

# Commencing and graduating pharmacy students' perceptions of their professional development during undergraduate study

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## Abstract

**Objective:** Professional development is key to professional conduct and behaviour in the practice. The aim of this study was to ascertain the factors affecting professional development of commencing and graduating pharmacy students.

**Methods:** Student volunteers participated in two focus groups for an in-depth exploration of their opinions and experiences which impacted their professional development. Focus group transcripts were analysed for emergent themes.

**Results:** Three common themes were revealed by both commencing and graduating students, namely pharmacist-educators, curriculum and placement/part-time work, were identified as contributing positively to student professional development.

**Conclusions:** Although factors influencing professional development are similar, differences do occur in the prioritisation and emphasis placed on these factors by the two student groups. Pharmacist-educators are pivotal in student professional development, however the nature of the interactions between student and educator increases in complexity during the degree programme. Autonomy-supportive teaching potentially provides an instructional framework to support student professional development needs.

**Keywords:** *Professional Identity, Self-determination Theory, Pharmacy Education, Health Professionals, Motivation*

## Introduction

Professional conduct and behaviour are cornerstones of the practice of pharmacy. This is evidenced by the documentation produced by the United Kingdom (UK) General Pharmaceutical Council (GPhC), in their standards for pharmacy professionals (GPhC, 2017), in the United States (US) 'Standards 2016' published by the Accreditation Council for Pharmacy Education (Accreditation Council for Pharmacy Education, 2015) and in the Australian Professional Practice Standards (PPS) (Pharmaceutical Society of Australia, 2017). The responsibility for educating pharmacy students about professionalism has fallen largely to teaching academics (Stupans & Owen, 2009) and for decades the approaches to teaching and learning of these professional characteristics has been debated. A large study exploring effective practices in professional education was conducted by Schafheutle *et al.* in their analysis of the curricula of three UK schools of pharmacy (Schafheutle *et al.*, 2012). The study included interviews with staff and students, examination of curriculum materials and observations of professional classes. Findings revealed that strategies including practical classes, role plays, teaching through practice-related examples and

pharmacist-educators (academic staff, tutors or guest speakers, who are pharmacists) were effective in socialising students into the profession.

The view of professional education is however changing. Recently there has been a shift from a focus on the development of professional attitudes, values and behaviours, to an acknowledgement of the role played by professional identity in student professional development. This has been largely driven by research in medical education (Goldie, 2012; Cruess *et al.*, 2014) where it has been reported that student professionalism should be based on the development of professional identity. Appropriate and effective teaching strategies are thus required to support the formation of professional identity (Cruess *et al.*, 2014). In a review of an Australian pharmacy programme, Noble *et al.* observed that there are opportunities for identity development in the curriculum, but that there is much work to be done in this area (Noble *et al.*, 2014).

With a view to gaining a better understanding of the student experience of professional education, including professional identity formation, and subsequently inform educational design, the aim of this study was to utilise

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focus group methodology to investigate student perceptions of their professional development in an Australian school of pharmacy. Possible implications for pedagogical approaches to professional education will then be considered.

## Methods

### *Participant selection and recruitment*

To investigate the professional development of undergraduate pharmacy students, this study focused on students in their first (commencing) and final year (graduating) of the B.Pharm. at James Cook University (JCU). The B.Pharm. is an undergraduate, four year degree programme, which adopts a modern integrated curriculum, whereby body systems, associated disease states and relevant therapeutics are taught concurrently, thus providing opportunity for the learners to make meaningful connections between the scientific basis of therapeutics and the practice of pharmacy. Students in their first year of study undertake a combination of science-based subjects (*e.g.* biochemistry and physiology) and pharmacy-specific subjects, the latter being designed to introduce students to the professional aspects of pharmacy practice. The first two years of the programme have a strong scientific emphasis, with the introduction of integrated clinical material occurring at the commencement of the second year. The third and fourth years of study focus heavily on the clinical and therapeutic management of disease states as well as a total of 600 hours of experiential placements in community and hospital settings. The students were provided with an information sheet, which outlined the objectives of the study and at appropriate times, the students were invited to volunteer to participate in a focus group. Approval was sought and granted from the JCU Human Ethics Committee (HREC#: 7083).

**Table I: Focus group questions asked of B.Pharm. students at the end of the first year of study.**

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|---|
| 1. What do you understand by the term professionalism in pharmacy?                            |
| 2. Has your understanding of professionalism changed since you commenced the B.Pharm. at JCU? |
| 3. What influences you most as you become part of the pharmacy profession?                    |
| 4. Where do your professional attitudes, values and behaviours come from?                     |
| 5. Which parts of the B.Pharm. course teaches you about professionalism?                      |
| 6. What are the challenges in maintaining a high level of professionalism?                    |
| 7. Do you think there are outside factors which affect your professionalism?                  |
| 8. What do you think is the difference between professionalism and professional identity?     |
| 9. How do you think your professional identity has changed/developed?                         |

### *Conduct of the focus group*

For purposes of comparison, focus group discussions were conducted with commencing students (CS) and graduating students (GS). This allowed for an examination of possible shifts in ideas, experiences preferences around factors influencing student professional development, from the first to the fourth and final year of study. Focus group participants were invited to volunteer and supplied with a consent form, which included consent for the proceedings to be audio recorded. The focus group was scheduled and was run for approximately one hour. Participants were asked to provide their responses to a selection of questions relating to professionalism and professional identity based on focus groups previously conducted by Schafheutle *et al.* (2012) (Table I). Initial questions focused on professionalism in general, including factors, which the participants felt affected professional development. The students were then asked to consider which aspects of the course taught them about professionalism and if there any were any experiences which negatively impacted their sense of professionalism.

### *Analysis*

Focus group proceedings were audio-recorded and transcribed. The transcripts were analysed manually, using an analytical framework that identified key concepts such as ideas, experiences and preferences of the participants (Krueger & Casey, 2015). The coding of the data and subsequent organisation into categories or themes (Rosenthal, 2016), was carried out by an author, and verified by another another.

## Results

### *Focus group I (FGI): Commencing students*

Nine participants volunteered to take part in the commencing student (CS) focus group (Female = 5; Male = 4), representing 20% of the enrolled cohort. Participant ideas, experiences and preferences regarding factors influencing professional development, were manually coded and organised into four distinct themes. The themes were identified as: 1) pharmacist-educators; 2) curriculum; 3) placement/part-time work; and 4) student networks. Selected quotes from participants are referenced according to focus group number (FGI or FGII), participant number (p1 to p9) and gender (M or F).

**Pharmacist educators:** There was unanimous agreement from the students that the most influential factor on their professional development, in their first year of the B.Pharm. was the opportunity to be exposed to pharmacist-educators, who have had “real world” experience in the various areas such as the pharmaceutical industry, military, hospital and community pharmacy.

*"I think having [tutor name] in the practical classes was really helpful because she could give some advice about what it's like when you're in practice, working for real."* (FGI-p1-F)

During this early stage of the degree pathway, where there is limited experiential placement in the practice, this contact with the profession was highly valued by the students. The CS particularly noted that the observation of professional behaviour by academic staff, encouraged them also to behave professionally.

**Curriculum:** The CS were all in agreement that they welcomed the opportunity to discuss issues around professionalism in their first year of study. The participants saw it as essential for preparation for placement in their third year of study and also for future employment. They also commented on the value of having professional expectations communicated early in the degree: *"Lectures about conduct and professional ethics, sets the tone and what is expected of you"* (FGI-p3-M). Participants also agreed that they found value in the compounding practical classes, because they felt the sessions were relevant to the practice and *"made me feel like a pharmacist"* (FGI-p2-F). Those participants, who had previously completed a science qualification, also valued opportunities to apply their knowledge in JCU's integrated curriculum, and considered these experiences to be very important to their development as a professional.

A white coat ceremony at the end of the first year of study was also introduced into the B.Pharm. as a means of facilitating student professional identity, following the model adopted by a large number of pharmacy schools and colleges in the US (Brown *et al.*, 2003). There is increasing uptake of this practice in Australian Pharmacy Schools, the JCU ceremony being supported by the Pharmaceutical Society of Australia. Students were unanimously positive about the inclusion of the white coat ceremony and noted that they also appreciated the role they had played in the generation of the oath, which formed part of the ceremony. The students felt that the white coat ceremony had a positive effect on their sense of professionalism: *"I think getting the white coat has definitely helped with that because it's like "Yeah, this feels like -this feels real"* (FGI-p6-M).

**Placement/part-time work:** All participants were in agreement regarding the positive effect of direct contact with pharmacists in the workplace setting. They all stated that they would like more placement experiences in addition to the two two-hours of observational placement in their first year. The value of having a part-time job in a pharmacy was also noted by some participants. They explained that such an opportunity enabled them to observe the pharmacist interacting with patients, thus acquiring a sense of the nature of professional conduct in the pharmacy. The absence of meaningful exposure to the practice setting is obvious in the first year of the B.Pharm., due mainly to the prevalence of subjects

dedicated to establishing a strong scientific foundation in the curriculum 4.

**Student networks:** The CS all agreed that forming networks with other students was an important part of their professional development. The students particularly valued the support they felt from fellow students in their cohort. *"We go everywhere together!"* (FGI-p5-F). They found this to be a great comfort and source of emotional and academic support during stressful periods of their study. Some students expressed a desire to extend this network through increased interaction with students in higher levels, in a mentor-type relationship. They felt this would improve their experience as a student and help them to develop professional skills, especially being able to discuss placement with more advanced students.

**Challenges:** Students were asked to comment on what challenges they experienced in maintaining a high level of professionalism. In response students raised the issue of the level of professionalism exhibited by academic staff in the non-professional subjects, such as those in the basic sciences. These subjects are service-taught into the B.Pharm., being delivered by academics outside the College of Medicine and Dentistry in which pharmacy resides. The students felt that staff in these areas did not convey the same level of acknowledgement for the importance of professional conduct, behaviour and respect compared to what they experienced within the pharmacy-specific subjects. The participants who questioned the professionalism of these academic staff members, felt that the experience *"adversely affected their self-esteem"* (FGI-p2:F) and represented a negative experience in their development as pharmacists.

### **Focus group II (FGII): Graduating students**

Seven participants volunteered to take part in the graduating students (GS) focus group (Female = 4; Male = 3), representing 18% of the overall cohort. Analysis of the focus group transcript revealed three key themes relating to the factors which influenced their professional development, identified as: 1) placement/part-time work; 2) pharmacist-educators; and 3) curriculum. When asked about influencing factors on their professional development, the immediate response was placement/part-time work first and foremost, followed by the role played by the pharmacist-educators and lastly, the impact of curriculum.

**Placement/part-time work:** The GS were all in agreement that placement opportunities during their third and fourth years had played a central role in their individual professional development. Students commented that they were ready to go "out there" and start practicing, in particular looking forward to employment, where they could experience being a pharmacist for longer than a few weeks, as is the case with experiential placements.

*"I can't wait to get out there and do this on a day to day basis. Having the ability to continuously apply your knowledge." (FGII-p4-M)*

The GS expressed that they were looking forward to the workplace as they were ready for an extended opportunity to put their training into practice.

**Pharmacist-educators:** The GS perceived pharmacist-educators as playing an essential role in their professional development. The students stated that they particularly valued those staff who took the time to interact with them, treating them like colleagues or as a member of a team. Students felt a sense of mutual respect, when academic staff *"treated them like equals, while still maintaining professional boundaries"* (FGII-p6-M). The students were thus clearly becoming more aware of the value of interactions with academic staff, especially those in active practice. They felt that this was particularly influential in their development and helping them to feel part of the profession. One student commented on the impact of a senior academic pharmacist in the programme:

*"it's that level of expectation, which you want to achieve because she's so passionate about what she does. Ideally that's what I want to strive to, is be passionate about my career."* (FGII-p1-F)

When probed further about what the pharmacist-educator brought to their educational experience the students identified the value of the professional stories and description of their encounters in the practice:

*"Probably in the small group settings, like just in tutorials, things like that where you can speak to people one on one, and any settings where, I like it when people share their experiences. Where they say, this is something that you'll probably see. That makes it stick in my mind."* (FGII-p2-F)

The students also commented on the value of feedback to their learning, in particular the feedback given by pharmacists currently working in the practice:

*"I think obviously in the counselling it's probably a great place to have pharmacists because obviously it's their job, it's what they do, and so their feedback is probably the most valuable that we get in those because they literally just tell you, yeah. They know how to keep it brief, they know what to say, they know everything they need to say."* (FGII-p6-M)

**Curriculum:** The GS noted the impact of pharmacy-specific subjects within the curriculum on their professional development. The students explained that this was the year *"we had proper dispensing and counselling practicals and the OTC (over the counter) subjects"* (FGII-p2-M). They observed that there was an appreciable change in student behaviour in the third year of their studies, in particular an increased level of

maturity and respect for others. They attributed this to the introduction of simulated patients within the counselling and dispensing subjects. Simulated patients were community volunteers who portrayed the role of a real patient, giving students the opportunity to practice their counselling skills during class. One student reflected on the impact of the presence of the simulated patients on his development:

*"I think the maturity level also increases when we're given responsibility for a patient. Third year we start learning about different health issues and we're responsible for helping someone, and so that makes us responsible for what you're going to say to them. So in the first and second year you don't really do too much of that so we're not held responsible at that point."* (FGII-p4-F)

The students in the focus group were also asked to comment on the role of the science-based subjects in their professional education. The students did not feel that these subjects contributed to their professional development and described them as big and impersonal: *"You just felt like sheep"* (FGII-p1-F); *"I just felt like another number"* (FGII-p3-M). The students all agreed that they did not learn anything about professionalism from the science-based subjects. In contrast they could see that the pharmacy-specific subjects were inherently relevant to the practice and that they felt like they were being taught *"how to be a pharmacist"*. They stated that the experience of the early years in the B.Pharm. would be improved if the science subjects could be related to pharmacy more often.

**Challenges:** The GS focus group included a discussion of factors, which the students felt negatively impacted on their professional development and identity formation. Students stated that they were sensitive to the lack of appreciation of what a pharmacist does and felt that the profession can be devalued through a lack of understanding of the scope of the professional role:

*"No one really understands how hard we have to work and how much knowledge we actually have to have to be a pharmacist."* (FGII-p4-F)

Kelly *et al.* report that the public have a basic understanding of the role of the pharmacist, but that additional services offered by pharmacists are often cognitive in nature and difficult for patients to appreciate. The study concluded that there is a need for education to increase awareness of the specialised skills, knowledge and professional abilities that the pharmacist has to offer (Kelly *et al.*, 2014).

### **Professional identity**

Students were asked to comment on their understanding of professional identity. The responses were varied, with students expressing uncertainty around the concept:

*"I'm not sure. Is your professional identity more like your title, whereas professionalism is how you conduct yourself?"* (FGII-p6-F)

“Professionalism is individual, whereas professional identity is a group of pharmacists.” (FGII-p3-M)

“Like, your professional identity is more like what other people see and what you think of yourself as being whereas professionalism is as a group as a whole.” (FGI-p1-M)

“Professionalism is a core like as a group. I think your professional identity is individual and specific to you.” (FGI-p3-F)

Several students also thought that professionalism and professional identity referred to the same concept.

## Discussion

The aim of this study was to explore differences in student perceptions of their professional development, comparing responses from commencing and graduating students. Analysis of the two target focus group transcripts revealed common themes from both groups. Each group raised three common themes, with differences being in the prioritisation of and emphasis within the themes. The three themes found across the two groups were curriculum, pharmacist-educators and placement/part-time work in pharmacies. The GS emphasised the role of placement/part-time work as the most important factor in their professional development, whereas the CS placed pharmacist-educators as a primary influence. One additional theme was revealed in the CS group, but absent in the GS group. Student networks was a theme revealed by the CS and was identified as an important source of emotional and academic support. Research reports on the positive effects of student support networks across discipline areas such as nursing and medicine (Yamada *et al.*, 2014; Marques-Sanchez *et al.*, 2017). The study in nursing found positive effects of student co-operative networks on socialisation and academic achievement (Marques-Sanchez *et al.*, 2017). A study of medical students demonstrated that the presence of peer social support may assist in lowering psychological stress and improve academic performance (Yamada *et al.*, 2014). Student networks were not identified by the GS as being a significant factor in their professional development. This can perhaps be explained by the cohesiveness of the graduating cohort, especially in a small group (n=40), where collegiality and peer support has been embedded and thus taken for granted. In addition after four years of study student confidence and maturity and sense of self is more developed as their time at university comes to an end.

## Placement/part-time work

Both the CS and the GS commented on the importance of placement and part-time work to their development as professionals. In particular the GS identified placement as the core contributor to their preparation for the workplace. The critical role played by placement in student professional development is well documented in

the literature (Stupans & Owen, 2009; Schafheutle *et al.*, 2012; Fejzic *et al.*, 2013). The results of the GS focus group are in direct agreement with the work of Burrows *et al.* who found in a study of graduating pharmacy students, that part-time work and experiential placements exerted the most influence on student understanding of practice (Burrows *et al.*, 2016).

The GS in particular were looking forward to the workplace as they would have longer than a few weeks, as in the case of placements, to immerse themselves in the practice. This raises the issue of extended placements as suggested by Teherani *et al.* in their discussion of the benefits of implementation of longer term professional placements in medical education. This study found that students had benefitted from continuity in their clinical experiences, as there are more opportunities to observe role models and experience patient-centred practice (Teherani *et al.*, 2017). However, Teherani *et al.* also noted that while these extended practice experiences are valuable and students rated them more highly than other shorter arrangements, implementation can be difficult to achieve (Teherani *et al.*, 2017).

## Curriculum

The CS and the GS both identified aspects of the taught curriculum, which contributed to their professional development. The students identified the professional pharmacy subjects, as distinct from the science-based subjects, as having an important role in enhancing their understanding the role of the pharmacist. In contrast they sometimes found it difficult to relate the material taught in the science-based subjects to the practice of pharmacy. This view is most likely to be encountered in the basic science subjects, where students have difficulty seeing the relevance of the material to the professional practice (Ten Cate *et al.*, 2011). A study focused on pharmacy education stated that the content must be interesting to students, reporting that student engagement can be enhanced by the use of real-world examples and experiences to create more meaningful learning experiences (Oyler *et al.*, 2016). Students (both CS and GS) stated that they were more interested in subjects which were relevant to pharmacy or where effort was made to make the relevance clear:

“So even in second year we were learning about the cell cycle, in my head I'm like, why are we learning about this? It wasn't until oncology when you actually realise why you need it. And if they tailored it that way it would have been a lot more interesting”. (FGII-p6-F)

To enhance student motivation for learning, it is necessary to create learning opportunities which make the students feel like they are connected to the profession of pharmacy through meaningful, relevant activity (Kusurkar *et al.*, 2011). The students in this study particularly noted the value of clinical dispensing classes and the use of simulated patients, which have been previously identified as contributing to student professional development (Rickles *et al.*, 2009;

Schafheutle *et al.*, 2012; Smithson *et al.*, 2015). Noble *et al.* observe that role ambiguity could occur when efforts are not made to demonstrate relevance within, for example, science-based subjects (Noble *et al.*, 2014).

The CS in particular appreciated having clear expectations regarding professional conduct conveyed to them as part of the curriculum material and valued the opportunity to participate in discussions regarding professionalism and professional conduct. Taylor and Harding comment on the value of early education relating to the professional practice of pharmacy. With early intervention, students see themselves as preparing for a professional role, as well as acquiring scientific knowledge for the practice (Taylor & Harding, 2007).

### **Pharmacist-educators**

Both the CS and the GS recognised the positive impact of the pharmacist-educators on their professional development. The presence of professional role models is often identified in the literature as having a positive influence on student professional development (Hammer *et al.*, 2003; Kelley *et al.*, 2009; Schafheutle *et al.*, 2012). As Hammer so aptly states: “The role of the practitioner should be ‘mentor, teacher, motivator and keeper of the flame’ as it relates to the standards of the profession” (Hammer *et al.*, 2003: p.9). The presence of full-time practicing pharmacists as teaching staff, while valued by the students, is however difficult to achieve and is often limited to casual teaching positions. In the JCU B.Pharm. all of the pharmacy practice academic staff have active positions as pharmacists either in hospital or community settings. In addition, sessional (casual) staff at JCU who assist in workshops or laboratory practical classes, are all practicing pharmacists. The presence of pharmacists with current practice experience is particularly important for maintaining relevancy and connection to current issues in the practice (Taylor & Harding, 2007). Harding and Taylor highlight the credibility that pharmacist-educators bring to the role, as a representative of the real world context, which promotes student interest and engagement (Harding & Taylor, 2006). Schafheutle *et al.* also comment on the impact of poor role models, potentially causing confusion amongst students (Schafheutle *et al.*, 2012). In this study, both CS and GS identified behaviours from some academic staff delivering science-based subjects, as having a negative impact on their development as professionals. Akiyode recommends that reviews of staff professional conduct be carried out regularly, in order to create a culture, where students can develop amongst exemplary role models (Akiyode, 2016).

There was a notable difference, in the way in which the two groups of students sought interaction with pharmacist-educators. The CS commented on the value of observing the behaviours of pharmacist-educators, while the GS highly valued direct interactions on a professional level. The GS demonstrated an increased appreciation of the value of interactions and engagement,

especially with pharmacist-educators, who currently work in the practice. This developmental differentiation is explained by the concept of legitimate peripheral participation proposed by Lave and Wenger, in their theory on Situated Learning (Lave & Wenger, 1991). The authors propose that learning does not occur on an individual basis, but is created through the social interactions encountered on a daily basis. These encounters are initially observational in nature, as in the case with the CS, but become increasingly complex as the level of engagement and participation increases. Hammer *et al.* state that the role of practitioners in professional socialisation of students cannot be understated, that student exposure to these practitioners, before they are supervised in a formal placement setting is invaluable (Hammer *et al.*, 2003).

Orsini *et al.* also discuss the importance of establishing a rapport with students for supporting student relatedness. When pharmacist-educators create a setting in which students feel like a member of the team and feel valued as a future professional, an environment of relatedness is established which contributes to student autonomy and motivation (Ryan & Deci, 2000; Orsini *et al.*, 2015). As the GS noted in this study, they also found value in the stories which the pharmacist-educators would bring to the classroom. The value of the narrative in enriching learning has been reported in areas such as medicine, nursing and pharmacy (Day, 2009; Haigh & Hardy, 2011; Romanelli, 2016). Student engagement is enhanced when educators bring ‘real-life’ experiences with them, making the learning experience more meaningful, connecting the students to the patient’s reality, and ultimately making them better practitioners (Haigh & Hardy, 2011; Oyler *et al.*, 2016). Positive and constructive feedback provided by pharmacist-educators is also instrumental in supporting student competence and motivation (Orsini *et al.*, 2015) and has also been linked to professional identity development (Noble *et al.*, 2014). Noble *et al.* suggest that opportunities should be found within the curriculum structure for such feedback events (Noble *et al.*, 2014).

This study has also highlighted that students found it difficult to distinguish between professionalism and professional identity. Many saw the two as being equivalent, or that professional identity referred to the manner in which patients or the public perceived the pharmacist. “*I can also see professional identity being how others see you, but professionalism is how you believe you act and how you believe you’re going about being a professional*” (FGI-p3-F). Cruess *et al.* point out that professionalism is distinct from professional identity formation, which refers to a process (Cruess *et al.*, 2014). This lack of understanding draws attention to the need to address both professionalism and professional identity with students so that they can begin to understand the mechanism by which they develop as an emerging professional. A strategy suggested by Noble *et al.* recommends initiating a dialogue around professionalism and professional identity in the first year of study (Noble *et al.*, 2014).

Issues arising from this thematic analysis have implications for current teaching practices in the area of pharmacy education. In summary students in this study felt that their professional development was positively impacted, when they observed pharmacist-educator behaviours, developed a rapport with staff, received constructive feedback, learnt through demonstration of the relevance of basic science to current practice and experienced emotional support. Autonomy-supportive teaching features instructional strategies to address these needs. Autonomy-supportive teaching is “a coherent cluster of teacher-provided instructional behaviours that collectively communicate to students an interpersonal tone of support and understanding” (Jang *et al.*, 2016: p. 687). These behaviours include the provision of constructive feedback, emotional support, respecting and identifying student needs, active participation and giving value to uninteresting tasks, to name a few (Table II). In light of the results of the focus groups in this study, such an approach would serve to directly address the learning needs identified by both the commencing and graduating students. Central to autonomy-supportive teaching is the willingness of the educator to form relationships with students, acknowledge their needs and appreciate their perspectives (Deci & Ryan, 2002). Data from this study have clearly demonstrated that in their relationships with staff, students move from simple observation of behaviours in their early years, to seeking more advanced professional interactions by the end of their time of study. Understanding these changing student needs would enable the instructor to more closely align the level of autonomy support with the stage of development and maturity.

**Table II: Autonomy-supportive teaching strategies for stimulating intrinsic motivation developed by Kusrkar *et al.* (2011) derived from Self-Determination Theory**

Strategies
Identify and nurture what students need and want
Have students' internal states guide their behaviour
Encourage active participation
Encourage students to accept more responsibility for their learning
Provide structured guidance
Provide optimal challenges
Give positive and constructive feedback
Give emotional support
Acknowledge students' expressions of negative effect
Communicate value in uninteresting activities
Give choices
Direct with 'can, may, could' instead of 'must, need, should'

Orsini *et al.* see autonomy-supportive teaching as a human-centred approach to instruction and of particular benefit to students in the health professions (Orsini *et al.*,

2015). Students who are taught in an autonomy-supportive manner are more likely to provide care which promotes patient autonomy, leading to better health outcomes (Williams & Deci, 1998). Integrating the above approach into current professional education teaching practices may serve to give students the human-centred learning experiences necessary to become more patient-centred professionals.

### Limitations

This study was carried in a single school of pharmacy with data being collected from only two focus groups. The main investigator had an instructor role within the program, but students were advised that the objective of the study was to ascertain their opinions and perspectives regarding student professional development and that there was no connection to their awarded grades.

### Conclusion

The aim of this study was to explore commencing and graduating student perceptions of factors affecting their professional development, including their understanding of professional identity. Findings revealed that from the two student groups, three common themes emerged, namely, curriculum, placement/part-time work and pharmacist-educators. Both commencing and graduating students had a poor understanding of the concept of professional identity, an expected result, as it is an unfamiliar construct in the area of professional education in pharmacy. Factors identified by the students suggest that autonomy-supportive teaching strategies may have a role in providing a learning environment which is student-centred, relevant and supports professional development.

### Conflicts of interest

The authors have no conflicts of interests or financial agreements to disclose.

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