

Bachelor of Science in Pharmacy student perceptions of the entry-level Doctor of Pharmacy degree: A qualitative study

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Abstract

Background: Canadian academic pharmacy institutions are undergoing a credential shift from a baccalaureate degree to an entry-level Doctor of Pharmacy (ELPD).

Objective: To characterise how Bachelor of Science in Pharmacy (BSP) students perceive this transition.

Methods: Semi-structured interviews were conducted with eight randomly-selected students from each BSP class in 2017-18. Thematic analysis was performed using NVivo qualitative analysis software.

Results: Students' opinions on the impact of the Doctor of Pharmacy (Pharm.D.) varied (n=24). Six themes emerged: positive academic and social experiences, perceptions of the Pharm.D. programme, insecurities of BSP students, impact on future employment, mixed plans to pursue Pharm.D., and suggestions for improvement. Participants were concerned about Pharm.D. graduates being preferentially hired for hospital pharmacy jobs.

Conclusion: Increased dialogue between faculty and students is necessary to provide reassurance. The credential shift to Pharm.D. should not deter BSP graduates' desire to work in a specific practice setting.

Keywords: *Entry Level Pharm.D., Pharmacy Students, Bachelor of Pharmacy, Perceptions*

Introduction

In recent years, Canadian pharmacists have seen significant advancements in their scope of practice (Canadian Pharmacists Association [CPhA], 2011; Law *et al.*, 2012). Pharmacists have increased clinical responsibilities including the authority to prescribe medications and monitor drug therapy (CPhA, 2011; Law *et al.*, 2012; CPhA, 2016a; 2016b). As the role of pharmacists expands to accommodate increasing pressures in the healthcare system, pharmacy curricula must also evolve to prepare pharmacy students for a changing work environment (Austin & Ensom, 2008, CPhA, 2011). With the evolution of the profession, many countries have been transitioning their degree programmes to the level of Doctor of Pharmacy (Pharm.D.) (Kishi, 2001; Lin, 2012; Chanakit *et al.*, 2015; Desphande *et al.*, 2015). In Canada, the directive laid out by the Association of Faculties of Pharmacy of Canada (AFPC) is for all schools of pharmacy to replace their current undergraduate baccalaureate (BSP or BScPharm) pharmacy curricula with an entry level doctor of pharmacy (ELPD) curricula by 2020 (AFPC &

Association of Deans of Faculties of Pharmacy of Canada, 2010). As such, the College of Pharmacy and Nutrition at the University of Saskatchewan implemented their ELPD programme in the 2017-18 academic year.

Opinions regarding the transition to the ELPD have been variable, with some pharmacists expressing concerns over employment stability, and others remaining confident in their education and work experience (Smith, 2011). To the authors' knowledge the perceived impact of the credential shift on current BSP students has not been studied. Given that the ELPD programme is being phased in while the BSP programme is being phased out, two cohorts of students are completing their education simultaneously at the same institution. It is possible that reservations about each respective programme could hinder the formation of future professional relationships. It has been suggested that the success of the pharmacy profession depends on the ability to unite together (CPhA, 2014; American Pharmacists Association, 2016; Holden, 2018). Since literature in the area of inter-professional education indicates that negative student attitudes may persist into the workforce (Pollard, 2008),

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identifying and alleviating student concerns should be done proactively, to try and prevent any future animosity in the workplace. As such, a qualitative study was undertaken to characterise BSP students' perceptions of the ELPD programme at the University of Saskatchewan.

Methods

The protocol for this project was reviewed by the University of Saskatchewan Behavioural Research Ethics Board and met requirements for exemption status as per Article 2.5 of the Tri-council Policy Statement (Canadian Institutes of Health Research Natural Sciences, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, 2014). A phenomenology approach, which is a qualitative methodology that seeks to capture the meaning and common features, or essences of experience or event, was used (Starks & Trinidad, 2007).

Procedure

A semi-structured interview guide was developed and revised by three members of the research team (T.B. a pharmacy student; H.M. and K.M., faculty members) (Appendix A). Pilot interviews were conducted with two recent BSP graduates to refine the interview strategy.

All students in the BSP programme at the University of Saskatchewan during the 2017-18 academic year were eligible to participate. Students were randomly assigned a number based on their year in the programme, and eight participants were selected from each year (Year 2 to 4) by a third party using a table of random numbers. Selected individuals were personally invited to participate in the study *via* email by a research assistant with no involvement with the BSP programme. If the student agreed to participate, a mutually convenient time was arranged for the interview. In the event that the student elected not to take part, the next participant(s) as determined by the randomisation procedure was contacted, until the sample size was achieved. The optimal sample size for qualitative research of this nature has not been clearly defined (Baker & Edwards, 2012). In the absence of clear guidelines, eight students from each BSP class were chosen, representing approximately 10% of the BSP student population.

Interviews were conducted in a private location at the University of Saskatchewan by a moderator (S.V.) who had been previously trained by the research team to lead interviews. Two additional research assistants (J.M. and C.L.) transcribed the audio recordings *verbatim*. The semi-structured interview guide provided a framework for the discussion; however, participants were invited to expand on their thoughts as they saw fit. The interview continued until data saturation was complete, and the participants indicated they had no other thoughts to share. Participant names were kept confidential by the interviewer, so the students remained anonymous to the research team. (Appendix A).

Data analysis

Interview transcripts were uploaded into NVivo qualitative analysis software (v.11, 2017; QRS International Pty Ltd). The data were coded and categorised into themes (T.B.). The coding results were independently audited (A.A.). Once all interviews were coded, members of the research team reviewed the results, revised and consolidated the themes (T.B., H.M., and A.A.).

Table I: Demographic Data

Name	Year of Programme	Age	Previous degree (Y/N)	Total number of years of Post secondary studies	Gender
Participant 1	3	24	N	7	F
Participant 2	2	20	N	3	F
Participant 3	4	23	N	6	F
Participant 4	3	24	Y	7	F
Participant 5	4	24	N	6	F
Participant 6	3	20	N	4	M
Participant 7	2	21	N	5	F
Participant 8	2	20	N	3	F
Participant 9	3	23	N	6	F
Participant 10	3	22	N	5	F
Participant 11	4	22	N	5	F
Participant 12	2	21	N	4	F
Participant 13	2	22	N	5	F
Participant 14	3	21	N	4	F
Participant 15	2	22	Y	5	F
Participant 16	3	29	N	9	F
Participant 17	2	25	Y	7	F
Participant 18	4	24	N	7	F
Participant 19	2	23	N	4	M
Participant 20	3	25	Y	7	F
Participant 21	4	24	N	7	F
Participant 22	4	22	N	5	F
Participant 23	4	22	N	5	F
Participant 24	4	23	N	6	F

Results

Respondents

Forty-one students in total were invited to participate with 17 declining. Being too busy with school or other activities was the most common reason for not participating. Overall, 24 interviews were conducted lasting a mean of 15 minutes and 51 seconds.

Themes

Six main themes emerged from the interviews: positive social and academic experiences, perceptions of ELPD programme in general, insecurities of BSP students, impact on future employment, mixed plans to pursue Pharm.D., and suggestions for improvement.

1) Positive social and academic experiences

Several students described positive experiences during their time in the College of Pharmacy and Nutrition. Six participants noted the opportunity to interact with students in other health care disciplines as having a positive impact on their academic experience.

“Having nutrition has had a tremendously positive influence on my student experience, socially and even academically. I’ve loved the inter-professional labs that we’ve had... and then just the different things that we’ve been able to do kind of coordinating with nutrition.” [Participant 23]

All participants claimed they had positive social experiences, and eighteen referred to the social events organised by student groups within the College as a way to form relationships with classmates, students in other years, and faculty members.

“I think it’s been pretty good. They put on a lot of good events that allow students to go out there and interact with their friends and...make friends and better relationships.” [Participant 21]

2) Perceptions of Pharm.D. in general

This theme centred on what the BSP students’ understanding of the ELPD programme was, how it differed from the BSP programme, and any perceived gaps in knowledge between the two programmes. Almost all students (n=22) believed that the greatest difference between the two pharmacy programmes is the greater focus on experiential learning in the ELPD programme.

“My understanding is that the majority of their fourth year in the programme will be... experientially-based, so I think that that gap in knowledge will be significant in that they’re coming out with so much more experience than we have had.” [Participant 23]

“I am sure they will be more prepared with the clinical side of things because they are getting their foot in the door right away.” [Participant 15]

Most did not feel strongly that this would lead to a knowledge gap (n=13).

“This Pharm.D. programmes been in many other provinces and we all write the PEBC exam, regardless of the fact that I have BSP and someone in Alberta has a Pharm.D. And I’m hoping they will be more confidently start practicing because they have more experience. But I don’t necessarily see that as a big knowledge gap.” [Participant 11]

3) Insecurities of BSP students

Nineteen participants stated that they believed the ELPD students saw their programme as superior to the BSP programme.

“Just the name of Pharm.D. will probably make them pretty superior than us... because that probably makes them feel like they’re doctors, and also because they’re paying a lot more tuition, and their course is more compact than us.” [Participant 9]

Six students expressed concern that the ELPD students are learning certain concepts earlier in their education, such as therapeutic topics, patient counselling, and gaining practical experience. This concern was particularly prominent among 2nd year BSP students.

“They [Pharm.D. students] already seem to be taking a leap on us... They’re already taking therapeutic classes and OTCs. They’re supposed to be doing OSCEs in a month while our class didn’t even start counselling until this week.” [Participant 7 - 2nd year student]

Some participants (n=5) indicated that the faculty has reassured them that there would not be a significant difference in education and/or that their job prospects would not suffer. Others (n=3), however, felt that the ELPD and BSP students had been given conflicting messages, and desired a consistent message.

“I would like to see some kind of discussion and have the faculty be a little more open about what’s going on in the programme... as a whole, the BSP students have not been kept in the loop about what’s been going on. So being a little bit more transparent of the changes that are being made and honest about the differences to try and eliminate that gap between the BSPs and the Pharm.D. students.” [Participant 7]

Twenty participants believed the ELPD graduates would be preferentially hired to work in hospital pharmacies, citing greater clinical experience in the hospital setting throughout their formal pharmacy training as the most common reason for this belief.

“My biggest fear is just that I am going to be less hireable than [Pharm.D. students]... I am someone who has an interest in hospital practice, so I would be afraid that somebody would look at my resume and see their letters and automatically assume that they are more prepared for the job.” [Participant 20]

None of the participants expressed the same concern regarding the community pharmacy setting, citing increased job opportunities and a reduced clinical role of pharmacists in community pharmacies. Furthermore, 12 participants believed their work experience would be considered more valuable than credentials.

“I think community pharmacy would value the work experience more so over the Pharm.D. label. A lot of it is being able to connect with patients and get to know them and have that rapport with them, and I think a lot of that comes from work experience.” [Participant 16]

Notably, all participants that expressed less concern with their ability to secure employment based on experience were either in their 3rd or 4th year of the BSP programme (n=12).

“It’s really not going to be an issue when it comes to our job search because the Pharm.D.s really aren’t going to be around for at least another three years... But, I do think that other years are concerned about competing against someone who technically has a better designation than you. And if I was in one of those years, I think I’d be worried as well.”

[Participant 24, 4th year student]

Several participants expected some animosity between students of each programme in school and/or in the workforce upon graduation (n=14). Reasons included the belief that ELPD graduates will expect a wage increase and have a sense of superiority over their BSP counterparts.

“If the programme is as good as they say it is and you’re getting the extra experiential training and are going to be offered the higher pay, and say, taking away jobs from BSPs, then I think that there will be [animosity]. Same with vice versa, if it’s harder for a Pharm.D. to get a job because they’re expecting, or they’re supposed to be paid more for their education, then there would be some animosity going the other direction as well.” [Participant 7]

5) Mixed plans to pursue Pharm.D.

Ten participants indicated that they are interested in pursuing a Pharm.D. upon graduation, with half (n=5) citing ‘remaining competitive’ as the reason. Others indicated they would reconsider it later in their career. Three participants indicated their motivation for pursuing a Pharm.D. is to better position themselves for hospital practice.

“I’m not as interested in going to community pharmacy and I know that if you want to go into hospital pharmacy, they definitely have a preference for Pharm.D.s and so I want to get that done as soon as I could.” [Participant 8]

“What motivates me is not the title. I think it’s just that opportunity and I think it just comes out of fear of having a loss of opportunity because there will be all these entry-level Pharm.D. students coming out....So I want to better myself as much as possible.”

[Participant 10]

Most participants (n=23) indicated that if a bridging programme was offered locally, they would consider applying. Factors that would play into their decision were the duration of the programme and the price of tuition.

6) Suggestions for improvement

Participants provided suggestions for improvement in regards to the social and academic experience of the programme, such as integrating the three programmes currently offered within the College (the BSP programme, the Pharm.D. and the nutrition programme), and/or alleviating concerns and confusion. Nine participants claimed that there was a lack of understanding among the BSP students about the details of the ELPD programme and how its implementation will affect them. They suggested that increased dialogue and transparency would be beneficial in alleviating concerns and misconceptions.

Discussion

As the profession of pharmacy continues to evolve, Canadian schools of pharmacy have either already transitioned to, or are in the process of transitioning to an ELPD programme. The authors undertook this qualitative study since little is known about how BSP students perceive these significant changes.

The majority of students interviewed expressed some insecurities with the shift in credentials. For instance, several participants (n=14) believed that ELPD students would feel that their programme was superior to the BSP. Collaboration amongst team members is an essential competency for all pharmacists entering into practice (National Association of Pharmacy Regulatory Authorities, 2014; AFPC, 2017). Effective collaboration, which is built on mutual respect, can be compromised when there are perceived power differences (San Martín-Rodríguez *et al.*, 2005). Feelings of inferiority (whether perceived or actual) could lead to animosity between students of each programme during their schooling and/or in the workforce, and this was described in some of the interviews (n=14). A proactive solution is to provide accurate information to pharmacy students regarding the shift in curricula, the rationale behind it, and its implications on pharmacy practice and employment. Eleven participants in this study confirmed that concerns could be mitigated with increased communication and transparency between the faculty and students. Almost all students accurately recognised that the biggest difference between the two programmes was the increase in practical experience, indicating that some communication has taken place. Nevertheless, it is important that faculty members provide encouragement when possible to alleviate tension in the programme and perhaps beyond.

With respect to impact on future employment, participants had mixed perceptions depending on the setting. BSP students were not concerned with preferential hiring of ELPD graduates in the community pharmacy setting. They claimed that work experience would be viewed by employers as more valuable than ELPD credentials. However, the majority of students (n=20) feared that ELPD graduates would be

preferentially hired to work in hospital settings. The validity of this concern is questionable. Some studies have indicated that Pharm.D. graduates are more commonly employed in the hospital setting than baccalaureate-trained pharmacists (Fjortoft & Lee, 1995; Joyner, Thomason & Blalock, 2009; Kreling *et al.*, 2010). However, these studies were conducted in the United States where the ELPD has been the minimum educational standard for pharmacists much longer than in Canada (Fink, 2012). In 2011, 92% of all practicing pharmacists in Canada had a baccalaureate degree as their highest level of education (Ministry of Health and Long-Term Care, 2013). A 2013-14 survey of 718 hospital pharmacists across Canada revealed that 43% had a baccalaureate pharmacy degree as their highest level of education compared to only 1% and 8% for ELPD and post-baccalaureate Pharm.D. graduates, respectively (Hall & Bussi eres, 2015). The rest of the cohort surveyed had a hospital residency, or masters degree in clinical or hospital pharmacy (Hall & Bussi eres, 2015). This survey also revealed that 79% of respondents agreed that hiring preferences should be given to pharmacists who had completed an accredited hospital pharmacy residency programme (Hall & Bussi eres, 2015), indicating that relevant work experience may be more desirable than one's pharmacy degree.

Approximately half of the participating students expressed a plan to pursue a bridging Pharm.D., with nearly all stating that if one was offered locally they would consider enrolling. It is encouraging that BSP-trained pharmacists are interested in completing additional education, and their enthusiasm should be commended. Nevertheless, it is important that BSP students understand the skills and knowledge learned in a Pharm.D. programme and how it will benefit their practice. Completing such a programme may assist with developing clinical practice skills and confidence, but the credentials alone are not a substitute for clinical experience and do not necessarily make one more qualified than a baccalaureate-trained pharmacist. It should also be recognised that increased experience and confidence can be obtained from a variety of settings, whether it be in a work environment, or residency or another type of post-graduate educational programme.

It is not surprising that BSP students or pharmacists may feel threatened with the ELPD. The recent hype and energy devoted to redesigning Canadian pharmacy programmes could potentially leave the impression that the current baccalaureate programmes are subpar. However, the goal of the ELPD was not to create a 'superior' pharmacist, rather it was to respond to a changing shift in practice due to a natural evolution of the profession (CPhA, 2011; Chanakit *et al.*, 2015). Recent studies have aimed to identify barriers to the evolution of pharmacy practice (Luetsch, 2017). Several factors have been associated with increased uptake of advanced clinic services, such as specific personality traits such as competitiveness and innovation (Rosenthal *et al.*, 2016), attitudes and beliefs (Herbert *et al.*, 2006), as well as a conducive physical environment (Roberts *et*

al., 2008). While lack of confidence, interest/motivation or expertise, or skill have been identified as potential barriers to the evolution of pharmacy practice (Luetsch, 2017), it should be noted that the lack of a Pharm.D. degree has not.

As with most situations, it is not the degree itself that is important; rather it is what students choose to do with it. In Canada and other Westernised countries, pharmacists have played an integral role in providing care and are considered pillars of the healthcare sector (Ghayur, 2008). There are a multitude of examples of amazing achievements by both baccalaureate- and Pharm.D.-trained pharmacists, and with desire and determination, anyone can change practice. In the words of Tony Robbins, "The only limit to your impact is your imagination and commitment."

Limitations

While the findings of this study provide useful information, the context in which the data were collected must be considered. This study examined perceptions of BSP students at the University of Saskatchewan, and the results may not be reflective of the views of pharmacy students from other institutions. It should be recognised that bias in qualitative research is inevitable, since individuals are shaped by personal beliefs, values and environment. In this study, the research was conducted by a 4th year BSP student, and faculty members who obviously have their own opinions on the subject matter. Furthermore, the participants' pre-existing relationships with members of the research team could have potentially influenced responses to interview questions. To minimise potential bias, the authors enlisted nonpartisan colleagues to recruit participants, conduct and transcribe interviews, and provide aliases to the participants protecting their identities from the research team. Coding was performed by one individual and independently verified by a team member who was not a faculty member or an undergraduate student.

While the authors purposively recruited individuals in the BSP programme, recruitment was performed randomly within each year. The authors realise this strategy is not typical in qualitative research and could be perceived as a limitation. Traditional recruiting methods such as snowball or convenience sampling were deemed inappropriate because the authors aimed to hear from all students, not just the students who were eager to volunteer. Purposive sampling based on gender, age, educational background or other characteristics was ruled out since it could have compromised the anonymity of the respondents. As a result, the final sample consisted of only two males (8%). In addition to students' perceptions, it would be beneficial to obtain the thoughts of employers, which was not investigated in this study. Despite the limitations, the authors feel that this study has provided insight on perceptions of BSP students. The data will be used to increase communication and provide support and encouragement to the students within these particular programmes.

Conclusion

BSP students expressed concerns relating to employment in the hospital setting, and insecurities about the EPLD. Ongoing dialogue between faculty and students is suggested for alleviating tension. Baccalaureate students and graduates should rest assured that all pharmacists have the potential to change pharmacy practice, regardless of their credentials.

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Appendix A: Semi-structured Interview Guide

Questions	Probes (if needed)
1. How would you describe your academic experience as a student in the College of Pharmacy and Nutrition?	Positive? Negatively? Neutral? Please elaborate. Which aspects did you like? Which aspects did you dislike? How would you like to see it improved?
2. How would you describe your social experience as a student in the College of Pharmacy and Nutrition?	Positive? Negatively? Neutral? Please elaborate. Which aspects did you like? Which aspects did you dislike? How would you like to see it improved?
3. Over the past few years, the college has been transitioning to a new home in the health science building. Do you believe this transition has impacted your student experience either academically or socially?	If yes, how and why? If no, why not?
4. Our college is currently comprised of 3 programmes: BSP, entry level Pharm.D., and nutrition. Do you believe that having multiple programmes has had an effect on your student experience?	If yes, how and why? If no, why not?
5. How do you think your classmates perceive the nutrition students?	Positive? Negatively? Neutral? Please elaborate.
6. How do you think the nutrition students perceive the BSP students?	Positive? Negatively? Neutral? Please elaborate.
7. How do you think your classmates perceive the Pharm.D. students?	Positive? Negatively? Neutral? Please elaborate.
8. How do you think the Pharm.D. students perceive the BSP students?	Positive? Negatively? Neutral? Please elaborate.
9. Are there any suggestions for the faculty or college to assist with integration of the 3 programmes?	Academically? Socially? Health and well-being?
10. Do you expect there to be any gaps in knowledge between BSP graduates and entry to practice Pharm.D. graduates?	If yes, what gaps do you foresee? If no gaps in knowledge expected, please elaborate.
11. Do you believe the new Pharm.D. programme will impact your future employment opportunities?	With respect to jobs in community pharmacy? With respect to jobs in hospital pharmacy? With respect to senior/management roles? With respect to pay?
12. Do you believe there will be animosity between BSP grads and entry to practice Pharm.D. grads when they first enter the market place?	Why or why not?
13. As a BSP grad, you will have the opportunity to be a preceptor for entry to practice Pharm.D. students a year after you graduate?	Will you do this? How does this make you feel?
14. Do you plan to pursue a post-graduate Pharm.D.?	If so, when? What is your motivation for doing so? Increased wage/opportunities? Increased knowledge? Job security? If no, explain your reasons
15. If the U of S introduced a Pharm.D. bridging programme for BSP (or equivalent) graduates, would you be interested in enrolling?	If yes, what knowledge/experience would you hope to gain from such a programme? If no, what are your reasons for not being interested?
16. Do you have any other comments or concerns about the Pharm.D. programme at the University of Saskatchewan that you would like to discuss?	