

APPENDIX 1. Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

Domain 1: Research Team and Reflexivity

1. Which authors conducted the interview or focus group?
David Poon conducted the interviews over the phone with each participant.

2. What were the researchers' credentials?
David Poon, Michael Legal, Louise Lau, Harkaryn Bagri, and Karen Dahri were all pharmacists.

3. What was their occupation at the time of the study?
David Poon was a pharmacy resident for Lower Mainland Pharmacy Services.

Louise Lau and Harkaryn Bagri were clinical pharmacists working at Vancouver General Hospital and Surrey Memorial Hospital, respectively.

Karen Dahri was an assistant professor (partner) at the University of British Columbia Faculty of Pharmaceutical Sciences and a clinical pharmacy and research specialist at Vancouver General Hospital.

Michael Legal was a clinical manager at St. Paul's Hospital.

4. Was the researcher male or female?
David Poon and Michael Legal were males. Louise Lau, Harkaryn Bagri, and Karen Dahri were females.

5. What experience or training did the researcher have?
Michael Legal and Karen Dahri were experienced researchers with numerous publications in the past in qualitative research.

Louise Lau and Harkaryn Bagri were new researchers in the realm of qualitative research and drug-drug interactions. David Poon had no prior experience in qualitative research.

6. Was a relationship established prior to study commencement?
The authors did not know any of the participants prior to the study.

7. What did the participants know about the researcher?
The participants knew it was a team of pharmacists who were conducting the study.

8. What characteristics were reported about the interviewer/facilitator?
David Poon had no prior knowledge of the qualitative research about drug interactions.
The other researchers had published work on drug interactions in prior studies.

Domain 2: Study Design

9. What methodological orientation was stated to underpin the study?
Data were analyzed using grounded therapy.

10. How were participants selected?
Participants were recruited using convenience sampling. Participants were selected if they spoke English and were willing to participate in the study.

11. How were participants approached?
Recruitment posters were put in the heart function and renal transplant ambulatory clinics. Interested participants would contact the respective clinic pharmacist for more information about the study. Participants were approached by the renal transplant pharmacist. The renal transplant pharmacist approached 1 participant outside of their clinic and recruited them into the study.

12. How many participants were in the study?
7 participants were included in the study.

13. How many people refused to participate or dropped out?
There were no participants that dropped out of the study.

14. Where were the data collected?
Data collection was done over the phone.

15. Was anyone else present besides the participants and researchers?
The interviews were conducted with only the researcher and the participant. There was no one else present at the time of the interview.

16. What are the important characteristics of the sample?
Participants were from the heart function clinic or renal transplant pharmacist or recruited through professional interactions. The renal transplant pharmacist recruited stable renal transplant recipients who were transplanted within the past 3 months. Interested participants were required to speak English, which was necessary for the interview.

17. Were questions, prompts, guides provided by the authors? Was it pilot tested?
The interview consisted of open-ended questions to avoid leading questions. There were no prompts created. The questions were not pilot tested but were shared with the ambulatory clinic pharmacists. There were no changes made to the set of questions following the ambulatory clinic pharmacists' review.

Appendix to: Poon D, Legal M, Lau L, Bagri H, Dahri K. Ambulatory heart function and transplant patients' perceptions of drug-drug interactions: a qualitative study. *Can J Hosp Pharm.* 2022;75(2):71-8.

18. Were repeat interviews carried out?

There were no repeat or follow-up interviews.

19. Did the research use audio or visual recording to collect the data?

The interviews were audio-recorded.

20. Were field notes made during and/or after the interview or focus group?

Field notes were not made during the interviews.

21. What was the duration of the interviews or focus group?

The interviews ranged from approximately 20 minutes to 30 minutes in length.

22. Was data saturation discussed?

Data saturation was achieved and there were no new emergent themes following the last interviews.

23. Were transcripts returned to participants for comment and/or correction?

Transcripts were not returned to the participants.

Domain 3: Analysis and Findings

24. How many data coders coded the data?

1 researcher coded the data.

25. Did authors provide a description of the coding tree?

No.

26. Were themes identified in advance or derived from the data?

Themes were derived from the data.

27. What software, if applicable, was used to manage the data?

NVivo 12 Pro (Version 12.6.0.959) was used to manage the data.

28. Did participants provide feedback on the findings?

Participants did not provide any feedback.

29. Were participant quotations presented to illustrate the themes / findings?

Quotations in the results section were derived from the participants transcript. Text was transcribed verbatim from the audio recordings.

30. Was there consistency between the data presented and the findings?

Yes, there was consistency between the data presented and the findings.

31. Were major themes clearly presented in the findings?

3 key themes were identified in the study and presented in the manuscript. All of the themes were discussed in the results section.

32. Is there a description of diverse cases or discussion of minor themes?

There were not any discussions about any minor themes.

APPENDIX 2. Questionnaire to collect baseline information and interview questions.

a) Baseline Characteristics Questionnaire

1. What is your age?
2. What is your gender?
 - Male
 - Female
 - Prefer not to answer
3. What is the main language that you speak?
 - English
 - Other (please specify)
4. Do you speak any other additional languages?
5. What is the highest level of education you have completed?
 - High school
 - Undergraduate
 - Graduate
 - Other(s) (please specify)
 - Prefer not to answer
6. What is your current occupation?
7. What is your primary medical condition?
8. What are your other medical conditions?
9. How many prescribed medications do you currently take?
10. How many non-prescription medications do you currently take?
11. On a scale of 1–5 below, circle where you would rate yourself in terms of understanding your own medications? 1 = very low; 3 = average; 5 = very good
1 2 3 4 5
12. In your own words define a drug interaction.

b) Interview Questions

Patients' perspectives of drug interactions:

1. What concerns you about drug interactions?
2. What would you consider to be a minor, moderate, and severe drug interaction?
3. If you experienced a drug interaction before, how has that affected you?

Health care professional's responsibilities in managing drug interactions:

4. Who should be responsible in managing your drug interactions?
5. How should your doctor, pharmacist, nurse, or other health care provider manage your drug interactions?

Patient medication information:

6. What factors are important to you when it comes to understanding your medications?
7. What are barriers that prevent you from accessing medication information?

Communicating medication information:

8. How should medication information be communicated to you?
9. What can a doctor, pharmacist, nurse, or other health care provider do to help you better understand your medications?

APPENDIX 3. List of themes, categories, codes, and quotations from study participants.

Part 1 of 5

Theme and Categories ^a	Codes	Quotations
Theme: Patients have an incomplete understanding of DDIs		
Most patients were unable to accurately define a DDI (<i>n</i> = 5)	Side effects	"I get side effects that I believe from the drug interaction of gastroenterology." (Participant 1)
	Alters another drug	"Okay, so I would define a drug interaction as when the effects of one drug interferes with the effects of another drug." (Participant 3)
		"A drug interaction ... the effects of one medication might have on the other. Or the, how one medication might amplify the effects of another medication." (Participant 7)
	Different effect	"It's where one or more combined gives a different effect." (Participant 2)
	Consequences	"To me that would be where I'm taking a number of different drugs and they have an unexpected consequence because they interacted or reacted with one another in a unexpected manner, that my doctor or pharmacist wouldn't, would not have expected." (Participant 4)
		"My understanding of it is that where drugs that have conflicting properties are prescribed or taken at the same time. So that, one ... the interaction between the two of them is detrimental to the patient." (Participant 5)
"Drug interaction is, could possibly fatal or harmful to patients." (Participant 6)		
Patients are unclear if they experienced a DDI or not (<i>n</i> = 4)	Unsure of DDI	"Well I don't know what interaction if any is causing it or if it's something totally separate." (Participant 1)
		"I don't know if I ever had a severe or bad drug inter-reaction." (Participant 2)
		"Yeah so I don't know if it would count as a drug interaction where apparently one of the medications I take or perhaps it is the condition itself where you are, are low iron because your heart is not functioning well ..." (Participant 3)
	Bad DDI	"I think I had a drug ... I'm not positive if drug interaction, but I was taking allopurinol and candesartan when my kidney function was declining, and I had quite a bit of rash, and some changes in my blood work." (Participant 7)
		"Like I'm going to fall over and dizzy. The result being I can only take very small doses of any of the medications because of what I believe is an interaction." (Participant 3)
		Never experienced DDI
"I haven't, sorry, I had some mistakes made on dispense dispensing [sic] of drugs, but I don't believe I have had an interaction as we've been defining it through for this study." (Participant 5)		
		"I never had been." (Participant 6)

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Theme and Categories ^a	Codes	Quotations
Theme: Patients have an incomplete understanding of DDIs (continued)		
Patients are concerned about gastrointestinal and central nervous system side effects, which they believe are caused by minor and moderate DDIs (<i>n</i> = 7)	Minor side effects	"I get side effects that I believe from the drug interaction of gastroenterology ... I'm more concerned about some of the side effects which yenko, directly affect my everyday living." (Participant 1)
		"... And umm lowest level will probably be minor nausea or tiredness." (Participant 2)
		"... minor might be like an inconvenience where I don't know, like, that your quality of life reduced. Like it may, the drug may, the interaction of the drugs may affect some daily living activity, to a certain extent like maybe being more tired, little bit more dizzy or a little bit more abdominal cramping or something like that." (Participant 3)
		"A minor one would be one that, that maybe causes a bit of inconvenience, like maybe I wind up with running into the bathroom with diarrhea or an upset stomach or so, something like that." (Participant 4)
		"Minor would be ... you know like maybe diarrhea once or twice, stomach upset." (Participant 5)
		"Let's say for minor, maybe diarrhea." (Participant 6)
		"I mean probably like stomach upset. 'Cause every medication, most medications give me some type of stomach upset." (Participant 7)
	Moderate side effects	"... moderate is leading to maybe severe nausea." (Participant 2)
		"Moderate would be pain that doesn't seem to wanna go away." (Participant 5)
		"Headache, vomiting." (Participant 6)
Unconcerned	"... rash and it wasn't anything that was going to kill me, but it was unpleasant." (Participant 7)	
	"I'm not concerned about drug interactions because umm I believe that I got good pharmacists and doctors that can let me know if there will or not be one." (Participant 2)	
Reduced efficacy	"... moderate one might be where you are actually ill and the, the interaction is reducing the effectiveness of the drugs." (Participant 3)	
Seek help	"A mild one would probably be where I am uncomfortable to the point where I consider maybe going to the hospital or calling the doctor, a doctor to find out what's going on and it lasts you were a couple, three or four days or whatever." (Participant 4)	
Theme: Patients rely on health care professionals to identify and manage DDIs		
Health care professionals should inform patients about DDIs and how they plan to resolve them (<i>n</i> = 3)	Community pharmacy	"Umm, well when I'm reordering my drugs at the pharmacy, they got a list of everything and so does the doctor." (Participant 1)
	Follow-up	"... both at the transplant clinic and my GP, they always make sure that, that I know that I could get to them if there is a problem or I think there's a problem." (Participant 4)
	Informing patients	"They should be able to tell me what is going to inter-react with something else. And by in large, I haven't come across an incidence where either haven't told me. But then, I don't know if I had any incidence of drug inter-reaction either." (Participant 2)
		"I would, I would expect it be explained to me, what the interaction is. And say for example, you know it's an upset stomach and they tell me that you know this, this will be gone by this evening or tomorrow morning and will. Then, I then, I don't think there's, you know then I'm not to sure there's a whole lot that needs to be done. But again, I think ... telling me what happened, the reason it's happened, and what they plan about it that. That should be conveyed to me before anybody does anything, if I'm able to respond to questions." (Participant 5)
		"... they should find an alternative to one or both of the medication ... contact me for sure and let me know if I should stop taking one or both of them." (Participant 7)

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Theme and Categories ^a	Codes	Quotations
Theme: Patients rely on health care professionals to identify and manage DDIs (continued)		
	Responsible provider	"I think first of all the health care professional, whichever one you're dealing with needs to make sure that they have a complete picture ... Again, that case manager role would be ... ideal, but I don't know the best way to communicate it for myself ... I think if, if the GP has the time and resources to act as that overseeing rule 'cause they get all the specialist reports and everything that would work." (Participant 3)
	Unclear	"They communicate to each other." (Participant 6)
Shared responsibility between physicians and pharmacists to manage DDIs (n = 6)	Physician and pharmacist	"The doctors and the pharmacists." (Participant 2)
		"I think, I don't know if it should be the family physician or the specialist. Probably the specialist or the specialist pharmacist in the – in the particular area some people have course overlapping health care areas so that makes it more complicated. I don't have that situation. So, I think, I do not think that the patient can be expected to understand the potential interactions." (Participant 3)
		"I would, I would expect the prescribing physician would know what they are and then secondarily in, in my experiences when I go to the pharmacy now they always look at, at what you've got. And it's my understanding at our pharmacy that they have my profile setup such that if I were to come in with a new prescription and it was going to interfere with one of my existing drugs, the pharmacist would be, would be saying something to me." (Participant 4)
		"... I think it would be primarily on the pharmacist, and secondarily on the physician prescribing ... Well, the physician I hold secondarily responsible only because there's so many medications out there and I'm just not, I'm just not convinced that a doctor would necessarily have on top of his head one interaction with another." (Participant 5)"
		Case manager
	Patient responsibility	"I think the health care professionals, are one of the ... What ideally I would like would be a case manager person which does not exist in our health care ..." (Participant 3)
	Physician role	"I wanna say primarily me, but because I'm, I would not always be aware of a potential interaction. I think it would be primarily on the pharmacist, and secondarily on the physician prescribing." (Participant 5)
	Physician role	"The doctor should be aware of the, all the medication the patient has been taking. So he won't be able or she won't be able to mix and match the medication that interact each other." (Participant 6)
Pharmacists have the pharmacological knowledge to detect DDIs (n = 4)	Knowledge of drugs	"But I still feel that the pharmacist would have more knowledge because it's more specialized in drugs ... There's just too many drugs out there ... Well I think they're the ones that specialize in pharmacology." (Participant 1)
		"The doctors and the pharmacists ... They're the two professions that I recognize to be an expert in the field. As such they should be responsible." (Participant 2)
		"And the pharmacist should know that information because that's what they do. As well, as long as they're versed at, they're filling a new prescription, I would expect that they're looking in my file to see what I'm currently taking. If they have a question, they can call the doctor or talk to me." (Participant 7)
	Clinical decision software systems	"I kinda have some experience with this that once the pharmacist puts in the new prescription or renewal or whatever. Up on their computer screen pops up warning signs that it, that it, it doesn't match up with something else that I may be taking. I'm not sure the doctors would necessarily need to know that I think they also rely on the pharmacist to, to identify that through, through that computer system." (Participant 5)

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Theme and Categories ^a	Codes	Quotations
Theme: Patients rely on health care professionals to identify and manage DDIs (continued)		
Physicians should be responsible for the medications being prescribed (<i>n</i> = 3)	Prescribing	"I would expect the prescribing physician would know what they are..." (Participant 4)
		"The doctor should be aware of the, all the medication the patient has been taking. So he won't be able or she won't be able to mix and match the medication that interact each other." (Participant 6)
		"Well I mean, if I, if I have a family doctor and they're prescribing me medication, they should be very aware of what I'm taking. If they don't, if they're concerned there might be, but don't actually know if there is interaction. They should be looking it up." (Participant 7)
Theme: Patients do not seek information relating to DDIs		
Patients want to know medication side effects when being counselled (<i>n</i> = 5)	Side effects	"... But there's so many different drugs. With 10 different drugs, it's almost impossible ... I immediately check and see the side effects." (Participant 1)
		"... potential or possible side effects that they should be letting the patient know that." (Participant 4)
		"So that, you know in my case I would say that everybody involved in a pretty good job of, you know telling me what my meds are what they're for and anything, any possible side effects." (Participant 5)
		"What factors ... I think I should be. I should ... well number one thing is probably understanding the side effects of the drugs that I'm taking." (Participant 6)
		"So I wanna know why I'm taking it. I wanna know, I mean I have a medical background so I want to understand the pathophysiology of the medication and how it works. And, sort of the doses, time of day, if there's things I should avoid, eating or drinking with it, and if I should be taking it with certain things, times of day for best effectiveness and least amount of side effects." (Participant 7)
	Communication	"Give us full of the information as possible, without going into details that isn't likely to have any relevance... I need to know in laymen terms preferably, what effect they might have on me and what effect they might effect they might have on my condition or conditions." (Participant 2)
		"Well one thing again if they could have more time that would be good if they could be better, more aware themselves of the, of the effects of the interactions and put that into layperson terms." (Participant 3)
		"... open kind of a relationship and especially in languages that the patient can understand ... good communication practices when you're, when you're giving information or giving instructions or talking to someone, you know showing somebody how to do something, you want to make sure that they, that the message has been, has been received properly." (Participant 4)
	Follow-up	"Medication information should be communicated to me. I think it relates to my last answer, that the pharmacist before they hand you the medication, should explain thoroughly about the medication that they're giving you." (Participant 6)
		"And they also should be asking me if I've had any adverse effects, which indeed they do." (Participant 2)

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Theme and Categories ^a	Codes	Quotations
Theme: Patients do not seek information relating to DDIs (continued)		
DDI information were important counselling points for only some patients (<i>n</i> = 2)	DDI during counselling	<p>"Just like for instance, as far as interactions. The likelihood, okay the likelihood of an interaction is like, you know 0.5% or 0.05% or common or you know. What's the prevalence of interactions with these medications, you know." (Participant 3)</p> <p>"Yeah and what I should be, what I should not be taking to interact with my current prescriptions. Like for example with my anti-rejection, I should not be consuming any grapefruit at all or something like that." (Participant 6)</p>
Patients do not identify barriers preventing them from accessing medication information (<i>n</i> = 6)	No barriers	<p>"Umm at this time, there is no barriers." (Participant 1)</p> <p>"I don't know if there any barriers to access the information." (Participant 2)</p> <p>"I have no barriers when I go looking for information." (Participant 4)</p> <p>"I'm not sure there's any barriers ... I don't think I've encountered any barriers because I do get information on any new meds, and in particular after my kidney transplant. I mean again, I got about 6- or 7-page document on my anti-rejection drugs so I know how they work." (Participant 5)</p> <p>"I think one of the barriers is ... with my experience, nothing really. 'Cause most of the time, when I get my prescription, my medication, pharmacist always explains the information attached to the medication I'm taking." (Participant 6)</p>
	Uncertain of barriers	"I don't necessarily think I have that many barriers." (Participant 7)
	Lack of time	"I would imagine one of them, the person who comes to mind is the healthcare professional, whoever is prescribing whatever don't have a lot of time including pharmacist. Pharmacists I find are better at explaining medication to them than others." (Participant 3)
Reliance on using the internet to find supplemental medication information (<i>n</i> = 4)	Information online	<p>"You know, in today's world of technology, as long as you're going to the right places on the internet, there's all kind of information out there ... Well no and if I do, if I go to the internet, like I don't just plug it into the Google thing and see what comes up. I've learned over my many years of health experiences and my most trusted one is the Mayo Clinic and then there's another one that my GP gave me many years ago. I can't remember it – the name of it, but it's, it's in my favourites, and it's a site that the doctors use for medical information, but aside from that I don't go to too many other ones." (Participant 4)</p> <p>"There's, there's information readily available as long as you know where to look on the internet." (Participant 5)</p> <p>"Let's say for example, I'm taking some medication. Let's say for example, I start having some symptoms of, of the side effects and I go to internet, research and let's say if this is what I am experiencing is actually one of the side effects of that certain medication. And at the same time, what could possibly be remedies for it." (Participant 6)</p>
	Uncertainty about online information	<p>"I don't know the information is always correct via the internet." (Participant 2)</p> <p>"Yeah there's huge dangers. That, and that is a huge barrier. I prefer not to use the internet. I just mentioned it 'cause I know it's all out there." (Participant 5)</p> <p>"Well, I mean you have to take, I think of all it with a little bit grain of salt because you can look at. If you put, put one medication in and you pull it up depending on the site you look at there may have slightly varied information." (Participant 7)</p>

DDI = drug–drug interaction, GP = general practitioner.

^aThe *n* value for each category and theme refers to the number of participants (out of 7 participants in total) who contributed relevant comments.

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