

Pharmacists' experiences with dispensing opioids

Provincial survey

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Abstract

Objective To explore pharmacists' beliefs, practices, and experiences regarding opioid dispensing.

Design Mailed survey.

Setting The province of Ontario.

Participants A total of 1011 pharmacists selected from the Ontario College of Pharmacists' registration list.

Main outcome measures Pharmacists' experiences with opioid-related adverse events (intoxication and aberrant drug-related behaviour) and their interactions with physicians.

Results A total of 652 pharmacists returned the survey, for a response rate of 64%. Most (86%) reported that they were concerned about several or many of their patients who were taking opioids; 36% reported that at least 1 patient was intoxicated from opioids while visiting their pharmacies within the past year. Reasons for opioid intoxication included the patient taking more than prescribed (84%), the patient using alcohol or sedating drugs along with the opioid (69.9%), or the prescribed dose being too high (34%). Participants' most common concerns in the 3 months before the survey were patients coming in early for prescription refills, suspected double-doctoring, and requests for replacement doses for lost medication (reported frequently by 39%, 12%, and 16% of respondents, respectively). Pharmacists were concerned about physician practices, such as prescribing benzodiazepines along with opioids. Pharmacists reported difficulty in reaching physicians directly by telephone (43%), and indicated that physicians frequently did not return their calls promptly (28%). The strategies rated as most helpful for improving opioid dispensing were a provincial prescription database and opioid prescribing guidelines.

Conclusion Pharmacists commonly observe opioid intoxication and aberrant drug-related behaviour in their patients but have difficulty communicating their concerns to physicians. System-wide strategies are urgently needed to improve the safety of opioid prescribing and to enhance communication between physicians and pharmacists.

EDITOR'S KEY POINTS

- This survey was part of a larger research project designed to develop and evaluate an interprofessional education program to improve the safety of opioid prescribing and dispensing in community settings.
- Ontario pharmacists surveyed in this study identified the same causes of opioid intoxication and the same strategies to improve opioid prescribing as the physicians surveyed as part of the larger project did. Pharmacists and physicians only differed in only one respect: While pharmacists reported difficulties in communicating with physicians, physicians were generally satisfied with their interactions with pharmacists.
- These results emphasize the urgent need for a system-wide response, including national opioid prescribing guidelines (which have been released since this survey was conducted), provincial prescribing databases, and strengthened protocols for physician-pharmacist communication.

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Le point de vue des pharmaciens qui délivrent des opiacés

Enquête provinciale

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Résumé

Objectif Étudier ce que pensent les pharmaciens de la distribution des opiacés, de même que leurs pratiques et leurs expérience en la matière.

Type d'étude Enquête postale.

Contexte La province d'Ontario.

Participants Un total de 1011 pharmaciens choisis à partir du registre d'inscription au Collège des pharmaciens de l'Ontario.

Principaux paramètres à l'étude L'expérience des pharmaciens quant aux effets indésirables liés aux opiacés (intoxication et comportement aberrant associé aux drogues) et leur interaction avec les médecins.

Résultats Un total de 1011 pharmaciens ont répondu à l'enquête, pour un taux de réponse de 64%. La plupart (86%) se sont dits inquiets pour plusieurs de leurs patients qui consomment des opiacés; 36% ont déclaré qu'au cours de la dernière année, au moins un patient était intoxiqué aux opiacés lors de sa visite à la pharmacie. Parmi les raisons de ces intoxications, mentionnons: le patient avait consommé plus que la dose prescrite (84%), il avait consommé de l'alcool ou des médicaments sédatifs en même temps que les opiacés (69,9%) ou la dose prescrite était trop forte (34%). Durant les 3 mois précédant l'enquête, les participants étaient le plus souvent préoccupés parce que les patients venaient trop tôt pour faire renouveler leur prescription, qu'ils pouvaient consulter plus d'un médecin et qu'ils demandaient qu'on remplace le médicament qu'ils auraient perdu (ces préoccupations étant citées fréquemment, respectivement par 39%, 12% et 16% des répondants). Les pharmaciens s'inquiétaient aussi des façons de faire des médecins, comme de prescrire des benzodiazépines en même temps que des opiacés. Ils ont aussi indiqué qu'ils avaient de la difficulté à rejoindre les médecins directement au téléphone (43%) et que souvent, les médecins ne retournaient pas rapidement leurs appels (28%). Les stratégies considérées les plus utiles pour améliorer la distribution des opiacés étaient la présence d'une base de données provinciale pour les prescriptions et des directives concernant la prescription d'opiacés.

Conclusion Il arrive souvent que les pharmaciens sont témoins d'intoxication aux opiacés et de comportements aberrants en lien avec les drogues chez leurs patients, mais ils ont de la difficulté à communiquer leurs préoccupations aux médecins. Il y a un urgent besoin d'instaurer des mesures à la grandeur du système pour que la prescription d'opiacés devienne plus sécuritaire et que la communication entre médecins et pharmaciens s'améliore.

Cet article a fait l'objet d'une révision par des pairs.
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POINTS DE REPÈRE DU RÉDACTEUR

- Cette enquête faisait partie d'un projet de recherche plus vaste visant à développer et à évaluer un programme de formation interprofessionnel pour améliorer la sécurité dans la prescription et la distribution des opiacés dans des milieux communautaires.
- Les pharmaciens participant à cette enquête ont identifié les mêmes causes d'intoxication aux opiacés et les mêmes stratégies pour améliorer la prescription d'opiacés que les médecins qui ont répondu à l'enquête du projet plus vaste. Pharmaciens et médecins différaient d'opinion sur un seul point: les pharmaciens rapportaient certaines difficultés à communiquer avec les médecins, alors que les médecins se déclaraient généralement satisfaits de leurs interactions avec les pharmaciens.
- Ces résultats soulignent l'urgente nécessité d'instaurer des mesures à la grandeur du système, incluant des directives nationales concernant la prescription d'opiacés (lesquelles ont été formulées depuis la tenue de cette enquête), la création de bases de données provinciales pour les prescriptions, et l'amélioration de la communication entre médecins et pharmaciens.

Opioid prescribing in Canada has increased dramatically in the past 10 years, accompanied by a marked increase in opioid misuse and overdose deaths.¹ There has been little research in recent years on the beliefs and experiences of pharmacists with respect to opioid prescribing. Older surveys suggest that pharmacists have had negative attitudes toward opioid therapy; for example, in a survey of pharmacists in Wisconsin, many respondents did not believe that it was acceptable medical practice to prescribe opioids for chronic pain for more than a few months.² However, these attitudes might have changed in recent years, given the rapid increase in opioid prescribing.

This survey was part of a larger research project designed to develop and evaluate an interprofessional education program to improve the safety of opioid prescribing and dispensing in community settings. The first phase of this research was to conduct needs assessment surveys for physicians, pharmacists, and nurses. Here we report the findings of the pharmacist needs assessment survey. The objective of the survey was to determine pharmacists' concerns about their clients' opioid use, their experiences with opioid intoxication in the pharmacy, their interactions with physicians in relation to opioid prescribing, and their views on strategies to improve the safety of opioid prescribing.

METHODS

Questionnaire design

The pharmacist survey was similar in content and structure to the physician survey conducted for the same project. The physician survey was based in part on questions from previous physician surveys.³ The survey asked pharmacists about the size of their practices and the communities they worked in. It asked them to estimate the number of opioid patients for whom they had concerns, the number who had been intoxicated from opioids in their pharmacies, and the prevalence of aberrant drug-related behaviour. It also asked about their views on physicians' opioid prescribing, their interactions with physicians, and their preferred strategies for improving the safety of opioid prescribing and dispensing. The survey was pretested on a small number of community and hospital pharmacists.

Sample selection

The main inclusion criteria for the survey were an active licence and a primary practice address in Ontario (N=10083 in 2007), an expressed interest in research (n=4634 of 10083), and birth date and registration date restrictions (n=1011 of 4634). The Ontario College of Pharmacists (OCP) mailed the surveys to the 1011 eligible pharmacists with a cover letter. A "fax-back" method

was employed using a modified Dillman approach.⁴ Two reminders were mailed to the pharmacists approximately 2 weeks apart.

Analysis

Descriptive analyses of the survey results are reported. Simple measures of association including linear (Pearson R^2) or rank (Spearman ρ) correlations were used to determine the relationships between certain pharmacist demographics (ie, age and years in practice) and survey items as appropriate (ie, number of total daily prescriptions in the pharmacy, number of opioid prescriptions, and number of opioid patients for whom the pharmacist had concerns). The written comments provided by respondents were collated and evaluated for common themes and suggestions to improve patient care.

Ethics

To protect the anonymity of the respondents, all mail contact with pharmacists was made by the OCP; the list of pharmacists contacted was not released to the research team by the OCP; and the survey responses were returned directly to the research team with no identifiers.

The Centre for Addiction and Mental Health Research Ethics Board approved this study. The study was funded by the Canadian Patient Safety Institute.

RESULTS

Description of sample

Of the 1011 surveys mailed to the pharmacists, 652 were returned, for a response rate of 64%. Of the 652 respondent pharmacists, 642 indicated that they dispensed opioid prescriptions to patients; therefore, the remainder of the analyses focused on these 642 respondents. Some or all of the 10 pharmacists who did not dispense opioids might not have worked in community settings. Pharmacists' ages ranged from 41 to 76 years, with a mean age of 52.8 years. Years in practice ranged from 4 to 55 years, with a mean of 28.3 years. Age and years in practice were highly correlated (Pearson $R^2=0.69$; $P<.001$). Male pharmacists comprised 55% of the respondents and had a mean age of 53.5 years. Female pharmacists comprised 45% of the sample and had a mean age of 47.2 years. In contrast, the 11900 pharmacists on the Ontario register are younger (mean age 46 years) and include a higher proportion of women (57%).

Most (77%) of the respondents practised in larger urban centres with populations of more than 30000; 12% of respondents practised in locations with populations of 10000 to 30000; and 11% practised in locations with fewer than 10000 residents. A report regarding the urban-rural distribution of Ontario pharmacists was not available from the OCP.

Opioid dispensing

Of the 642 respondents, 527 reported dispensing medications to chronic pain patients who were taking opioids daily for at least 6 months. The average estimated number of such patients attending respondents' primary pharmacies was 50.5, with a reported range of 0 to 3200 patients. The average total number of all prescriptions (opioid and nonopioid) billed per day at the respondents' pharmacies was 201.5 (n=626), with a range of 3 to 12000. The number of patients prescribed opioids for chronic pain was positively correlated with the total number of all prescriptions filled each day (Pearson $R^2=0.46$; $P<.001$).

Concerns about opioids

Most respondents (86%) reported that they were concerned about the prescription opioid use of several (1 to 10) or many (11 or more) of their patients. The number of patients that respondents were concerned about positively correlated with the number of patients prescribed opioids for chronic pain (Spearman $\rho=0.390$; $P<.001$). The most common opioid of concern was oxycodone (84%), followed by codeine (37%) and hydromorphone (28%).

Opioid intoxication

Of the 642 responding pharmacists, 223 (35%) reported that in the past year they had observed patients who appeared to be intoxicated by opioids while at the pharmacy (Table 1). The most common factors thought to contribute to opioid intoxication were that the patient took more than was prescribed (84%), the patient took alcohol or sedating drugs along with the opioid (70%), or the prescribed dose was too high (34%). These are the same 3 items that physicians cited as the leading causes of adverse events among their patients.³

Behaviour that could indicate opioid misuse or addiction is referred to as *aberrant drug-related behaviour*. The most frequently cited aberrant behaviour was requesting early renewal of the opioid prescription, with 53% reporting that this occurred sometimes and 39% reporting that it occurred frequently within the previous 3 months. Respondents indicated that they suspected that double-doctoring occurred sometimes (63%) or frequently (12%).

The third most common aberrant behaviour was requesting a replacement prescription for "lost" medications, reported as occurring sometimes by 58% and frequently by 16% of respondents (Figure 1).

The survey asked pharmacists to indicate physician prescribing practices that they had observed in the previous 3 months that concerned them (Table 2). The practices noted most frequently were prescribing benzodiazepines along with opioids (20%), prescribing opioids to patients suspected of misusing them (15%), and prescribing opioids to patients who probably did not need them (13%).

Table 1. Factors contributing to opioid intoxication

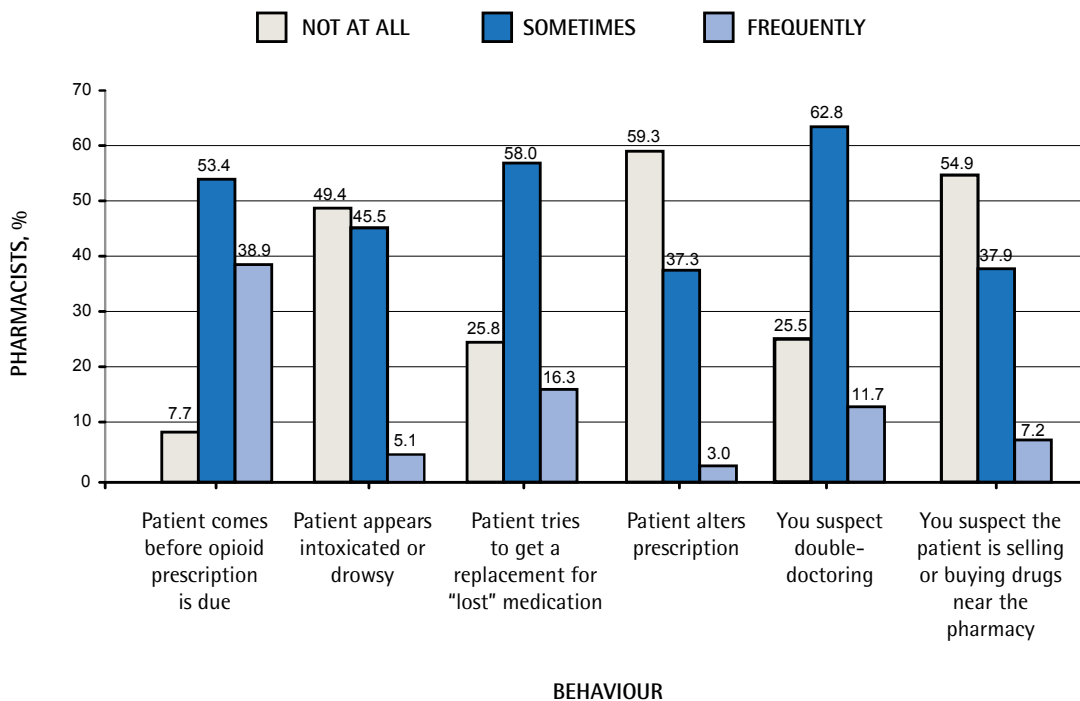
FACTOR	RESPONDENTS, %
Patient took more than prescribed	84
Patient took alcohol or sedating drugs along with the opioid	70
Prescribed dose was too high	34
Patient injected, crushed, or snorted the tablet	23
Physician, nurse, or pharmacist did not take into account that the patient was at high risk of overdose (eg, elderly)	17

Table 2. Pharmacist concerns about physicians' opioid prescribing practices in the past 3 months

CONCERNING PHYSICIAN PRACTICES	NO. OF RESPONSES	NOT AT ALL, %	SOMETIMES, %	FREQUENTLY, %
Prescribing benzodiazepines along with opioids	595	13	66	20
Prescribing opioids to patients you suspect of opioid misuse	612	23	62	15
Prescribing opioids to patients who, in your opinion, probably do not need them	584	28	59	13
Prescribing opioid doses that, in your opinion, might be too high	591	26	63	11
Increasing opioid doses too quickly	564	53	43	4
Prescribing opioids in combination with acetaminophen or ASA, where doses of the acetaminophen or ASA are too high	576	52	42	6
Prescribing injectable opioids for chronic noncancer pain	533	86	11	3

ASA—acetylsalicylic acid.

Figure 1. Aberrant drug-related behaviour observed in the past 3 months



Pharmacist-physician communication

Most pharmacists (69%) attempted to contact physicians about their opioid prescriptions at least once per month, with 23% attempting weekly contact. Most pharmacists reported that physicians sometimes or frequently did not respond to their concerns (61%) or were unwilling to communicate their therapeutic plans to the pharmacists (56%). Forty-three percent of pharmacists reported that physicians were frequently difficult to reach directly by telephone, while 28% said that physicians frequently did not return their calls promptly (Table 3).

Suggestions for improvement

Pharmacists were asked to rate the helpfulness of a

series of strategies to improve opioid dispensing (Figure 2). The items cited most often as very or somewhat helpful were a provincial database of patients' prescriptions (88%) and provincial prescribing guidelines (88%). Physicians also rated these 2 items as the most helpful on their survey.³

Pharmacists' written comments

A total of 285 respondents wrote additional comments on the survey. A common theme was that physicians should respond directly and quickly to pharmacists, and should recognize that pharmacists can help doctors improve their patient management. Another frequent theme was that physicians needed better guidance and monitoring around opioid prescribing, because their

Table 3. Physician-pharmacist communication in the past 3 months

FACTOR	NO. OF RESPONSES	NOT AT ALL, %	SOMETIMES, %	FREQUENTLY, %
Physician is difficult to reach directly by telephone (eg, have to relay message through the doctor's assistant first)	560	16	41	43
Physician does not promptly return calls	550	20	51	28
Physician not receptive to your concerns	543	38	49	12
Physician not communicating or willing to share the therapeutic plan	540	43	38	18

doses were too high, they prescribed to patients who either did not need them or were misusing them, and they gave early refills too readily. The respondents made numerous suggestions for improvements, such as a 1-page summary of opioid prescribing guidelines, workshops for physicians and pharmacists, a requirement that physicians write the patient diagnosis on the prescription, and a "hot-line" to identify opioid diversion and misuse.

For example, one pharmacist wrote the following:

The doctors feel that we are trying to interfere with their job, they know about the patient case more than we do, they think we mostly call for authorization to refill [a prescription], and the doctor is busy I hope that [the provincial medical regulatory authority] lets the doctors know that they have to listen to us. When we as pharmacist[s] realize that the doctors are willing to listen to us ... communication will be improved automatically.

DISCUSSION

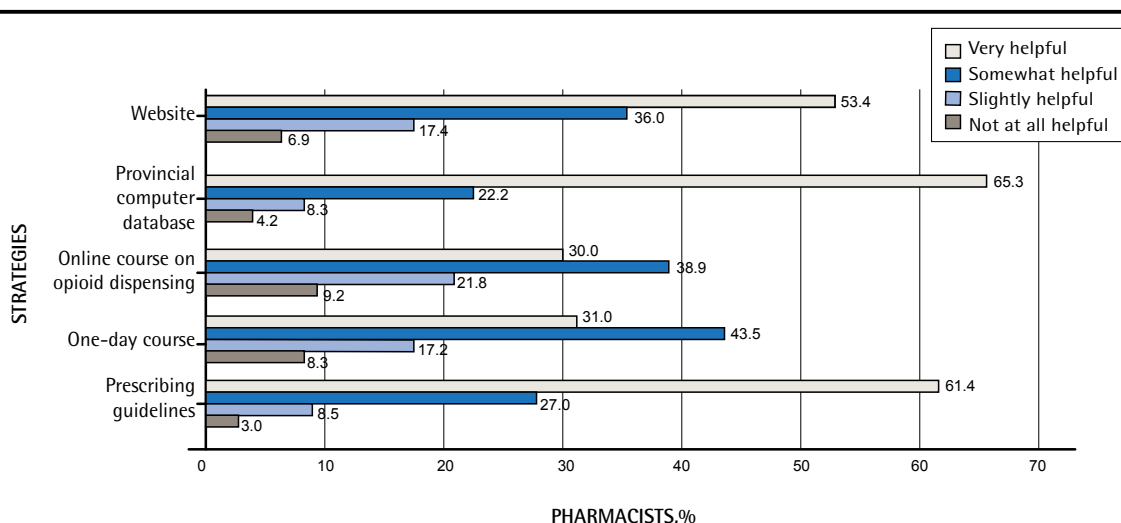
Most of the pharmacists we surveyed expressed concerns about opioid use in several or many of their patients. These concerns were based on direct observations of patient behaviour, such as coming in for early refills and opioid intoxication. Many pharmacists reported difficulty in communicating these concerns to physicians. These findings echo previous research on

physician-pharmacist communication. For example, in a qualitative study, community pharmacists reported that they had great difficulty in accessing GPs, because receptionists would not transfer their calls.⁵ In another qualitative study, 27 pharmacists and 36 GPs kept diaries of the nature of their interprofessional contacts. Most contacts (57%) were to clarify prescription details, while only 4% were related to patient care,⁶ suggesting that pharmacists and physicians do not often discuss clinical issues. This is unfortunate because pharmacists could play an important role in the care of chronic pain patients. They could alert the physician to aberrant drug-related behaviour, or to potentially dangerous drug interactions (eg, coprescribing of opioids and benzodiazepines). They could also assist physicians with specific clinical protocols, such as opioid switching and tapering, and with referral to methadone or buprenorphine programs.

Pharmacists' attitudes toward opioid use for chronic pain would likely improve if they had greater involvement in patients' treatment. Several surveys have found that pharmacists have positive attitudes toward opioid-dependent patients when they are actively involved in their treatment plan.⁷⁻⁹ For example, a large survey of Scottish pharmacists found providing services to drug misusers (eg, methadone dispensing, needle exchange) was associated with more positive attitudes.⁸

One limitation of this study is that the survey was only mailed to pharmacists who had indicated an interest in research (45% of the total number of pharmacists with an active Ontario licence). Also, the respondents

Figure 2. Pharmacists' perceptions of the helpfulness of potential strategies to improve opioid dispensing: n=625.



were on average older and more likely to be male than Ontario pharmacists in general. Thus the survey results might be skewed, if older male pharmacists have different experiences with patients taking opioids than younger or female pharmacists do. Also, 37% of the respondents were concerned about codeine use, but the survey did not distinguish between over-the-counter codeine and prescribed codeine.

Another limitation is that the survey only measured pharmacists' subjective experiences with patients taking opioids, and it relied on respondents' subjective estimates of the frequency of events (using categories such as *sometimes* and *frequently*). This could create an exaggerated picture of the prevalence and effects of addiction. For example, a patient who runs out early is not necessarily misusing or addicted to opioids; and perhaps some pharmacists believe that this behaviour occurs more often than it actually does.

Recent evidence, however, suggests that the pharmacists' concerns are valid. Physicians' prescriptions are a major source of opioids for opioid-addicted patients and for opioid overdose deaths, and both these opioid-related harms are increasing rapidly in Canada.^{1,10} Furthermore, the survey results are consistent with findings from a recent survey of 1000 primary care physicians in Ontario,³ which found that most physicians had had at least 1 patient with an opioid-related adverse event in the past year. The most common factors causing the events were the same as those cited by pharmacists: the patient took more than prescribed, the prescribed dose was too high, or the patient took alcohol or sedating drugs with the opioids. Both physicians and pharmacists rated a provincial prescribing database and opioid prescribing guidelines as the most helpful strategies for improving opioid prescribing. Physicians and pharmacists differed in only one respect: Whereas pharmacists reported difficulties in communicating with physicians, physicians were generally satisfied with their interactions with pharmacists.

Further research is needed to define more clearly the nature of the difficulties faced by pharmacists. For example, focus groups could elucidate in more detail the barriers they face in communicating with physicians. Research is also needed to develop and evaluate the effectiveness of interventions to improve pharmacist-physician communication and to manage opioid intoxication and aberrant drug-related behaviour.

Conclusion

Pharmacists commonly observe opioid intoxication and

aberrant drug-related behaviour in their patients, and they find it difficult to communicate their concerns to physicians. These results emphasize the urgent need for a system-wide response, including national opioid prescribing guidelines, provincial prescribing databases, and strengthened protocols for physician-pharmacist communication.

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Contributors

All authors contributed to concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

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