How do community pharmacists make decisions? Results of an exploratory qualitative study in Ontario

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Increasingly, pharmacists are required to move from simply providing advice and recommendations to actually making decisions and taking responsibility for them. For this study, we examined the clinical reasoning strategies that community pharmacists used and relied upon to make decisions in complex, ambiguous situations in practice.

Au-delà de la simple prestation de conseils et de recommandations, on attend de plus en plus des pharmaciens qu'ils prennent des décisions et qu'ils en assument la responsabilité. Aux fins de cette étude, nous avons examiné les stratégies de raisonnement clinique que les pharmaciens communautaires ont utilisées et sur lesquelles ils se sont fondés pour prendre des décisions lors de situations complexes et ambiguës dans leur pratique.

ABSTRACT

Background: As the complexity of pharmacy practice increases, pharmacists are required to make more decisions under ambiguous or information-deficient conditions. There is scant literature examining how pharmacists make decisions and what factors or values influence their choices. The objective of this exploratory research was to characterize decision-making patterns in the clinical setting of community pharmacists in Ontario.

Methods: The think-aloud decision-making method was used for this study. Community pharmacists with 3 or more years' experience were presented with 2 clinical case studies dealing with challenging situations and were asked to verbally reason through their decision-making process while being probed by an interviewer for clarification, justification and further explication. Verbatim transcripts were analyzed using a protocol analysis method.

Results and Discussion: A total of 12 pharmacists participated in this study. Participants experienced cognitive dissonance in attempting to reconcile their desire for a clear and confrontation-free conclusion to the case discussion and the reality of the challenge presented within each case. Strategies for resolving this cognitive dissonance included strong emphasis on the educational (rather than decision-making) role of the pharmacist, the value of strong interpersonal relationships as a way to avoid conflict and achieve desired outcomes, the desire to seek external advice or defer to others' authority to avoid making a decision and the use of strict interpretations of rules to avoid ambiguity and contextual interpretation. This research was neither representative nor generalizable but was indicative of patterns of decisional avoidance and fear of assuming responsibility for outcomes that warrant further investigation.

Conclusion: The think-aloud method functioned effectively in this context and provided insights into pharmacists' decision-making patterns in the clinical setting. *Can Pharm J (Ott)* 2016;149:90-98.

Background

The scope and nature of community pharmacists' work have changed significantly over the past decade.[1] Expanded scope of practice requires pharmacists to work in new ways, both as collaborators with patients and other professionals and as more autonomous decision-makers.[2] For decades, there has been discussion about pharmacists being an "underutilized" professional group: As pharmacists take on new

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responsibilities in immunization, prescribing, extending/modifying/adapting prescriptions, and other areas, the discussion about underutilization has begun to include the actual capacity of community pharmacists to absorb and fully integrate these new opportunities in day-to-day practice.[3-5] As noted by Tsuyuki,[6] pharmacists indeed have a duty of care; however, the question remains whether that responsibility ends with simply dispensing the right drug or whether it extends to other aspects of patient-centred care.

Integral to these new roles for pharmacists is the responsibility for making clinical decisions (sometimes collaboratively with, sometimes independently of, other health care professionals such as family physicians).[7] Anecdotally, pharmacists report considerable stress and discomfort with these new responsibilities, particularly within the context of clinically complex, ambiguous and ethically sensitive situations.[8] Within the former technical model of professional practice (emphasizing dispensing and drug distribution), pharmacists knew whether they were right or wrong in an objective and clear manner: Was the right medication put in the right vial for the right patient at the right time? Moving beyond drug distribution requires decision-making when information may not be available or is incomplete or where there is no clear, single right answer. This is particularly important in areas such as primary care, where clear diagnoses may be absent and where treatment decisions must be made even though crucial information (such as laboratory test results) may not be available.

Clinical reasoning is the discipline that helps explain thinking, problem-solving, analysis and decision-making in the health professions.[9] Within the field of medicine, considerable literature has explored the nature of clinical reasoning.[10] Much of this literature has focused on the cognitive strategies physicians use to solve complex problems in ambiguous situations, including reasoning from first principles, application of guidelines/algorithms or (most frequently) heuristic-based pattern recognition. As noted by Norman and Eva,[10] physician reliance on pattern recognition involves rapid, subconscious, cognitive cross-referencing between previously encountered clinical situations and current circumstances: Although pattern recognition is fast and generally reliable as a method for clinical reasoning, it can sometimes result in attribution errors that can compromise outcomes.

KNOWLEDGE INTO PRACTICE

- As pharmacy practice evolves, pharmacists are required to make decisions in challenging, ambiguous situations.
- Little is known about pharmacists' clinical decision-making practices.
- The think-aloud method is appropriate for exploratory research in clinical decision-making in pharmacy.
- Strategies for avoidance of conflict and actual decision-making characterize community pharmacists' decision-making.
- Confidence and comfort in making decisions are necessary for autonomous clinical practice.

Historically, community pharmacy has been more procedural and technical in its orientation and so there has been less interest in this line of inquiry. As community pharmacists' work evolves from the technical to the clinical, the need to better understand clinical reasoning in the context of expanded scope and information-imperfect environments has increased.

Objectives

This exploratory study was designed to characterize the clinical decision-making patterns of community pharmacists in Ontario, particularly during a time of significant evolution in the nature of professional practice. This research was undertaken as part of a research initiative exploring expanded scope of practice funded by the Ontario College of Pharmacists.

Methods

Because scant literature is available in this area, a qualitative research method was used, one that emphasized previous methods, models and approaches used in clinical reasoning research in medicine. Among the most frequently used methods for describing clinical reasoning, the "think-aloud method" pioneered by Newell and Simon[11] is an established method for collecting self-reflective verbal data about cognitive processes during an actual problem-solving task. As noted by Ericsson and Simon,[12] this approach is based on the following assumptions: 1) human thinking is a form of information processing; 2) information processing can be verbalized through self-reflection; and 3) thinking aloud indicates what information the respondent is actually prioritizing and concentrating on at the

MISE EN PRATIQUE DES CONNAISSANCES

- À mesure que l'exercice de la pharmacie évolue, les pharmaciens doivent prendre des décisions dans des situations difficiles et ambiguës.
- On sait peu de choses au sujet des pratiques relatives à la prise de décision clinique par les pharmaciens.
- La méthode de réflexion à voix haute s'avère appropriée aux fins de recherche exploratoire sur la prise de décision clinique en pharmacie.
- Les stratégies visant à éviter les conflits et à prendre des décisions caractérisent le processus décisionnel des pharmaciens communautaires.
- La confiance et l'aisance à l'égard de la prise de décision sont nécessaires pour que la pratique clinique soit autonome.

time. Although there are significant critiques of this approach (e.g., inherent subjectivity in self-reflection,[13] researcher bias effects of simultaneous combination of observation and interpretation[14] and disconnection between stated behaviours and actual real-world behaviours[15]), think-alouds have been widely used in the clinical reasoning literature in medicine, nursing and other professions[8,15,16] and were selected for use in this study.

Participants in this study were recruited from the Greater Toronto Area. Inclusion criteria for this study were pharmacists licensed in Ontario with 3 or more years of work experience in community practice in Ontario. A call for participants was put out through RxChat.org, Craigslist, pharmacy alumni resources at the University of Toronto and the University of Waterloo, and experiential education networks at the University of Toronto. Informed consent was received prior to each interview. This study was reviewed and approved by the University of Toronto's Research Ethics Board.

For this study, participants were presented with 2 case studies (see Box 1) and asked to reason through and verbally articulate how they would respond in each situation. Central to the think-aloud method is the opportunity for the interviewer (researcher) to ask probing questions of the participant to better understand the principles, values and reasons that underpin the decisions that are made and stated. This approach requires a high degree of vigilance on the part of the observer to ensure that participants articulate, justify, reflect upon and defend their decisions.[17] As outlined by Someren et al.,[17] this research relied on a single researcher undertaking all interviews while maintaining both field notes and verbatim transcripts. This allows the interviewer-researcher to actively engage with data and participants in an iterative manner, building upon previous participants' interviews throughout the research process. This method also builds the interviewer-researcher's confidence in a critical aspect of think-alouds: the use of individualized/nonstandardized probing to force participants to uncover tacit assumptions or biases that may shape thinking, clinical reasoning and decision-making.[18]

The case studies used in this research were drawn from a bank of teaching cases used in the University of Toronto's undergraduate pharmacy degree program. They were designed to stimulate in-class discussions related to complex, ethically sensitive, information-imperfect clinical scenarios. After reading the case study, the interviewer would invite the participant to discuss how he or she would respond to the practice-related challenges inherent in the case. Without interview protocol or guide, the interviewer would then, in an iterative and highly individualized/nonstandardized way, ask for clarification, justification and explication of the participant's response as a way of probing the underlying thought processes and values that guided the response. As a result (and consistent with the think-aloud research process[17,18]), there was no formal or semistructured interview or question guide—each interview was conversational and fluid, following the cues set by the participant, with the goal of asking questions to prompt reflection, justification and clear explication. Each interview took its own direction based on the interaction between participant and interview and the flow of conversation. Following presentation of both case studies, the interviewer asked a series of general questions related to participant demographics (e.g., age, years in practice, years since graduation) and practice experiences (employment history, subjective impressions of community pharmacy work, etc.) as a way of helping to better contextualize case study responses.

Critical to the think-aloud method is the need to not allow or accept facile or obvious solutions to clearly complex problems.[11] For example, if a participant in this study, in responding to Case 1, said, "Well, I would explain the importance to the parents of taking medications as they are prescribed and once they understood, then they would obviously adhere," the interviewer would respond, "Do you think that's realistic? Let's say they don't listen to you. What do you say or do

BOX 1 Think-aloud cases used as discussion prompts

Case 1: Don and Sarah Hill

Sarah and Don Hill have 4 children, all under the age of 7 years, 3 of whom have a congenital heart defect requiring medication use. Without these medications there is a 75% risk of death within the next year; with use of these medications, this risk drops to 15%. Side effects of this medication are relatively benign and readily managed. The Hills belong to a recognized religious group that firmly believes in "noninterference" even in life-threatening medical conditions. Although insurance will pay for the medications, the Hills don't believe they should interfere with fate. Under pressure from Don's employer (a family friend), they have visited a physician, received prescriptions and come to the pharmacy to get them filled. Your pharmacy technician has overheard them speaking and learned they actually have absolutely no intention of administering the medications to their children and have had the prescriptions filled simply to placate Don's employer. Your technician shares this information with you immediately prior to your counselling session with the Hills.

Case 2: Signet Wilkinson

Signet Wilkinson is a pharmacist working in a busy community practice. She has an excellent rapport with her patients and provides effective patient-centred care. Recently, her cousin Fanny told her about a terrific new guy she met. Fanny has been dating (unsuccessfully) for many years and is very keen on meeting someone, settling down and starting a family. Signet is thrilled for Fanny, as the 2 cousins are very close. Fanny's new boyfriend is called Joe Johnson. From what Signet is told by Fanny, Joe is a sweet and sensitive fellow. Signet has also seen a few pictures of Joe and he appears to be a strapping young man. Today in the pharmacy, Signet received a prescription for antiretroviral drugs used to treat HIV. These prescriptions are for "Joe Johnson." The person presenting the prescriptions looks very similar to the photographs Fanny has shown Signet, but Signet is not 100% certain it is the same person. What should Signet do?

next?" By pressing (or probing) participants in this way and ensuring that unrealistic or naive options were not simply allowed to continue unchallenged or unquestioned, the interviewer required participants to engage with each case in a thorough, thoughtful and realistic manner.

With the participants' permission, all interviews were audiotaped and verbatim transcripts were produced and analyzed. Transcripts were analyzed after each interview to support iterative, generative coding using protocol analysis and to inform subsequent interviews, thereby allowing the interviewer an opportunity to explore or confirm with subsequent participants emergent themes from previous interviews.[17] Protocol analysis was broken into 3 components: referring phrase analysis, assertional analysis and script analysis, which were used to lead, in the first instance, to coding and naming of themes.[11] The referring phrase is the verbal cue provided by the participant that he or she is responding to or referring to details of the case itself. Assertional analysis is the process by which the argument made by the participant following the referring phrase is analyzed to identify the values, norms or principles used to justify the stance taken—in essence a form of paraphrasing the participant's words. Script analysis involves a detailed analysis of the specific words and word choices used by the participant in framing his or her argument or justification. Recurring use of certain words, terms or turns of phrase provides insights into the manner in which participants are framing the problem and their response to it; for example, recurring use of sentences involving "I" would suggest personal involvement in the case, while recurring sentences involving "we" or "the team" would suggest an attempt to diffuse or deflect responsibilities. Analyzing data from a think-aloud study using this method allows researchers to draw inferences about the priorities and principles that inform participants' responses. As interviews progressed and themes emerged, subsequent interviews shifted toward focused coding to facilitate thematic confirmation. See Table 1 for a sample protocol analysis.

Findings and discussion

A total of 12 pharmacists participated in this study; demographic information is provided in Table 2. Each interview lasted between 30 and 45 minutes, with the majority of time spent on case study discussions.

Across all participants, there was significant reluctance to make an independent decision and a strong, expressed desire to find a "happily ever after" ending to each case, in which the

TABLE 1 Protocol analysis (example): Case 1 (Don and Sarah Hill)

Speaker	Transcript	Protocol analysis	Coding/theme
Participant	Well, I guess the thing is, I don't think that they would tell me right away that they aren't going to administer the medication to the kids. . . . I don't think I would make another appointment with them because I don't think they'd come back.		
Interviewer	You'd be kind of realistic about it.	Script analysis (summarizing)	
Participant	I would say, no, I understand your beliefs. But just so that you know (it's) yadda yadda yadda. . . . If you come on too strong they won't call you. . . . So I'd rather be there as an information-giver as opposed to somebody who's going to be scolding them saying they're doing a bad job.		Building a relationship Pharmacist as educator, not decision maker
Interviewer	So building rapport and a relationship . . .	Assertional analysis (paraphrasing, suggesting category or label)	
Participant	Yeah . . . I wouldn't want some stranger telling me that I'm being a bad parent because I'm following a belief that I've always had. So I'm not one to judge. I guess even at entry I would still fill it anyway in hopes that after I fill it at least the medications will be in their house. And if they choose to do it or if they choose not to do it, then that's their decision. But at least having it close to them gives them a higher chance of using it. If I don't fill it at all, then there's no chance of them using the medication.		Avoiding conflict

TABLE 2 Demographic profile of participants ($N = 12$)*

Age, mean (range)	**50.2 years (32-70 years)**
Sex	8 female, 4 male
Duration of practice experience, mean (range)	25.5 years (8-45 years)
Location of practice	8 urban, 4 suburban

*All participants were community pharmacists in Ontario with a minimum of 3 years of work experience in the Greater Toronto Area.

pharmacist does not come into any conflict with the patients involved and everyone agrees on a course of action. Where conflict was inevitable, there was a strong desire to pass the responsibility on to a "higher" authority (e.g., a regulatory body, an employer, a physician) rather than accept the responsibility and burden of managing the conflict and negotiating some kind of acceptable (if not satisfactory) resolution. The data analysis process resulted in identification of 3 specific reasoning/problem-solving tactics that pharmacists relied on to manage their emotional discomfort or cognitive dissonance with the lack of a "happily ever after" ending to each case: 1) educating the patient or building a relationship with the patient as a means of ingratiation; 2) seeking advice from or deferring ultimate responsibility for decision-making to another more powerful professional (e.g., physician or regulator); and 3) seeking to manage conflict by assuming a somewhat helpless "I'm just following the rules" approach.

TABLE 3 Sample transcript excerpts and themes/codes: Case 1 (Don and Sarah Hill)

Transcript excerpt (participant's statements)	Theme/code
To be honest, I'd have to look into this. . . . I don't think it would be our place to call the third-party plan. I don't know if it's . . . patients can do what they choose to do. Who am I to tell them what's right and what's wrong?	Deferring to others Relationship-building
I wouldn't even know who to call to ask about this. Obviously start with the College. But they're not going to know for sure. This is more . . . you just end up with an ethical situation. . . . You'd have to go to the College.	Seeking advice Deferring to others (regulator)
I'd try to let Don understand the . . . I'd educate him so he knows what he is doing. . . . Then he can make his choice for himself.	Education
I think another step would have to be taken here. The doctor is under the impression they are filling the medications. I think the doctor has the right to know that they're not using the medication. . . . So I think I would also have to involve the doctor.	Deferring to others (physician)
Am I allowed to call a third-party plan, who is paying for the medication or the doctor, to talk to them about the drug habits of their clients? But I still think there's some confidentiality here.	Rule-following
Well, if I explain it to them correctly, you know, in a way they understand, so they get the consequences of their decisions, that should change their minds.	Education

The data suggest that community pharmacists in this study may have conflicting beliefs between their views of themselves as professionals and as business people (even if they were employee pharmacists). A consistent theme of justification involved rationales such as "you don't want to annoy customers or they won't come back" or "Well, if I don't do this because of some ethical concern, they will just go to another pharmacy anyway."

In both case studies, all participants indicated at some point that they would reach the limits of what they could legally do as pharmacists and consequently the situation would have to unfold as it was meant to, in a somewhat fatalistic manner. When the interviewer pointed out that not making a decision was actually a decision of sorts, many participants expressed discomfort and defensiveness: "Everyone has to have their own decisions, I'm a pharmacist, I'm not here to judge. . . . I will tell them the consequence of the medication not being taken and then it is up to them."

Pharmacists in this study consistently demonstrated 3 specific decisional techniques to manage clinical complexity and ambiguity and their own cognitive dissonance (Table 3):

Relationship-building/education

All 12 participants in this study began with, strongly emphasized and tenaciously clung to the notion that "If I explain it to them, they will do the right thing." This belief that, given enough information, people would ultimately make the correct decision was the dominant theme of the study. It also informed pharmacists' desire to avoid conflict or disagreement at all costs, as this could interfere with the acceptance of education. Several participants explicitly reframed their understanding of "responsibility": Instead of focusing on best possible clinical outcome, participants defined responsibility as doing the best possible job of educating patients to make their own decisions. As noted by one participant, "My job is to explain the facts to them, right? Educate the patient at the same time so, you know, maybe make myself feel a little better?" Another participant indicated (speaking about Case 1), "It's their choice to come to me. It's their choice to go to somebody else and just get no education or whatever. . . . This is 100% the parent's decision. I will give them all the information but I can't get involved. . . . It's not my decision to force them to do something."

Seeking advice/deferring to others

In an attempt to manage the cognitive dissonance triggered by these challenging cases, all participants opted for a decision-making technique to diffuse or distribute responsibility among other

organizations or professionals. Referring to a physician, a regulatory body, an employer or some other "higher" authority was a frequent decision that was made, rather than addressing the case/situation directly and independently and assuming professional responsibility for the outcome. This was particularly important for many participants as a way of avoiding direct conflict with the patient. Deferring to a higher authority provided a convenient vehicle for plausibly claiming "it's not my fault." One participant noted, "Yeah, I'd probably go and see what they [the regulatory body] would recommend I do because, I mean, they're the licensing body, right? I know that actions that I take can make me lose my license so it's very important that I follow the law and I just don't fly off by emotion." Another participant stated: "Well, this is really the doctor's call, not mine. . . . I mean they are the doctor's patients even if they are my customers."

Rule-following/strict interpretation of rules

When the interviewer pressed participants about deferring to others and attempted to redirect the discussion toward individual responsibility for decision-making, most participants expressed a strong need to undertake further research into legal/technical requirements. Again in the name of conflict avoidance and maintaining good patient-pharmacist relationships, the participants in this study expressed a strong need for legalistic "cover" for their decisions as well as a strong belief that, somewhere, there was a rule, regulation, policy or guideline that would provide the answer to a complex problem. The need to adhere to the letter of the law (rather than its intent or spirit) was challenging in both cases, particularly since issues of patient confidentiality requiring contextual interpretation were so prominent. Participants in this study expressed unwillingness to interpret relevant policy, legislation or regulations within situational contexts and instead sought certainty, specificity and clarity in regulation, even if no such clarity actually existed. As one participant noted, "Well, I chose to be a pharmacist—I have to follow those rules. . . . If I join the team I've got to follow those rules or step out of the team, right? So it means I have to respect the patient's confidentiality even if the consequences are dire." Another participant noted, "I definitely can't go and talk with (Don Hill's employer) or the doctor if they've asked me not to. . . . That's, you know, their right, confidential, you'd be passing a line, even if it was the right thing to do."

Management of cognitive dissonance—the desire to still appear to be "nice" and "helpful" even while simultaneously knowing the right thing to do may bring you into conflict with the patient—was an overarching theme of this study. When taking responsibility involves potential interpersonal conflict and negative personal judgments from patients, pharmacists in this study demonstrated a variety of contorted problem-solving and decision-making strategies to foster unrealistic "happily ever after" endings, even though the cases were constructed in a way so as to preclude such endings.

Of interest was a common theme across most interviews related to the balance between business interests and professional responsibilities. Most of the participants used, as part of their justification process for allowing the Hills (Case 1) to make their own choices, a version of the following quotation from one participant: "If you come on too strong, they won't call you back. . . . They're just going to go somewhere else and then we lose the business."

Despite the fact that none of the pharmacists in this study were actually owners of their pharmacies, this concern for lost business opportunities was repeatedly cited as a rationale or justification for not getting overly involved in the situation. When pressed on this point by the interviewer, these participants acknowledged the tension between professional responsibilities and business self-interest and moved to other rationales/justifications instead. Interestingly, there appeared to be a pattern of naive justification and/or excuse-making demonstrated by most participants in this study: the first line of reasoning (and defence against actual decision-making) was to provide education and in the process build a strong relationship. When asked to expand on the value of this approach, most participants indicated that they believed that high-quality education could trump ignorance or unawareness.

Findings from this study appear to align with recent research examining responsibility-taking in health care. As noted by Daker-White and colleagues,[19] effective face-to-face communication between patients and health care professionals is essential to quality care; deferring responsibility to others or believing another more powerful professional will "fix" a problem can be detrimental to patient safety. Recent work by Rosenthal et al.[20,21] examining relationships between personality traits and pharmacist

performance within the research trial setting also suggests that personality traits—including self-efficacy and self-confidence—may play an important role in how pharmacists approach adoption of new scopes of practice related to clinical decision-making and responsibility. The behaviours demonstrated by pharmacists in this study suggest opportunities for educators to support students and practitioners in enhancing the self-confidence of pharmacists to better manage conflict and informational ambiguity in clinical decision-making.

Because this is a preliminary exploratory study, caution must be exercised in applying findings too broadly. These findings cannot be seen as being representative of community pharmacists everywhere. As a first step in better understanding decision-making in complex situations, this study has highlighted important findings for the profession and raises further questions about the ways in which pharmacists frame "responsibility," "certainty" and decision-making in ambiguous cases. Further work must be undertaken to better understand the barriers and facilitators to independent and confident decision-making among community pharmacists. The think-aloud method used in this study appears well suited for this type of research.

Conclusion

This exploratory study identified management of cognitive dissonance as a major factor in clinical decision-making among community pharmacists. Stated another way, pharmacists in this study demonstrated decision-making avoidance related to professional responsibility for outcomes. Reconciling their clinical responsibilities with their personal need to be "liked" and "nice" resulted in these pharmacists relying heavily on 3 decision-making strategies: relationship-building and education, deferral to others and legalistic interpretation of rules. This study highlights opportunities for educators and employers to consider new ways of preparing pharmacists to assume responsibility for their decisions or, in some cases, their unwillingness to make decisions. ■

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