 27, 2003, to June 25, 2003. We used a convenience sample of family physicians, general internists with expertise in hypertension management, Canadian Hypertension Education Program panellists, pharmacists from professional/regulatory associations, clinical pharmacists, and front-line community pharmacists. Interviewees were selected based on their area of practice. Each interviewee was presented with a hypothetical scenario similar to that of Stage 2 of this study. Two open-ended questions based on the scenario were asked to elicit opinions on reasonable pharmacy practice for the management of hypertension in community pharmacies (Appendix 1). Interviews were conducted until saturation of responses occurred (15 interviews).

Stage 1 resulted in gaining a consensus of what a pharmacist should reasonably do for patients with hypertension. For the purposes of this analysis, responses from the interviews were compiled and qualitatively examined for common themes in expected practices. These common themes then became the list of reasonable standards by which pharmacists' actions were evaluated.

Stage 2

Stage 2 of the study was a cross-sectional, observational study of community pharmacists' current practice using a standardized patient (SP) posing as a patient at risk for hypertension.

The study involved one-on-one encounters between two SPs and pharmacists. It took place at 101 randomly selected community pharmacies in metropolitan Edmonton and the surrounding area. Pharmacies were selected using randomized stratified sampling by pharmacy type. The pharmacy types (chain, independent, etc.) were obtained from the *2003 Pharmacy Sourcebook*.[11] Pharmacists who were registered with the Alberta College of Pharmacists and working at any community pharmacy in Edmonton and the surrounding area were candidates for the study. Consent was not obtained from pharmacists, but a general bulletin in a quarterly newsletter was sent to all Alberta pharmacists informing them of the study and its objectives.

Training of the standardized patients

Two middle-aged male SPs were selected and trained for the scenario by the Standardized Patient

Key points

- Hypertension is poorly controlled in Canada.
- Community pharmacists have an opportunity to play a major role in the identification and management of hypertension, but current pharmacist practices are not known.
- When unannounced standardized patients were used to evaluate current practices, most pharmacists did not perform up to the expected standard for hypertension management.
- A major change in pharmacy practice must occur if pharmacists are to fill the gap in hypertension care and improve patient outcomes.

This study was funded by a grant from the Alberta College of Pharmacists.

The primary objective of the study was to determine the proportion of community pharmacists who met the practice standards

Program, Health Sciences Council, University of Alberta. They were trained to act as a walk-in customer who was curious and concerned about his blood pressure reading, taken from his friend's home blood pressure monitor.

The SP was provided with a script for the encounter. The researchers created a medical history and medication profile, which the SPs memorized (Appendix 2). The SP was also given pertinent medical and life histories in preparation for pharmacist inquiries. If the SP was asked about physician and prescription history, he would provide the explanation that he was new in town and did not have a regular family physician in the Edmonton area, nor had he ever filled a prescription at the pharmacy. The SP was taught to deal with situations expected to occur during the encounter with the pharmacist. The SP was also trained to pay attention to the pharmacist's actions according to the practices outlined in the guidelines, and (using simulations) to accurately recall the encounter and document the pertinent details on a recall form, based on the checklist of hypertension management practice standards developed in Stage 1. We also recorded comments from the SPs about the general demeanour of the pharmacists.

The SP waited until the pharmacist was not busy before approaching. He inquired about a blood pressure reading (150/100 mm Hg) taken the previous weekend on his friend's blood pressure monitor and asked what it meant. The SPs approached each pharmacist with an identical, scripted scenario (Appendix 2). No information about the patient's medical history or medication history was volunteered, but it was available if the pharmacist asked. The SP documented pharmacists' responses on a recall form immediately after the encounter.

The primary objective of the study was to determine the proportion of community pharmacists who met the practice standards as determined in Stage 1.

Points clés

- *L'hypertension artérielle est mal contrôlée au Canada.*
- *Les pharmaciens communautaires ont l'occasion de jouer un rôle de premier plan dans le diagnostic et la gestion de l'hypertension artérielle, mais les pratiques actuelles des pharmaciens ne sont pas connues.*
- *Quand on a utilisé des patients normalisés et agissant incognito pour évaluer les pratiques actuelles, la plupart des pharmaciens ont fourni un rendement inférieur aux normes pour ce qui est de la gestion de l'hypertension.*
- *Un changement majeur doit s'opérer dans la pratique de la pharmacie si on veut que les pharmaciens puissent combler le fossé dans les soins fournis aux hypertendus et améliorer les résultats pour les patients.*

Results

From Stage 1 of the study, the suggested practice standards for hypertension management gathered from the interviewed pharmacists and physicians fell into five categories. First, pharmacists should know current blood pressure guidelines and target values and be able to interpret them for patients. Second, pharmacists should inquire about the patient's medical history (cardiovascular disease, medications, previous elevated blood pressure, hypertension diagnosis). Third, pharmacists should confirm the accuracy of the blood pressure measurement. Fourth, pharmacists should provide some form of brief patient education on blood pressure and hypertension. Fifth, pharmacists should refer the patient to a physician if deemed necessary. There was a remarkable consistency of responses from all interviewees, regardless of their practice or specialty.

One hundred and one pharmacists were visited by the SPs between January 15 and February 28, 2004. Pharmacy types included 27 independents, 23 supermarkets, 18 franchises, 13 chains, 11 department stores, 8 banners, and 1 wholesaler. On average the SP waited 4.1 minutes to speak with a pharmacist; the total visit duration averaged 6.3 minutes.

Knowledge of current blood pressure guidelines and target values

Of the 101 pharmacists visited by the SPs, 69% offered a general blood pressure target value (<120/80 mm Hg). Seven percent stated the correct target blood pressure value for the scenario (<140/90 mm Hg). Only 14% requested enough patient history to properly determine the target blood pressure value for this scenario.

Review of medical history

Few of the pharmacists questioned the SPs about their medical history. Twenty-two percent queried the SPs regarding a previous diagnosis of hypertension. Twenty percent asked about previous elevated blood pressure readings. Fewer than 20% inquired about a family history of cardiovascular disease, a medication profile, or a medical history.

Accuracy/confirmation of blood pressure reading

Half of the pharmacists (53%) inquired about the conditions under which the blood pressure reading had been taken; 39% offered to retake the blood pressure at the pharmacy.

Patient education

Most pharmacists discussed how hypertension is diagnosed (76%) and the impact of lifestyle measures on blood pressure (60%). Nearly half explained what hypertension was (46%) and how to take a blood pressure reading properly (46%). Some pharmacists (29%) provided supplemental educational material.

Referral

Most pharmacists (83%) advised the SP to make an appointment to see a physician.

General demeanour

The SPs were generally very impressed with their interactions with pharmacists, describing them as approachable (88%), easy to understand (78%), helpful (69%), attentive (66%), patient (62%), happy (58%), and concerned (43%).

Discussion

Overall, pharmacists took reasonable steps to explain the diagnosis of hypertension and refer patients to a physician for further evaluation. Unacceptable deficiencies were identified in their identification of appropriate target blood pressures, assessment of medical and medication history, and accuracy/confirmation of the blood pressure reading. As such, most pharmacists did not perform up to the expected standard for contemporary hypertension management.

To our knowledge, this is the first study to use unannounced SPs in the assessment of community pharmacists' practice with respect to cardiovascular disease. Similar methodologies have been used to evaluate physician and nursing practice in other disease entities,[12-15] although usually with the consent of the participant, potentially leading to a volunteer bias and a Hawthorne effect.

Standardized patients are people who have been carefully coached to present their simulated illness in a standardized way. Much is known about the use of SPs in medical education,[16,17] but research comparing the SP method with other data collection methods is scarce. Usually, the SP technique is used for the first contact with the patient only, as was done in this study. Gerritsma and Smal[18] consider the SP method less appropriate for studying the medical decision-making process; they believe that a series of patient encounters reveals more about the way medical decisions are made. Similarly, Tamblyn et al.[19] has studied this "first-visit bias" in a case of osteoarthritis combined with gastritis (an acute problem) and a case of osteoarthritis paired with chronic hip complaints (no acute problem). The quality score for two successive consultations was higher than the first-visit score. Although our study design is different, this may suggest that the pharmacists' performance could have been underestimated, as the SPs visited each pharmacist only once; a series of encounters might have resulted in better

APPENDIX 1

Determining practice standards for community pharmacists

Date: _____

Interviewee: _____

Job title/position: _____

Objective

To establish standards of pharmacy practice for the management of hypertension.

Situation

A 50-year-old male approaches a community pharmacist in a local drug store and claims that his blood pressure, taken on the in-store blood pressure machine, is 150/100 mm Hg. He asks, "What does this mean?"

Questions

1. What do you think would be reasonable practices to expect from a community pharmacist in the above situation?
2. What do you think the ideal role of the community pharmacist should be in the above situation?

pharmacist performance.

A study by Holde et al.[20] used undetected SPs to identify the frequency and quality of certain prevention-oriented counselling skills among resident physicians and compared these skills with the residents' attitudes toward and knowledge about primary prevention. Trainees' attitudes and knowledge were captured by an instrument designed for this study using 127 Likert scales. Counselling skills were assessed using one of two standardized patients. Residents were unaware of the simulation, which occurred in their routinely scheduled ambulatory care setting. The study authors found that resident physicians' skill levels were inadequate for accomplishing routine counselling interventions in the primary care setting. This may suggest that pharmacist training and continuing professional development should focus more on patient-centred clinical skills.

The use of unannounced SPs to evaluate pharmacist practice has several advantages. It can provide an unbiased assessment of real-world practice, since asking pharmacists what they would do in a hypothetical hypertension scenario would almost certainly lead to an overestimation of their activities (social desirability bias). Using the same clinical scenario for all pharmacists allows for meaningful combination of data across a sample of pharmacists (e.g., proportion complying with guidelines) and also allows for comparison of practice between pharmacists. The advantages of using an unannounced, "blinded" approach to evaluate practice is lost if the SP is "discovered" by the clinician. To our knowledge, the SPs were not detected by the pharmacists in our study. Because we used two different SPs, it is possible that there were some differences in how the scenario was played out and/or documented. To minimize this, most of the interactions were scripted, and data were collected on standardized case report forms.

At the time of this study, there were no official standards of practice for pharmacists with respect to the management of hypertension. As such, it may be seen as "unfair" to evaluate pharmacists' practices without such a standard in place. We did, however, interview a wide variety of clinicians to determine what a pharmacist should reasonably do for a patient with hypertension, and there was a remarkable consistency of responses in these interviews. Indeed, the findings from this study in part stimulated the development and recent publication of the Canadian Hypertension Education Program/Canadian Pharmacists Association practice guidelines for the management of hypertension by pharmacists.[6]

Unsystematic "secret shopper" evaluations of pharmacists are already being conducted by the media and even other professional organizations. Pharmacists may not like this, but that choice is not being offered. The choice that pharmacists do have is whether to rise to the challenge of a higher standard of practice, one that is patient-centred and outcomes-focused.

Community pharmacists can serve as an important link between physician and patient, although it is clear from the present study that the average community pharmacist, and by extension, the whole profession, still has a long way to go. Hypertension is an important and highly prevalent risk factor for cardiovascular disease, but it remains poorly identified, treated, and controlled. The new standards of practice for pharmacists in hypertension manage-

APPENDIX 2

Standardized patient scenario

Scenario

The SP asks to speak with the pharmacist on duty: "Hi there. I was wondering if you could help me out. I don't know much about high blood pressure, but I took mine on my buddy's blood pressure machine last Sunday and it told me my blood pressure was 150 over 100. I was just wondering what those numbers mean … I mean, are they good or bad? I read an article in the Journal a while ago about how high blood pressure can be bad for your heart."

Clinical background

- Age: 52 years
- Gender: Male
- Weight: Average (not noticeably obese or thin)
- Diet: No special regimen
- Alcohol: 6–8 beers/week
- Non-smoker
- Father died of myocardial infarction at age 64
- Past medical history: Nil
- No allergies
- Medications: None

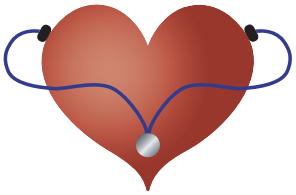
Non-clinical background

- Works as a pressman at a local printing press (shift work).
- New patient to the pharmacy (no prescriptions filled), shopping for his wife.
- No family physician; goes to local walk-in clinic if has ailments.
- Married, 2 kids, both in college.
- Appearance: Casual, clean.
- Behaviour: Curious, eager, not in a rush.
- Wants to know more about blood pressure reading — what normal ranges are, what happens if blood pressure is too high/low.
- Not particularly knowledgeable about blood pressure, hypertension, or cardiovascular health, but read an article that stated it "could be bad for his heart."

ment include identification of patients with elevated blood pressure, measurement/assessment of blood pressure in relationship to recommended targets, lifestyle education, recommendations for drug therapy, assisting patients in achieving blood pressure goals, and encouraging medication adherence.[6]

It should be noted that the SPs were very impressed with their interactions with pharmacists, describing them as approachable, easy to understand, and generally caring. As such, we remain encouraged that pharmacists can be part of the solution to the problem of hypertension management; however, this opportunity will be lost unless the profession takes bold steps forward.

We must be realistic about the current and future state of pharmacy practice. There will be little need for dispensing pharmacists in the very near future, yet many pharmacists are still complacent about the need to change their practice. In their paper, "Leading Change in Pharmacy Practice: Fully Engaging Pharmacists in Patient-Oriented Healthcare," Tsuyuki and Schindel[21] have outlined steps toward changing the profession in order to meet such goals, but change is virtually impossible if there is no sense of urgency for it. We hope this article has communicated some of that urgency. Pharmacy organizations, managers, and pharmacists need to lead change by clearly articulating a vision for the profession: "Pharmacists engaged in patient-centred care, supported by high-quality research evidence of its efficacy, supported in their work environment, continuously learning, and recognized for their important contributions to primary health care."[21] Future work should focus on identifying other gaps in practice, providing pharmacists with professional development opportunities to change their practice, addressing barriers (real and perceived) to practice change, and evaluation of disease management programs by pharmacists and in multidisciplinary teams.



There will be little need for dispensing pharmacists in the very near future, yet many pharmacists are still complacent about the need to change their practice

Conclusions

Community pharmacists took reasonable steps to explain the diagnosis of hypertension and refer to a physician, but had major shortcomings in identification of target blood pressure, evaluation of medical history, and confirmation of the accuracy of the blood pressure measurement. A major change in pharmacy practice is needed if pharmacists are to fill the gap in hypertension care and improve patient outcomes. ■

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