


# BMJ Open Protocol for a qualitative study exploring the pharmacist's role in supporting postsecondary students with psychotropic medication management

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## ABSTRACT

**Introduction** Findings from the National College Health Assessment (2019) stated that anxiety and depression are the most prevalent diagnosed mental illnesses among Canadian postsecondary students with one-fifth of students self-reporting a lifetime diagnosis. Psychotropic medications can be an important component of a multifaceted approach to the management and treatment of mental illness and are the most commonly dispensed via community pharmacies. Community pharmacies provide an opportunity for pharmacists to have a prominent role in supporting patients' psychotropic medication management. However, there has been limited exploration of how pharmacists can address patients' psychotropic medication management needs, experiences and opportunities for improvements especially for emerging adults.

**Methods and analysis** This qualitative study will incorporate Thorne's approach to interpretative description. Purposeful snowball sampling will be used to identify students (18–25 years) taking psychotropic medication(s) to manage their mental health. Participants will be interviewed one on one using a semistructured interview guide virtually. Inductive thematic analysis is underway with data analysis being iterative and reflexive using NVivo. Information provided from the interviews will be reviewed and summarised into key themes.

**Ethics and dissemination** This study was approved by the University of Toronto Health Sciences Research Ethics Board (REB #43185). It is expected that there will be a very low risk for mild psychological and social harm for participants as they will have the ability to stop the interview at any time and will be aware of confidentiality. The results from this study will be used to create or adapt healthcare team services including the role of pharmacists within the healthcare ecosystem at the university and contribute to developing the next stage of research to evaluate feasibility and effectiveness of programmes at the university that help postsecondary students to manage psychotropic medication.

## INTRODUCTION

### Pharmacist provided medication management

Drug therapies can be complex. Medication management places an emphasis on

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Semi-structured interviews from an interpretive description approach seek to discover associations, relationships and patterns resulting in an overall thematic description as views on the topic are not known.
- ⇒ Potential participants will be recruited through purposeful snowball sampling where enrolled participants will be asked to share details of the study with their circle which is an effective method to build trust with the researcher and participant(s).
- ⇒ Participation of postsecondary students through one-on-one interviews will help elicit the distinctive views of students on campus, which can be used to improve future student psychotropic medication management uptake and engagement, clinical knowledge, decision-making as well as shape interventions, to better reflect postsecondary students' own concerns and priorities in this area.
- ⇒ This study will focus on emerging adults at one university in one Canadian province, and therefore will not reveal experiences of people receiving care in other healthcare systems or who are living in different cultural societal contexts.
- ⇒ The recruitment process may have difficulty accessing participants due to the stigma of speaking of this topic to an outsider.

managing drug therapies and patient medication safety.<sup>1</sup> Medication management is the process of selecting the right drug for therapy, ensuring the patient prescribed the medication has access to it and is taking it correctly and evaluating the medication's outcome on the patient.<sup>2</sup> As defined by the Institute for Safe Medication Practices,<sup>3</sup> medication management is patient-centred care provided by healthcare teams to optimise safe, effective and appropriate drug therapy. Pharmacists are ideally positioned to provide patient-centred medication management activities.

Pharmacists have expanded their scope of practice in many international jurisdictions<sup>4 5</sup> including Canadian provinces where they take on responsibilities beyond medication dispensing such as adapting prescriptions, prescribing, administering injections and performing medication reviews.<sup>6</sup> Pharmacists help patients achieve positive medication therapy outcomes by providing patient-specific services including: (1) providing information and safety resources for medication use; (2) flagging improper drug selection, inappropriate dosing and drug interactions; (3) reporting adverse drug reactions; (4) following up on patient compliance; (5) refilling prescription reminders and (6) education about medication.<sup>1 7</sup>

### Emerging adulthood: a distinct period of time

As stated by Arnett, the time of life between ages 18 and 25 is a distinct period referred to as 'emerging adulthood'.<sup>8-10</sup> Emerging adulthood is a time when individuals are going through a life transition where they consider themselves too old to be adolescents but not yet fully adults. Emerging adults often explore a variety of possible life directions in healthcare, work, school, worldviews<sup>11 12</sup> and, possibly, medication management. There are many emerging adults who have finished high school and are postsecondary students, that is, those enrolled in university or college,<sup>13</sup> training for a long-term career goal. It is during this period of life that qualities are developed to become self-sufficient and to make independent decisions.<sup>8</sup>

### Managing mental health

Mental health is the state of an individual's psychological and emotional well-being<sup>14</sup> and affects our daily lives.<sup>15</sup> Good mental health allows an individual to feel, think and act in ways that help make life enjoyable while coping with challenges. Mental health can be influenced by life experiences, relationships with others, work/school environments, physical health and the community you live in.<sup>16</sup> Mental illness is characterised by a disturbance brought on by influences listed above and is usually associated with distress or impairment in important areas of functioning such as cognition, emotional regulation or behaviour.<sup>17</sup> There are many different types of mental illnesses. Depression and anxiety disorders often occur during emerging adulthood, as this period of life is a critical window for psychological and social development.<sup>18 19</sup> de Lijster *et al* identified the mean age of onset of anxiety disorders to be 21.3<sup>20</sup> years and Solmi *et al* reported the peak age of onset of depression as 20.5 years.<sup>21</sup> Chronic stress in students brought on by the setting of a postsecondary environment is correlated with negative mental health outcomes.<sup>22</sup> Poor mental health can have an impact on academic performance, substance misuse, relationships, dropping out, engagement in risk behaviours and suicide.<sup>22</sup> Findings from the National College Health Assessment stated that anxiety and depression are the most prevalent diagnosed mental illnesses among Canadian postsecondary students with one-fifth of students

self-reporting a lifetime diagnosis of depression.<sup>23</sup> Intervention in the early stages of onset may provide an opportunity to enhance and support outcomes in postsecondary students.<sup>24</sup> As the onset of mental illnesses, such as anxiety and depression, primarily occur in the age range of postsecondary students, should mental health concerns remain untreated, the risk for enduring mental illness into adulthood increases.<sup>25</sup> Within this transition, attempting to navigate the healthcare system may result in psychotropic medication management being negatively affected with many postsecondary students unable to identify if signs of a problem are present or when professional help is needed.<sup>26-29</sup>

Technology is becoming an important mode of interaction for finding information on health questions or meeting virtually with healthcare providers.<sup>30</sup> The number of postsecondary students seeking health information online is increasing,<sup>30</sup> as is the tendency for users to prefer use of the internet to find health information.<sup>31</sup> Not to mention, there is an abundance of health information available online.<sup>32</sup> Online mental health resources exist, but their effectiveness in response to mental health needs of postsecondary students has not been determined.<sup>33</sup>

### Psychotropic medications and pharmacy support

Psychotropic medications can be important in the treatment of mental illnesses,<sup>34</sup> including anxiety and depression.<sup>35</sup> Despite high accessibility, there has been limited focus on how psychotropic medication management needs of postsecondary students could be addressed by pharmacists as part of the broader community-based healthcare team.<sup>36 37</sup> Going through life changes and transition places postsecondary students in a unique time of life where an emphasis on the promotion of mental health alongside treating the symptoms of mental illness might require specific age-related care.<sup>38 39</sup>

When postsecondary students obtain prescription medication from pharmacies, there are opportunities for the team of pharmacy professionals to support them with their psychotropic medication use and promote mental health. Previous research provides insight into the need for pharmacists to move towards a better approach to connect with, and support, postsecondary students.<sup>39-41</sup> However, there is a research gap in the exploration of relationships among postsecondary students' state of mental health, psychotropic medication management knowledge/needs and pharmacy services.

Postsecondary students may experience limited interactions with pharmacists due to the student's unfamiliarity with the pharmacist's role.<sup>39 40</sup> Students in postsecondary settings may benefit from increased access to medication management and resources for mental health. For the development and introduction of new pharmacy programmes dedicated to mental health, it is critical to understand the perspectives and needs of postsecondary students as pharmacy users.

## Study aim

This study aims to explore what postsecondary students, aged 18–25 years, identify as their psychotropic medication management experiences and needs that may be addressed by pharmacists.

## Research questions

The primary research question is: What experiences do postsecondary students describe with psychotropic medication management and what do they identify as needs? The secondary research questions are: How can pharmacists support postsecondary student psychotropic medication management needs? And how can digital technologies be optimised to help pharmacists support postsecondary student psychotropic medication management needs?

## METHODS AND ANALYSIS

This qualitative study will incorporate Thorne's approach to interpretative description.<sup>42</sup> The interpretative description studies acknowledge reality as socially constructed and that reality involves multiple constructed realities while also recognising that researcher and participant influence one another.<sup>42</sup> Interpretive description studies provide a thematic description of a phenomenon of interest, in this case, psychotropic medication management. In doing so, a semistructured interview guide has been developed to ensure that the value of expressed experiences is recognised. The interpretative description approach is chosen for this study because it seeks to discover associations, relationships and patterns within a phenomenon.<sup>42</sup> This study has followed guidance offered by the Consolidated criteria for Reporting Qualitative research checklist<sup>43</sup> (online supplemental appendix A) for developing the background and methods and will follow checklist guidance for reporting and interpreting findings.

As the study proceeds, patterns and themes will be derived in the analysis phase to generate knowledge on postsecondary students' psychotropic medication management in a report that will be meaningful as a foundational block to the development of practices by pharmacy professionals within a healthcare ecosystem that integrates with other primary healthcare providers. The intent is to uncover knowledge that may be relevant for pharmacist clinical practice and not to develop a formal theory.

## Participants

To be included, participants must currently be:

1. Registered as a postsecondary university student at the participating university.
2. Between 18 and 25 years of age.
3. Have taken psychotropic medication to manage their mental illness in the past 12 months.
4. Currently live in the province where the study is taking place.

In Canada, each province and territory is responsible for their own delivery of healthcare services resulting in differences in healthcare experiences across the country. Therefore, the inclusion criteria include those who are currently living in Ontario.<sup>44</sup> This self-reported information will be gathered through a screening survey to determine if they meet the inclusion criteria once the participant consents to participate in the study. Postsecondary students taking psychotropic medication for something other than mental illness (eg, to manage sleep apnoea) will be excluded.

## Recruitment and consent

Potential participants will be invited through recommendations and outreach by the tricampus student union groups/representatives and through recruitment efforts in collaboration with the campus health ecosystem including the academic pharmacy at the university and the university health centre, where email invitations, social media posts, virtual and physical posters will be disseminated. Through the invitational email or QR code on the posters, interested participants will click the link and consent to being contacted by the researcher. If interested, the potential participant will provide informed consent through a Research Electronic Data Capture (REDCap) link. REDCap is a secure, web-based software platform designed to support data capture for survey research studies. All consent forms will be downloaded from REDCap as a PDF file and kept on file on a secure, password-protected desktop computer. Consenting students will complete the screening questionnaire and if they do not meet the inclusion criteria, they will receive an email notification stating they are not eligible for this study. If the consenting participant meets the inclusion criteria as provided in the screening questionnaire, they will be contacted through email and given the choice of an online interview or a phone interview that will be conducted on Microsoft Teams based on their preference. If the participant chooses an online or phone interview, consent for audio recording will be obtained through RedCap. If they choose to participate in an online interview, the participant will have the option to consent for video recording. An interview will then be scheduled at a time that is suitable for the participant. At the start of the interview, the consent form will be reviewed, the participant will be asked if they have any questions, then the participant will complete a short demographic survey before beginning the recording. The demographic survey's purpose is to determine variability in the sample. Once that is complete, the interview will begin.

## Sampling

It is expected that a total of 20–25 interviews will be conducted. This study will be an in-depth exploration of postsecondary students' experience with psychotropic medication management. Due to the subjective experiential nature of this study, 20–25 individuals who have experience with this and are willing to share their experience

are expected to provide enough data to draw themes.<sup>42</sup> A process of ongoing reflection and interpretation of the data will occur as the study proceeds, to identify a point when data saturation is achieved, meaning no new information or themes have emerged from the interviews but rather there is repetition of the same comments in the transcripts again and again.<sup>45</sup> An approximation of sample size is necessary for planning while it is important to note that the need for additional participants will be regularly evaluated during the research process.<sup>42</sup> Participants will have a shared experience (psychotropic medication management) but vary in characteristics and in their individual experiences.

This study will use a purposeful snowball sampling method to recruit participants which is a good approach when seeking access to a specific population. Snowball sampling is a type of convenience sampling method that includes research participants who are readily available to the researcher. In snowball sampling, the existing participants help recruit future participants by spreading the word about the study to their social circles.<sup>46 47</sup> This method is most effective when particular members of society are not easily accessible. After the first few interviews, the participants will be asked to share the study details with others who they think might be interested and the snowball effect will continue until data saturation. This type of sampling is an effective method for this study, as it may be difficult to recruit postsecondary students taking psychotropic medication to manage their mental health due to the stigma of speaking about this topic openly to an outsider.<sup>27</sup> This method will build trust with participants who can tell others in their circle about the relevance of this study.

### Data collection

An online or phone interview will be scheduled at a time that is convenient for the participant and will be approximately 30 min in length. A semistructured interview guide has been developed (online supplemental appendix B) and includes broad questions with probes. The interview guide was pilot tested with three students which informed the final semistructured interview guide. One-on-one interviews will be conducted on Microsoft Teams to provide the participant flexibility with scheduling and the ability to conduct an interview in the comfort of a setting where they are at ease. The audio (and video if patient consents for online interview) of the interviews will be recorded, anonymised and transcribed verbatim using the automatic transcription tool in Teams. The automatic transcript generated by Teams will then be reviewed and cleaned by the researcher. Close attention will be attributed to the early interviews conducted to assess what has worked well and what has worked less well.

The following criteria as suggested by Green and Thorogood were used when phrasing the qualitative interview questions for the semistructured interview guide<sup>48</sup>:

- ▶ Avoid asking respondents the research question(s).

- ▶ Use every day rather than technical and professional vocabulary.
- ▶ Check that questions do not lead the participant by suggesting a preferred answer.
- ▶ Be careful of questions which imply a judgement.
- ▶ Use open questions in preference to closed.
- ▶ Ask about concrete experiences rather than abstract.

### Data analysis

The analysis will follow the process described by Braun and Clarke for inductive thematic analysis.<sup>49</sup> Thematic analysis is a useful analysis tool and well suited for this study because it allows the researcher to present qualitative data in a way that can be accessible to those who are involved in non-academic areas such as policy or practice. A benefit of thematic analysis is its flexibility as a method for identifying, analysing and reporting themes within data. A theme in this context is defined as capturing something important about the data in relation to the research question representing patterned response or meaning within the data set.<sup>49</sup> Inductive analysis is appropriate for this study as it will involve coding the data without using or trying to fit into a prior coding frame, rather the codes will be data driven. The research topic under investigation is under researched and the participants' views on the topic are not known. Therefore, rich thematic analysis of the entire data set will result in an accurate description. This analysis method was chosen because the data is not intended to produce a theory but rather to describe patterns, report experiences, meanings and the reality of participants.

As outlined by Braun and Clarke, the analysis will involve six steps<sup>49</sup>: (1) familiarising oneself with the data through repeated reading; (2) generating initial codes that appear interesting; (3) searching for themes by thinking about the relationship between codes; (4) reviewing themes to confirm the themes work in relation to the data set; (5) naming themes and (6) producing the report which will be identification of themes and patterns in the data set.

Data analysis will begin during the data collection phase. Time will be built in to complete 2–3 interviews a week with the following week used to transcribe and analyse data, make any changes to the semistructured interview guide and go back into the field. Data analysis will be iterative and reflexive. An audit trail will be maintained to document decisions made through the analysis process. Analyses will be aided with the use of NVivo, a software programme used for technical coding and sorting data in qualitative research.

### ETHICS AND DISSEMINATION

This study has received approval from the University of Toronto Health Sciences Research Ethics Board (REB #43185). The study population is comprised of postsecondary students and thereby is considered a vulnerable population as they often explore a variety of possible independent life directions and responsibility

transitioning from youth to young adults. However, there is a very low risk for mild psychological and social harm for those participating in the interview as all participants will be aware of the identity of those in attendance (just interviewer and participant), the ability to stop at any time, and the confidentiality of their thoughts provided. Some people may feel uncomfortable sharing their opinions; however, a participant will be informed that they do not need to answer any questions that they do not want to answer. Respecting a participant's right to decide whether to participate in the research will be outlined in the informed consent process. On the consent form, the participant will be accurately informed about the aim of the research, benefits and risks, data confidentiality and voluntary participation. The consent process will continue at the start of the interview by going through the parameters of confidentiality and consent while allowing the participant to ask any questions they may have. The participant will be made aware that if they are uncomfortable to answer a question, they may simply say 'pass'. If at any point in the interview, the participant feels uncomfortable or it is evident that the participant is in distress, the recording will be stopped. Mental health resources at the university will be shared with all participants at the conclusion of the interview. The participant can stop the interview at any time if they are uncomfortable. No university faculty members will be involved in promoting the study to eliminate conflict of interest in perception of any direct benefit to grades/connections. Postsecondary students who participate in the interview will receive a CAD\$20 coffee shop gift card as an appreciation for their time to participate in the study. Participants can withdraw from the study at any time up until their data is included in the aggregate analysis. After that time, it will be too difficult to remove data from the synthesised analysis. However, if a participant has withdrawn then none of their individual quotes will be uniquely highlighted in study reports. Each participant will be assigned a unique study code prior to the interview. The code will be used in data analysis to protect the name of the participant. A master code list linking participant names to interview transcriptions/recordings will be encrypted and stored on a password-protected computer housed on the university's secure server. Data resulting from this study will be publicly accessible by way of academic publications and presentations, as well as disseminated through university appropriate channels such as the InLight Student Mental Health Research Initiative. The results will also be disseminated through pharmacy practice research networks such as the Ontario Pharmacy Evidence Network so that pharmacy professionals can learn the results of the work and further pharmacy practice research. This is to ensure future researchers can find and use data uncovered by this study to inform further research in this area.

Study findings aim to increase understanding about how pharmacists within the primary healthcare ecosystem can care for students' mental health during the time of transition to adulthood. New programmes may be

developed, evaluated and if beneficial, scaled up across pharmacy and other primary healthcare settings. The results will aim to summarise current student needs with a supporting action plan on how pharmacy can implement programmes/resources/educational modules to address specific mental health medication management needs. This study aligns with the academic pharmacy's mission to advance innovation in medication management to help students enhance their health.<sup>50</sup> Output of the results may (or aim to) serve to improve student mental health and wellness on campus by uncovering student needs in this area of psychotropic medication management. Linking with the academic pharmacy at the university is not only beneficial to introducing student specific programmes on campus but also has potential to have an impact in the global sphere through publication, presentations and online distribution of results on their website and stakeholder groups. The results will be written into a research paper and form an action plan identifying specific self-declared needs and how to address them.

#### PATIENT AND PUBLIC INVOLVEMENT STATEMENT

In 2018, initial persona-scenario workshops were conducted with six stakeholder groups: university students (users of the clinic), pharmacy students (learners in the clinic), pharmacy faculty (healthcare providers and educators in the clinic), external pharmacists (stakeholders focusing on working collaboratively across pharmacy settings), pharmacy technicians (healthcare providers in the clinic) and university health centre healthcare providers and staff at the university. Participants in each individual stakeholder group were asked to create a detailed and realistic persona character that represented their stakeholder group and have that persona experience five aspects of the pharmacy: information technology, intraprofessional collaboration, inter-professional collaboration, patient centred care and an iterative learning system.<sup>51</sup>

These workshops provided initial qualitative data on services, technologies and student involvement in the pharmacy. Students envisioned the academic pharmacy to offer more streamlined and focused patient care relevant to the university student population; for example, students identified the topic of mental health and medication management as a top priority. The group further expressed interest in counselling services that address and expand knowledge of medication and usage. Students felt it was important to understand their medication and not just 'receive' it. The students in this group affirmed the value of wellness and mental health services/programmes while highlighting that receiving the appropriate service at the right time is vital.

In addition to the workshops conducted, patients as students will act as partners throughout this study, meaning they will guide aspects of planning and conducting research. This partnership began at the proposal stage where student community patients met

with the researcher virtually to discuss the goal of the study and gathered information through a survey on needs. Three student patients commented on and helped develop research materials including the study poster and interview guide. The patient partnership will continue in the recruitment phase where many student groups across campus will help shape wording of the recruitment materials to reduce potential for stigma and reframe the goal of the study as a movement towards well-being support. Student partners will help put up study details in the residence places and send out details to their email listservs and social media student groups. As the study proceeds, students will continue to be involved in providing their experience through interviews and then providing input in the final written results to capture the full scope of the student experience and ensure results reflect that. This study follows the engagement values and principles of the Canadian Institutes of Health Research which include inclusiveness, support, mutual respect and cobuilding.<sup>52</sup>

**Contributors** AM responsible for writing protocol, data collection, data analysis and ongoing research activities. LD responsible for providing direction and edits on protocol and ongoing research. BAS and KC responsible for providing guidance, comments and edits on protocol and ongoing research.

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**Competing interests** AM acknowledges her position as a woman currently studying at the university. There is a possibility the interviewer may encounter a participant who are known prior to the interview. If there is a participant with whom the interviewer shares a relationship, that participant will be excluded from the study to remove biases.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods and analysis section for further details.

**Patient consent for publication** Not applicable.

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#### REFERENCES

- Hammond RW, Schwartz AH, Campbell MJ, et al. American college of clinical Pharmacy. collaborative drug therapy management by Pharmacists—2003. *Pharmacotherapy* 2003;23:1210–25.
- Orwig D, Brandt N, Gruber-Baldini AL. Medication management assessment for older adults in the community. *Gerontologist* 2006;46:661–8.
- Institute for safe medication practices Canada: medication management. 2022. Available: <https://www.ismp-canada.org/definitions.htm#:~:text=Medication%20Management%3A,and%20their%20health%20care%20teams>
- NHS England. Clinical pharmacists. 2022. Available: <https://www.england.nhs.uk/gp/expanding-our-workforce/cp-gp/>
- The Pharmacy Guild of Australia. Scope of practice of community pharmacists. 2022. Available: [https://www.guild.org.au/\\_data/assets/pdf\\_file/0023/106178/Scope-of-Practice-of-Community-Pharmacists.pdf](https://www.guild.org.au/_data/assets/pdf_file/0023/106178/Scope-of-Practice-of-Community-Pharmacists.pdf)
- Canadian Pharmacists Association. Professional practice & advocacy: scope of practice. 2022. Available: <https://www.pharmacists.ca/advocacy/scope-of-practice/>
- Ontario College of Pharmacists. Practice and education: expanded scope of practice. 2022. Available: <https://www.ocpinfo.com/practice-education/expanded-scope-of-practice/>
- Arnett JJ. Emerging adulthood. A theory of development from the late teens through the twenties. *Am Psychol* 2000;55:469–80.
- Arnett JJ. *Adolescence and emerging adulthood: A cultural approach* 2nd ed. Upper Saddle River, New Jersey: Pearson, 2004.
- Arnett JJ. *Emerging adulthood: The winding road from the late teens through the twenties*. New York: Oxford University Press, 2004.
- Erikson EH. *Identity: Youth and crisis*. New York: Norton, 1968.
- Rindfuss RR. The young adult years: diversity, structural change, and fertility. *Demography* 1991;28:493–512.
- Source: government of Canada: education in Canada: post-secondary. 2022. Available: <https://www.canada.ca/en/immigration-refugees-citizenship/services/new-immigrants/new-life-canada/education/types-school/post-secondary.html>
- Canadian mental health Association: fast facts about mental health and mental illness. 2016. Available: <https://cmha.ca/brochure/fast-facts-about-mental-illness/>
- APA. *Diagnostic and statistical manual of mental disorders (3rd Edition) (DSM-III)*. Washington DC: American Psychiatric Association, 1980.
- Tudor K. *Mental health promotion: paradigms and practice* 1st ed. Routledge, 1996: 53–85.
- World Health Organization. Mental disorders. 2022. Available: <https://www.who.int/news-room/fact-sheets/detail/mental-disorders#:~:text=A%20mental%20disorder%20is%20characterized,different%20of%20mental%20disorders>
- Patten SB. Age of onset of mental disorders. *Can J Psychiatry* 2017;62:235–6.
- Kessler RC, Amminger GP, Aguilar-Gaxiola S, et al. Age of onset of mental disorders: a review of recent literature. *Curr Opin Psychiatry* 2007;20:359–64.
- de Lijster JM, Dierckx B, Utens E, et al. The age of onset of anxiety disorders: a meta-analysis. *Can J Psychiatry* 2017;62:237–46.
- Solmi M, Radua J, Olivola M, et al. Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 Epidemiological studies. *Mol Psychiatry* 2022;27:281–95.
- Linden B, Stuart H. Post-secondary stress and mental well-being: A Scoping review of the academic literature. *Canadian Journal of Community Mental Health* 2020;39:1–32.
- American college health Association – national college health assessment II: Canadian reference group data report. 2019. Available: [https://www.acha.org/NCHA/ACHA-NCHA\\_Data/Publications\\_and\\_Reports/NCHA/Data/Reports\\_ACHA-NCHAIIC.aspx](https://www.acha.org/NCHA/ACHA-NCHA_Data/Publications_and_Reports/NCHA/Data/Reports_ACHA-NCHAIIC.aspx)
- Catania LS, Hetrick SE, Newman LK, et al. Prevention and early intervention for mental health problems in 0–25 year olds: are there evidence-based models of care. *Advances in Mental Health* 2011;10:6–19.
- Hickie I, Groom G, Davenport T. *Investing in Australia's Future: The Personal, Social and Economic Benefits of Good Mental Health*. Canberra: Mental Health Council of Australia, 2004. Available: [https://mhaustralia.org/sites/default/files/imported/component/rsfiles/mental-health-services/Investing\\_In\\_Australia\\_s\\_Future\\_Full\\_Report\\_.pdf](https://mhaustralia.org/sites/default/files/imported/component/rsfiles/mental-health-services/Investing_In_Australia_s_Future_Full_Report_.pdf)
- Czyz EK, Horwitz AG, Eisenberg D, et al. Self-reported barriers to professional help seeking among college students at elevated risk for suicide. *J Am Coll Health* 2013;61:398–406.
- Rickwood D, Deane FP, Wilson CJ, et al. Young people's help-seeking for mental health problems. *Adv Ment Health* 2005;4:218–51.
- Downs MF, Eisenberg D. Help seeking and treatment use among suicidal college students. *J Am Coll Health* 2012;60:104–14.
- Wiljer D, Abi-Jaoude A, Johnson A, et al. Enhancing self-efficacy for help-seeking among transition-aged youth in Postsecondary settings

- with mental health and/or substance use concerns, using crowd-Sourced online and mobile Technologies: the thought spot protocol. *JMIR Res Protoc* 2016;5:e201.
- 30 Jones S, Fox S. Generations online in 2009. n.d. Available: <http://www.pewinternet.org/Reports/2009/Generations-Online-in-2009.aspx>
- 31 Kwon N, Kim K. Who goes to a library for cancer information in the E-health era? A secondary data analysis of the health information national trends survey (HINTS). *Libr Inf Sci Res* 2009;31:192–200.
- 32 Harris R, Wathen N. If my mother was alive I'd probably have called her." women's search for health information in rural Canada. *Reference & User Services Quartely* 2007;47:67–79.
- 33 Neal DM, Campbell AJ, Williams LY, et al. "I did not realize so many options are available": cognitive authority, emerging adults, and E-mental health. *Library & Information Science Research* 2011;33:25–33.
- 34 Guina J, Merrill B. Benzodiazepines I: Upping the care on Downers: the evidence of risks, benefits and alternatives. *J Clin Med* 2018;7:17.
- 35 National Institute of mental health: mental health medications. 2016. Available: [nimh.nih.gov/health/topics/mental-health-medications/index.shtml](http://nimh.nih.gov/health/topics/mental-health-medications/index.shtml)
- 36 Wheeler A, Fowler J, Hattingh L, et al. Exploring the role of community Pharmacy in supporting mental health consumers. n.d. Available: <http://6cpa.com.au/resources/fifth-agreement-rd/mental-health-project/>
- 37 Rubio-Valera M, Chen TF, O'Reilly CL. New roles for pharmacists in community mental health care: a narrative review. *Int J Environ Res Public Health* 2014;11:10967–90.
- 38 McMillan SS, Stewart V, Wheeler AJ, et al. Medication management in the context of mental illness: an exploratory study of young people living in Australia. *BMC Public Health* 2020;20:1188.
- 39 Acharya L, Jin L, Collins W. College life is stressful today - emerging stressors and depressive symptoms in college students. *J Am Coll Health* 2018;66:655–64.
- 40 Silva SN, Lima MG, Ruas CM. Pharmaceutical interventions in mental health: a review of the literature to support evidence-informed policy making. *Res Social Adm Pharm* 2018;14:891–900.
- 41 McMillan SS, Stapleton H, Stewart V, et al. A qualitative study exploring opportunities for pharmacists to connect with young mental health consumers. *J Am Pharm Assoc (2003)* 2020;60:S23–33.
- 42 Thorne S. *Interpretive Description*. New York, New York: Routledge Publishing, 2008.
- 43 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 44 The Commonwealth fund: International health care system profiles, Canada. 2020. Available: <https://www.commonwealthfund.org/international-health-policy-center/countries/canada>
- 45 Glaser B, Strauss A. *The Discovery of Grounded Theory*. Hawthorne, NY: Aldine Publishing Company, 1967.
- 46 Patton MQ. *Qualitative Research & Evaluation Methods*. London: Sage Publications, 2002.
- 47 Naderifar M, Goli H, Ghaljaie F. Snowball sampling: A purposeful method of sampling in qualitative research. *Strides Dev Med Educ* 2017;14:1–4.
- 48 Green J, Thorogood N. "Chapter 5: In-depth Interviews" in *Qualitative Methods for Health Research* 4th Edition. Washington DC: Sage, 2018.
- 49 Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006;3:77–101.
- 50 Leslie Dan Faculty of Pharmacy, University of Toronto. Discovery Pharmacy: about us. 2022. Available: <https://www.discoverypharmacy.utoronto.ca/about-us>
- 51 Discovery Pharmacy persona-scenario workshop results. Toronto, ON: University of Toronto, 2018.
- 52 Canadian institutes of health research: strategy for patient-oriented research – patient engagement framework. 2019. Available: <https://cibr-irsc.gc.ca/e/48413.html>

**Appendix A – Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist**

No	Item	Guide questions/description	Answer
<b>Domain 1: Research team and reflexivity</b>			
Personal Characteristics			
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group?	A. McCracken
2.	Credentials	What were the researcher's credentials (e.g. PhD, MD)	HBSc
3.	Occupation	What was their occupation at the time of the study?	Research and Education Coordinator
4.	Gender	Was the researcher male or female?	Female
5.	Experience and training	What experience or training does the researcher have?	5+ years of coordinating qualitative and quantitative research.
Relationship with participants			
6.	Relationship established	Was a relationship established prior to study commencement?	No.
7.	Participant knowledge of the interviewer	What did the participants know about the researcher?	Reason for doing the research: to help build a foundational block to help support students with psychotropic medication management on campus
8.	Interviewer characteristics	What characteristics were reported about	Biases.



the  
interviewer/facilitator.

## Domain 2: study design

### Theoretical framework

9.	Methodological orientation and theory	What methodological orientation was stated to underpin the study?	Interpretative description
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### Participant selection

10.	Sampling	How were participants selected?	Snowball sampling
11.	Method of approach	How were participants approached?	Face-to-face, email, social media
12.	Sample size	How many participants were in the study?	20-25
13.	Non-participation	How many people refused to participate or dropped out?	N/A at this stage of study. Will be reported once data collection is complete.

### Setting

14.	Setting of data collection	Where was the data collected?	Leslie Dan Faculty of Pharmacy, University of Toronto and Home
15.	Presence of non-participants	Was anyone else present besides the participants and researchers?	No.
16.	Description of sample	What are the important characteristics of the sample?	Demographic data

### Data Collection

17.	Interview guide	Were questions, prompts, guides provided by the	Yes.
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		authors? Was it pilot tested.	
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A at this time.
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data?	Yes.
20.	Field notes	Were field notes made during and/or after the interview or focus group?	N/A at this time.
21.	Duration	What was the duration of the interviews or focus groups?	30 minutes.
22.	Data saturation	Was data saturation discussed?	Yes.
23.	Transcripts returned		
<b>Domain 3: analysis and findings</b>			
Data analysis			
24.	Number of data coders	How many data coders coded the data?	TBD.
25.	Description of the coding tree	Did authors provide a description of the coding tree?	N/A at this time.
26.	Derivation of themes	Were themes identified in advance or derived from the data?	Derived from the data.
27.	Software	What software, if application was used to manage the data?	NVivo.
28.	Participant checking	Did participants provide feedback on the findings?	N/A at this time.
Reporting			

29.	Quotations presented	Were participant quotations presented to illustrate themes/findings? Was each quotation identified? E.g. participant number	N/A at this time.
30.	Data and findings consistent	Was there consistency between the data presented and the findings?	N/A at this time.
31.	Clarity of major themes	Were major themes clearly presented in the findings?	N/A at this time.
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	N/A at this time.

### Reference

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, *International Journal for Quality in Health Care*, Volume 19, Issue 6, December 2007, Pages 349–357, <https://doi.org/10.1093/intqhc/mzm042>

## Appendix B – Semi-structured interview guide

Participant ID Code:

Date Completed:

### Post-secondary students' experience on psychotropic medication management Interview Guide

Start Time:

Interview Location:

#### Interview Notes

Thank you for agreeing to participate in this interview. We are interviewing you to better understand your experiences, post-secondary students, with managing your mental health using psychotropic medications and how pharmacists can better support you with medication management. There are no right or wrong answers, I am interested in your own experiences.

This study aims to use findings to investigate strategies that can be implemented in the academic pharmacy to offer psychotropic medication management services for students.

The interview will take approximately 30 minutes and all responses will be kept confidential. You can ask to stop recording of the interview at any time. If there is a question you don't want to answer simply say "pass". This interview will be recorded, anonymized, and kept on a secure file at the Leslie Dan Faculty of Pharmacy, University of Toronto until data analysis is complete. You are now asked to fill out a short demographic survey, link is in the chat.

As outlined in the consent form you reviewed, with your permission, I would like to now audio record the interview.

Are there any questions about what I have just explained?

*Please note that this guide only represents the main themes to be discussed with the participants. Non-leading and general prompts will also be used, such as "Can you please tell me a little bit more about that?" and "What does that look like for you".*

#### Section 1: Student's experience managing health and using psychotropic medications

1. Where do you go when you have questions about managing your mental health?

PROBE: Do you ever find yourself using search engines like google looking for answers about your medication or managing your mental health? If yes, how do you use search engines?

2. How do you currently manage your mental health?

PROBE: How do you use any digital technology like apps, fitbit or other digital devices to help manage your health?

PROBE: Can you describe any digital or other tools that have been helpful to you managing your mental health or medication?

Before moving on, I'd like to provide an overview of what medication management is. Medication management places an emphasis on managing drug therapies and patient medication safety. It is the process of selecting the right drug for a person, ensuring a person prescribed the medication has access to it and is taking it correctly, and evaluating the effect of a medication's outcome on a person.

3. How does medication fit into managing your mental health?

PROBE: Can you tell me about your understanding of how the medication works to help manage your mental health?

4. How would you rate your understanding of how your psychotropic medications work to manage your mental health with 1 being the lowest and 10 being the highest?

PROBE: Why that rating?

PROBE: What do you wish you knew more of?

5. What strategies do you use to help you remember to take your medications? PRQ

PROBE: Do you ever forget to take your medication?

6. How well do you feel you understand how psychotropic medications are affected by cannabis, alcohol and other substances?

PROBE: Have you sought out information about it before?

PROBE: Would this information be useful to you?

### **Section 2: Student's awareness of the pharmacist's role**

7. Who would you talk to if you wanted advice on your psychotropic medication?

8. Why would you go visit a pharmacy?

9. Think about when you went a pharmacy to receive your medication. What did you like about the experience?

PROBE: is there anything that would have been helpful to you that you wished the pharmacist would have done?

10. In your experience, what do you think the role of the pharmacist is?

Pharmacists have expanded their scope of practice in many Canadian provinces where they take on responsibilities beyond medication dispensing such as adapting prescriptions, prescribing, administering injections, and performing medication reviews. Pharmacists in Ontario have the training to provide patient-specific services including 1) providing information and safety resources for medication use; 2) flagging improper drug selection, inappropriate dosing and drug interactions; 3) reporting adverse drug reactions; 4) following up on patient compliance; 5) re-filling prescription reminders and 6) education about medication.

11. Did you know that?

12. Has a pharmacist interacted with you in discussing your psychotropic medication? SRQ1
  - a. If yes, is there anything in particular that stood out to you about that interaction?

13. What do you think would be helpful from an interaction with the pharmacist?
  - a. What would be helpful from other members of the healthcare team?

### **Section 3: Student's experience with psychotropic medications and managing mental health**

14. How do you see technology helping you manage your mental health at the pharmacy?
  - a. Is there anything you'd like to see at the pharmacy that could be helpful to you?

15. Is there a way you think the pharmacist could be more accessible?

Thank you very much for your time and the information you shared today. As a thanks, you will receive a \$20 Starbucks giftcard through the email you have provided (confirm email with participant). Please contact me if you have any questions about the study in the future.

#### References

- Institute for Safe Medication Practices Canada: Medication Management (2022). URL: <https://www.ismp-canada.org/definitions.htm#:~:text=Medication%20Management%3A,and%20their%20health%20care%20teams> [accessed May 2022]
- Centers for Disease Control and Prevention: Community Pharmacists and Medication Therapy Management (2021). URL: <https://www.cdc.gov/dhds/pubs/guides/best-practices/pharmacist-mtm.htm> [accessed May 2022]