Professional Fulfillment and Burnout in Fourth-Year Pharmacy Students and Risk Factors for the Future: A Mixed Methods Study

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ABSTRACT
Objective: Many factors shape the professional identity of pharmacy students; however, little is known about the influence of well-being. Two aspects of well-being explored in this study include professional fulfillment and burnout. We describe the current levels of each among fourth-year pharmacy students, identify possible predictors, and uncover themes.

Methods: The Stanford Professional Fulfillment Index was used to measure professional fulfillment and burnout among students in the prior 2 weeks. Multivariable linear regressions were conducted to identify individual characteristics and activities as predictors of professional fulfillment and burnout. Upon completion of activities to foster personal wellness, student self-reflections were analyzed using thematic analysis to describe student-perceived barriers and facilitators of professional fulfillment and burnout.

Results: In total 54 students completed the Professional Fulfillment Index, wellness activities, and self-reflection. Having already completed the jurisprudence examination required for licensure and having a job upon graduation were statistically significantly associated with higher professional fulfillment scores. We identified that working in a non-pharmacy-related job, while completing practicums, was statistically significantly associated with higher work exhaustion scores. Themes uncovered from student self-reflections included a definition of wellness, how doing what you are supposed to be doing and working in a psychologically and physically safe environment contributes to professional fulfillment, and system-level factors leading to burnout.

Conclusion: This study provides evidence of the importance of supporting pharmacy students in the completion of the steps to licensure, the value of exposure to a variety of pharmacist-related activities through experiential education, and well-being as foundational to professional identity.

1. Introduction

Despite evidence of increasing burnout and declining professional fulfillment among practicing pharmacists and growing concerns related to pharmacy student well-being, most pharmacy schools do not have formal curriculum dedicated to support mental health and wellness. Rather, a curriculum focused on mental health is aimed at assessing various conditions while breaking down barriers and stigma for patients. It is clear, however, that in order to provide safe, effective, and high-quality patient care, clinicians must first care for themselves.

Previous work has demonstrated that work-life balance is a key contributor to pharmacists’ success in practice. There is also emerging literature suggesting that activities focused on pharmacy student well-being may help shape and support their professional identity. This is explained as an increase in engagement and dedication, enabling the display of professional behaviors and altruistic actions by pharmacy students when personal well-being is prioritized. What is unclear, however, is how individual characteristics and experiences influence different aspects of well-being. This research aims to explore professional fulfillment and burnout among fourth-year pharmacy students and identify predictors and common themes associated with these topics. This study implements “wellness challenges” into the pharmacy curriculum to foster personal and professional well-being early in students’ careers as they transition to practice, recognizing these transitions as critical in the formation of their professional identity.
2. Methods

2.1. Study Participants and Design

This study was conducted within a mandatory, fourth-year pharmacy course, PHARM 546 at the University of Alberta in the Winter 2023 semester. This 1-credit course is intended to bridge the gap between pharmacy school and pharmacist practice and offers several self-directed activities to develop pharmacy students’ professional identity. Activity topics include, eg, advocacy, communication, leadership, teaching, and lifelong learning. Once a topic is chosen, student groups complete a relevant activity together exploring their chosen topic such as a change management plan, skill inventory, presentation, infographic, or personal reflection. Additionally, during this course, all students in fourth year complete a total of 2, full-time 8-week practicums in January/February and March/April. Student experiences during these practicums may shape the topics explored and activities chosen in this course. Students could choose to complete the activities associated with this study as one of their self-directed activities for this course; however, participation in this study was not required to obtain credit in the course.

The Faculty of Pharmacy and Pharmaceutical Sciences student services office distributed invitations to participate in this study to all students enrolled in PHARM 546 via university email in January 2023. A reminder email was sent 1 week later. Students consenting to participate were assigned a participant number to ensure anonymity. A cross-sectional survey was administered via Google Forms to collect baseline characteristics (eg, age, self-identified gender, and current practicum type and location) and activities (eg, working pharmacy and non-pharmacy-related jobs outside of school, having a job upon graduation, having a mentor, and current stage of completing the steps to licensure) as well as the Stanford Professional Fulfillment Index (PFI) based on the past 2 weeks of students’ practicums.17

2.2. Stanford Professional Fulfillment Index

The PFI is a 16-item tool, originally developed to measure professional fulfillment and burnout in practicing physicians and medical residents over the past 2 weeks.17 Scores pertaining to each item are measured on a Likert scale ranging from 0 (not true at all) to 4 (completely true) and 0 (not at all) to 4 (extremely) for the professional fulfillment and burnout items, respectively. Additionally, burnout is measured in 2 domains: work exhaustion and interpersonal disengagement. Overall professional fulfillment, work exhaustion, and interpersonal disengagement scores are each calculated by averaging the item scores of all of the items within that domain. There is limited literature discerning cut points for professional fulfillment and burnout.17,18 One study suggests a score of 3.0 or higher as achieving professional fulfillment and a score of 1.33 or higher as experiencing burnout as a composite of work exhaustion and interpersonal disengagement.17 The PFI was utilized in this study for its efficiency, open access, and validation in a variety of pharmacy populations (practicing pharmacists, pharmacy residents, and pharmacy preceptors).18,19

2.3. Wellness Challenges

Upon completion of the survey, students were given the choice to complete one of the following 3 wellness challenges: check-in, personal purpose statement, or wellness routine. Each of these activities aims to foster personal well-being as the foundation of professional identity. Additionally, these activities were chosen to facilitate universal design in the classroom whereby students could choose the means by which to engage with the material.20

Students choosing to complete the check-in activity set up a one-on-one appointment with one of 8 faculty member volunteers. Appointments could be in-person or virtual for 20 min in length. A discussion guide on the topics of professional fulfillment and burnout was provided to students and faculty members, although students could choose to discuss any topic. This activity was adapted from Fernandes and colleagues.21

Students completing the personal purpose statement activity read an excerpt from Whitfield and colleagues,22 and reflected on what brings them happiness, how they want to make an impact as a pharmacist, the legacy they want to leave behind, their strengths, weaknesses, and core values. Students then generated a personal purpose statement in 50 words or less.

The wellness routine activity had students watch the TedxTalk “Stop chasing purpose and focus on wellness” by Chloe Hakim-Moore.23 Students were then asked to think about their current wellness routine, what they feel is missing, and how they will integrate personal wellness into their current and future clinical practice.

2.4. Evidence of Learning Self-Reflections

As part of the course requirements, students must submit evidence of their learning after completion of their chosen self-directed activity to demonstrate the application of their new or reinforced knowledge toward the formation of their professional identity. The evidence of learning for all of the wellness challenges included a series of directed reflection questions related to personal definitions of wellness, professional fulfillment, and burnout. Responses were collected via Google Forms using the previously assigned participant numbers.

2.5. Data Analysis

Scores were generated for professional fulfillment, work exhaustion, and interpersonal disengagement as an average of the Likert scale responses for each domain. Next, each set of scores was assessed by baseline characteristics and activities using simple linear regression. To explore the relationships between each of the 3 continuous outcomes (professional fulfillment, work exhaustion, and interpersonal disengagement) and pharmacy student characteristics and activities (as predictors), multivariable linear regressions were conducted. Before including the predictors into the multivariable model, a test for collinearity (pairwise correlation) was performed.24 No collinearity was detected (using a cut-off of r > 0.9 to indicate high collinearity). A minimum sample size of 56 students was required to detect a statistically significant difference at 95% confidence and allow for a 10% margin of error. All statistical analyses were performed in Stata, version 16.0 (Stata Corp).

Common themes relating to professional fulfillment and burnout were identified using inductive thematic analysis of the evidence of learning reflections. To do this, we followed the process of compiling, disassembling, reassembling, interpreting, and concluding.25 First, important words and phrases were highlighted within each reflection question for each individual student. The highlighted text was then reduced to meaningful, short statements whereby common themes emerged across student responses. A second reviewer independently assessed the coding of themes to ensure consistency with the data. Microsoft Excel, version 16.71 (Microsoft Corp) was used to code themes.

This study was approved by the Human Research and Ethics Board at the University of Alberta (Pro 00125979).

3. Results

3.1. Baseline Characteristics and Activities

Of the 131 students enrolled in PHARM 546, a total of 66 students completed the activities, 56 consented to participate in the study, and
54 completed all survey questions (response rate of 41%). The majority of respondents self-identified their gender as female (n = 41) and were on a community pharmacy practicum (n = 31) and in an urban area (n = 45) at the time of completing this study (Table 1). The average age of respondents is 24.9 years (SD 2.2 years). Most respondents were not working in a pharmacy (n = 38) or non-pharmacy-related job (n = 51) outside of school, yet most had already acquired a job upon graduation (n = 41). Of the 3 wellness challenge activities, most students chose to complete the wellness routine, followed by the personal purpose statement, and check-in (n = 49; 6; 1, respectively). Table 1 shows the complete list of baseline characteristics and activities measured.

3.2. Stanford Professional Fulfillment Index

Out of a maximum score of 4, the mean professional fulfillment, work exhaustion, and interpersonal disengagement scores among fourth-year pharmacy students are 2.04 (SD 0.72), 1.89 (SD 0.81), and 0.88 (SD 0.69), respectively (Table 1). PFI scores by each baseline characteristic and activity are also presented in Table 1. Simple linear regression identified that having a job upon graduation and having already completed the Alberta College of Pharmacy jurisprudence examination is associated with a higher professional fulfillment score (P < .05) (Table 1). Increasing age is associated

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Stanford Professional Fulfillment Index(^a) Scores by Baseline Characteristics and Activities of Survey Respondents (N = 56).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>Baseline responses</td>
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<tr>
<td></td>
<td>N</td>
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<tr>
<td>All respondents</td>
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<td>Age, y</td>
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<td>Gender</td>
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<td>Male</td>
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<td>Current practicum type</td>
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<td>Location of current practicum</td>
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<td>Rural(^b)</td>
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<td>Urban (reference)</td>
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<tr>
<td>Activities</td>
<td>Baseline responses</td>
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<td>18</td>
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<td>Hours per week spent working in a pharmacy outside of school</td>
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<td>Worked in a non-pharmacy-related job in the past 2 weeks</td>
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<tr>
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<tr>
<td>No (reference)</td>
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<tr>
<td>Hours per week spent working in a non-pharmacy-related job</td>
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<td>Have a job once graduated</td>
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<tr>
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<tr>
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<td>Wellness routine</td>
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<td>Personal purpose statement</td>
<td>6</td>
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<tr>
<td>Check-in</td>
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Abbreviation: PEBC, Pharmacy Examining Board of Canada National Licensing Exam.

\(^a\) Statistically significant at P < .05 using simple linear regression.

\(^b\) Greater than 50 km from Edmonton or Calgary.
with higher interpersonal disengagement scores ($P < .05$) at the univariate level.

Fully completed surveys were used to perform the multivariable linear regressions which further demonstrated that having a job upon graduation and having already completed the Alberta College of Pharmacy jurisprudence examination is positively associated with higher professional fulfillment scores among fourth-year pharmacy students ($β$ coefficient $= 0.58$ and $0.50$, respectively; $P < .05$ for both) (Table 2). Although not statistically significant, other characteristics and activities demonstrating a positive relationship with professional fulfillment include increasing age; hospital and non-patient care practicum types, compared with community pharmacy; rural practicums, compared to urban; working in a pharmacy outside of school; and having already started studying for the Pharmacy Examining Board of Canada National Licensing Exam (PEBCs).

The opposite is true with respect to work exhaustion. For example, increasing age, hospital and non-patient care practicum types, rural practicums, working in a pharmacy outside of school, and having already started studying for PEBCs are associated with less work exhaustion. However, working in a non-pharmacy-related job outside of school significantly increases work exhaustion scores ($β$ coefficient $= 1.13$; $P < .05$). Similar correlations between predictors of work exhaustion are also identified for interpersonal disengagement (Table 2).

### 3.3. Thematic Analysis

#### Question 1. What does wellness mean to you? Is there a difference between personal wellness and professional wellness?

In response to this set of questions, students provided many examples of wellness in their daily life. The following definition of wellness is a summary of student responses: **Wellness is a personalized, holistic care towards oneself. Wellness is building sustainable habits that nourish all aspects of life (physical, mental, emotional, spiritual, social, financial, professional, and intellectual) in order to be the best version of yourself and live a meaningful and peaceful life that you are content with.** Overall, students also noted that personal and professional wellness are “distinct” yet “interdependent” as you “cannot have one without the other” as they “both contribute to a person’s overall wellness.”

#### Question 2. What does professional fulfillment look like? Ensure your response considers both your perspective now as a student and as a future pharmacist. B. How do you envision working to ensure you feel professionally fulfilled as a practicing pharmacist?

Two major themes were identified from this set of questions: doing what you are supposed to be doing and working in a psychologically and physically safe environment.

Students described many activities that they are doing in support of their professional fulfillment while on their practicum. This includes applying their knowledge and skills to be “a contributing member of the health care team to positively impact patients” and “understand the materials to a greater extent than simply for an exam.” Students also identified the achievement of short-term milestones in the transition from student to pharmacist as contributing to their professional fulfillment. This includes “getting good grades” and “successfully completing my PharmD program and obtaining my license.” Students described the environment of their practicum as an important factor in facilitating the application of their knowledge and skills and achievement of milestones. One student explained this as having the “right amount of guidance but still allow me to have my own independence.” Another said, “receiving positive feedback from colleagues and mentors” supports their professional fulfillment as a student.

When considering themselves as future pharmacists, the students described many activities and skills that they see pharmacists doing and plan to incorporate into their future practice to support their professional fulfillment. Some examples include being “recognized” and “respected” as a “leader” by patients and colleagues, embracing “lifelong learning” to support their clinical practice, “improving patients health outcomes [and] quality of life,” and acquiring “additional certifications [to support] an expanded scope of practice.” Students clearly described their ideal future work environment to facilitate professional fulfillment as being “appropriately staffed,” “without quotas,” having “pharmacist overlap,” receiving “fair compensation,” and having the ability to “take a break during [their] shift.”
Question 3. - A. What does burnout look like? Ensure your response considers both your perspective now as a student and as a future pharmacist.

In describing burnout, students listed many thoughts, feelings, and actions such as excessive sleep, significant stress, lack of motivation, procrastination, isolation, and feeling overwhelmed. When considering what burnout looks like as a future pharmacist, 2 themes were identified: causes and results of burnout. System-level factors were given as causes of burnout for pharmacists including “high prescription volume,” being “understaffed” or having a “lack of support from head office,” “meeting quotas,” “skipping breaks,” or spending time outside of work conducting job-related tasks. One student explained burnout as a future pharmacist being “brought on by an employer’s needs and demands not matching a pharmacist’s values.”

Results of burnout as future pharmacists can be broken down into 2 subthemes: compromised patient care and reduced overall wellness. Compromised patient care as a result of burnout may look like “stop [ping] engaging with patients in discussion about their health” or doing the “bare minimum (ie, checking prescriptions) without interest to do more” or “not [conducting] full or thorough assessments.”

Another student described pharmacist burnout as being “detrimental to patient care [because] mistakes could potentially occur.” Burnout may also result in a reduction in overall wellness such as having “poor work-life balance,” “feeling very jaded about the profession,” or “questioning the role of [the] pharmacist in the health care system [and] how pharmacist[s] contribute to the care of patient[s].”

In response to preventing burnout once becoming a pharmacist, 4 themes were uncovered: proactive communication with patients and colleagues, undertaking professional activities, setting boundaries between personal and professional life, and engaging in personal activities and hobbies. Specifically, one student described mitigating burnout by “communicat[ing] with my patients to prevent some of the conversations that are typically more aggressive in nature from happening (eg, telling patients about their refills whenever they are running low; faxing doctors ahead of time, communicating with patients whenever a medication isn’t covered by insurance or when the cost of a medication is high).” Another student described that they plan to “ask about usual staffing levels in every work interview.” They also add “communicate any concerns I have with regards to the work environment or policies shortly after I notice them.”

Question 4. - Reflect on the wellness challenge you chose to complete. What insight have you gained about your identity as a pharmacy student and future pharmacist? What has changed as a result of completing your activity?

Three themes were identified as a result of this question set and overall activity: personal wellness directly impacts the quality and safety of patient care, self-care should be guilt-free, and attaining inner peace should be prioritized over attaining goals. This student’s response summarizes all 3 themes, “[This activity] has changed my attitude about carrying stress as a badge of honor and working until I drop. I have felt pressure in today’s culture to overload myself with work and stress and to push through what my body tells me so that I can meet a bottom line. In listening to the TedxTalk, it helped me to reflect on times when I did feel professionally fulfilled and times when I felt burnt out, and when I take breaks and take care of myself, I am better able to focus on the task in front of me and overall feel more fulfilled and happy. In going through this process, I have learned I need to take breaks and I am best able to help patients when I am personally fulfilled and have a good work-life balance. Once I start working, I will listen to my mind and body and take breaks, guilt-free, when I feel myself starting to become burnt out.”

4. Discussion

This study afforded fourth-year pharmacy students an opportunity to engage in activities to foster their personal wellness while completing their practicums. Through these activities, we were able to evaluate current levels of professional fulfillment and burnout, potential predictors, and themes associated with these topics. We found that on average, students scored around the midpoint for professional fulfillment and burnout and on the lower end of interpersonal disengagement. Potential predictors of professional fulfillment were identified as having successfully passed the Alberta College of Pharmacy jurisprudence examination and having job prospects upon graduation. A possible risk factor of work exhaustion is working in a non-pharmacy-related job while simultaneously completing a practicum. Several themes and ideas were uncovered from student self-reflections on these topics which include a definition of wellness, how doing what you are supposed to be doing and working in a psychologically and physically safe environment contributes to professional fulfillment, and system-level factors associated with burnout and its consequences.

While this is the first study of its kind to explore potential predictors of professional fulfillment and burnout among fourth-year pharmacy students completing practicums, our results are not surprising. This is because it could be argued that students who proactively complete activities associated with licensure as a pharmacist while still being a student, such as passing the jurisprudence examination and obtaining a job, are deeply rooted in the profession and may have a stronger sense of professional identity and fulfillment. Of note, Alberta pharmacy students may write their provincial jurisprudence examination prior to graduation and prior to completion of PEBCs as jurisprudence examination results are valid for 2 years from the date of successful completion. Additionally, it has been shown that the more hours pharmacists work per week, or feeling that the workload is unmanageable, is positively associated with burnout and negatively associated with professional fulfillment. This is similar to our findings that pharmacy students who work non-pharmacy-related jobs in addition to completing their full-time practicums, have statistically significantly higher work exhaustion scores and a negative relationship with professional fulfillment scores. Interestingly enough, working in a pharmacy-related job has the opposite effect. These results demonstrate the importance of pharmacy career fairs and engaging students in professional focused work, as well as supporting students to complete the steps to licensure early.

To foster professional fulfillment and mitigate burnout, our students described performing meaningful clinical activities, such as conducting patient assessments leading to improved health outcomes, as well as obtaining additional certifications (eg, additional prescribing authorization, certified diabetes educator, travel health certification). Similarly, in a study of emergency medical residents, “meaningfulness of clinical work” was the most significant factor positively associated with professional fulfillment and negatively associated with burnout. This study further suggests interventions of coaching, narrative medicine, and reflection to define meaningful aspects of clinical practice to support professional fulfillment through self-actualization.

Our students also described their practice environment as being influential to feeling fulfilled or burnt out. This is echoed across Canada where fourth-year pharmacy students at the University of Toronto describe pressures to balance business aspects of pharmacy while prioritizing clinical care. These students outline similar concerns such as the volume of work and time allotted for clinical activities among community pharmacies. This dichotomy is explained in the literature as a discourse between pharmacists’ identity as “merchandisers” who are focused on pharmacy as a business, compared to “health care providers” who are clinicians that take responsibility for the care of their patients. While both identities still exist in pharmacy practice today, it is encouraging to see this next generation of pharmacists connect these identities and activities with both professional fulfillment and burnout – demonstrating the profession’s evolving identity.

Students also described the importance of preventing burnout and maintaining professional fulfillment to safeguard the quality and safety of patient care.
of patient care. Students further added that they should not feel guilty for spending the time to take care of themselves as achieving inner peace is integral to having a strong sense of professional identity and fulfillment. These work-life balance considerations are outlined in the literature as being foundational to providing patient care and being a successful pharmacist, yet are often absent in curriculum.1,4,14–16,21,30 Thurston MM and Hammer D express this clearly, “Professionals have to take care of themselves before taking care of others or eventually they will have nothing left to give.” Yet, in 2021 it was reported that 9 out of 10 Canadian pharmacy schools do not incorporate burnout prevention training in their curriculum. It is evident that students, and by extension, the patients they serve, would benefit from such training; however, it is unclear where this best fits into current curriculum to have the most beneficial effects.

Future work is therefore needed to determine both the most appropriate place in curriculum as well as the most beneficial activities to implement, in order to support pharmacy student well-being and professional identity formation effectively. For example, the activities outlined in this study could be introduced in earlier years and repeated post-graduation to determine how the needs of students and their understanding of professional identity change over time. Research exploring pharmacy student professional identity formation and career trajectories is also warranted to better understand how pharmacy student experiences shape their future practice.

The results of this study are strengthened by the use of triangulation. Incorporating both quantitative and qualitative methodologies better informs the interpretation of our results, as compared to one method alone. However, each of these methods also has limitations to note. We must interpret our results in light of possible residual confounding. For example, we were unable to measure whether students had any pre-existing mental health conditions, which could impact their PFI scores. However, incorporating and analyzing personal health information is well beyond the scope of this study. Additionally, student responses to the posed reflection questions may contain response bias as the ways in which the questions were worded could influence the answers students gave. However, each student’s response was unique and shed light on both positive and negative factors impacting professional fulfillment and burnout.

5. Conclusion

This study explored professional fulfillment and burnout among fourth-year pharmacy students as they transition to practice and take the next step in the formation of their professional identity. We describe several individual characteristics and activities and their association with professional fulfillment and burnout as well as student-perceived barriers and facilitators. This research further justifies efforts to expose students to a variety of practice settings through experiential education and pharmacy career fairs as well as supporting students through activities associated with licensure. Our results also provide continued evidence of the importance of fostering pharmacy student well-being as the backbone to providing exceptional patient care and the foundation of professional identity.

Author Contributions

Conceptualization, Formal analysis, Methodology, Writing – original draft: D.N. Conceptualization, Supervision, Writing – review & editing: J.H. Conceptualization, Supervision, Writing – review & editing: T.C.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Danielle Nagy reports financial support was provided by University of Alberta Faculty of Pharmacy and Pharmaceutical Sciences.

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