Behaviours that contribute to pharmacist professionalism: a scoping review

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ABSTRACT

Objectives Clearly understanding and describing professional behaviours of pharmacists allows the profession, researchers and policy-makers to observe and monitor the professionalism of pharmacists, and design interventions to improve it where needed. The primary objective of this review was to identify which behaviours are discussed to contribute to professionalism in registered pharmacists in peer-reviewed literature. The secondary objective was to review the identified behaviours using a behavioural specification framework to understand how they are expressed.

Design A scoping literature review was conducted.

Data sources An electronic database search of Scopus, Embase, PsycINFO, PsychArticles, Emcare and Medline limited to articles published in English from 1 January 2000 to 21 October 2022 was conducted.

Eligibility criteria Eligible articles contributed behaviourally relevant content with reference to registered pharmacists’ professionalism.

Data extraction and synthesis Extracted behaviourally relevant content was subject to researcher’s familiarisation, then deductive coding to one of two overarching definitions of technical or non-technical behaviour. Data were then inductively coded through assignment of a descriptive code to identify categories of professional behaviour within these two overarching types of behaviour.

Results Seven articles were identified and included in the final analysis. From the extracted behaviourally relevant content, 18 categories of behaviours were identified. All articles identified behaviours in categories titled ‘estabishes effective relationships’ and ‘complies with regulations codes and operating procedures’. Identified behaviours were often broadly described and merged with descriptions of influences on them and broader outcomes that they contribute to.

Conclusions Behaviours described to contribute to pharmacists’ professionalism in the literature are broad and non-specific.

INTRODUCTION

The expectation that pharmacists demonstrate professionalism is agnostic of country, setting or role, regardless of differences in international scope of practice and education.1–10 Professionalism is key to ensuring pharmacists can deliver high-quality care as it is critical to developing and maintaining patient trust and collegial relationships with other healthcare professionals.11–17 Pharmacy practice standards and codes often explicitly state that pharmacists are expected to demonstrate professionalism in routine practice.17,18 Despite this, the concept of professionalism is not universally defined. Healthcare literature continues to debate what is meant by the term, as well as how to teach and measure it.18,22 Attempts to define pharmacist professionalism often describe complex personal characteristics, values, behaviours, skills, attitudes, characteristics and traits.14,18,23–25

Previous research has identified and measured attitudes, values, characteristics and qualities that demonstrate professionalism for pharmacy students.36–31 Much of this research discussed and debated the attitudes and professional traits that were considered essential to pharmacist professionalism.14,31 Other research focused on developing tools to measure attitudes towards, and the presence of, these characteristics in pharmacy students.32–34 Pharmacy students’ agreement with ‘tenets’ of professionalism was increasingly incorporated into routine assessments to measure educational impact and growth
in professional skills over time. However, attitudes, values and beliefs proved challenging to measure, and it was unclear how they translate into the professional behaviours that shape society’s perception of and the impact of the pharmacy profession. This prompted research that described pharmacist professional behaviours that are demonstrated as a result of the individual’s values and beliefs. These studies typically described behaviours that directly related to pharmacy students’ academic engagement and success (eg, if the student attended class) and how they may translate to workplace behaviours once students are registered pharmacists is uncertain.

Workplace behaviours that demonstrate pharmacist professionalism must be well described and understood by the profession and their key stakeholders. For the profession and its regulators, it is critical that individual practitioners understand professional behaviours so they can act on them and monitor their own performance in daily practice to consistently provide high-quality care and services. This has similar implications for academics who need these behaviours to be clearly described so that they can be taught, measured and assessed in pharmacy students, and/or research to advance our understanding of the topic and ultimately advance the profession itself. The description and communication of behaviours can be enhanced by improved specification. Fortunately, behavioural science offers numerous theories, models and frameworks to assist in specification of behaviour. Improved specification of behaviours can be viewed as a first step towards making behaviours easier to observe and measure. Using frameworks to specify behaviours could then facilitate attitudes, values, characteristics and qualities (ie, other components of professionalism) to be explored in relation to how they impact on specific behaviours. Information on key influences on specific behaviours can be explored in different contexts and used to design theory informed interventions to change them where necessary. Thus, a focus on pharmacist professionalism through consideration of behaviour with behavioural science principles offers considerable advantages in understanding professionalism for all key stakeholders.

The extent of theory and evidence informed academic literature describing professional behaviours that contribute to pharmacist professionalism is unknown. As part of a larger body of work exploring the communication of professional behaviour to pharmacists, it was considered essential to understand what and how behaviours are described in the academic literature. A scoping review was deemed most appropriate when compared with a systematic or narrative review as the literature was expected to be heterogeneous, the results were not intended to inform clinical guidance or practice change and the review question was a broad in scope. Further, scoping review methodology provides a rigorous, replicable method for exploring the scope of research available and identifying how key concepts and theories are described or represented in the literature. The primary objective of this study was to identify behaviours that contribute to professionalism in pharmacists by reviewing current peer-reviewed literature. The secondary objective was to review the identified behaviours using a behavioural specification framework to understand how they are expressed.

**Review question**

What behaviours contribute to professionalism in registered pharmacists according to peer-reviewed literature?

**METHODS**

**Protocol and registration**

This scoping review was conducted in accordance with the Joanna Briggs Institute methodology for scoping reviews. The results of the review are reported according to the Joanna Briggs Institute methodology for scoping reviews and per the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (online supplemental appendix 1). The objectives, inclusion criteria and methods for this scoping review were specified in advance and documented in a protocol that is available from the authors on request.

**Patient and public involvement**

There was no patient or public involvement in the design or conduct of this literature review.

**Eligibility criteria**

**Participants**

Study participants were not restricted, any viewpoint or perception on pharmacist professionalism was considered.

**Concept**

The concept of interest was behaviour that is described to contribute to pharmacist professionalism. We accepted the International Pharmaceutical Federation (FIP) definition of professionalism for this review; the ‘demonstration of ethics, attitudes, values, qualities, conduct and behaviours that characterise a profession, are expected of its practitioners, and that underpin the trust that the public has in the profession.’ We accepted the behaviour change wheel definition of behaviour for this review; ‘Anything a person does in response to internal or external events. Actions may be overt and directly measurable, or covert and indirectly measurable; behaviours are physical events that occur in the body and are controlled by the brain’.

**Context**

Fully registered or registered pharmacists practising in any physical patient facing setting from any country (eg, community pharmacy, hospital pharmacy department). For this review, the term pharmacist only included those with full license or registration in their relevant
jurisdiction, and not prelicensure/intern pharmacists. Hereafter referred to as registered pharmacists.

Types of sources

Literature on pharmacist professionalism is heterogeneous and to capture the diversity of literature, a range of sources were considered. Thus, this scoping review considered all published peer-reviewed experimental study designs, observational study designs, qualitative studies, literature reviews, peer-reviewed commentaries and opinion pieces. Grey literature was excluded from this review as it was intended to provide the academic viewpoint on behaviours that are described to contribute to pharmacist professionalism, not the profession’s or regulators’, as would likely be articulated in professional practice standards and guidelines. These types of grey literature would also be difficult to consistently locate internationally as they are often member or profession only resources and the authors do not hold pharmacist registration in other countries. This review also served as a starting point for a body of work exploring communication of professional behaviour for pharmacists and thus findings would be used to ascertain if additional reviews or studies are needed, which could include relevant grey literature if necessary. As this review intends to understand contemporary pharmacy practice behaviours, only literature published from 2000 onwards was included. The search was limited to articles published in the English language.

Information sources

Search strategy

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the Joanna Briggs Institute EBP database was conducted on the 1 March 2021 and rerun on 21 October 2022 and no current or underway systematic or scoping reviews on the topic were identified. An initial limited search of Scopus and Embase was undertaken to identify key articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy for Embase (online supplemental appendix 2). The search strategy, including all identified keywords and index terms, was then adapted for each included electronic database. The electronic databases searched included Scopus, Embase (Ovid), PsycINFO (Ovid), PsychArticles (Ovid), Emcare (Ovid) and Medline (Ovid). Databases were searched from 1 January 2000 to 21 October 2022 for peer-reviewed literature. The reference list of all articles selected for inclusion was then screened for additional peer-reviewed articles that fit the inclusion criteria.

Selection of sources of evidence

Following the search, all identified citations were collated and uploaded into the EndNote V.X9 (Clarivate Analytics, Pennsylvania, USA). Titles and abstracts were reviewed manually to identify and remove duplicates. A two-stage screening process was undertaken (online supplemental appendix 3). Titles and abstracts were then independently screened by two researchers (DM and RL or DD’L) for assessment against the inclusion criteria (online supplemental appendix 3). Full text for potentially relevant articles was then retrieved. Where full-text articles were unable to be located, university librarians and journal editors were contacted to request access. Full-text articles were then independently reviewed by two researchers (DM and RL or DD’L) for relevance to inclusion criteria, with a particular focus on if the article described behaviours related to professionalism in registered pharmacists. Reasons for exclusion of full-text articles that did not meet the inclusion criteria were recorded and are reported in figure 1. Any disagreement at each stage of the screening process was resolved by discussion between the two researchers screening. These two researchers were directed to independently rereview the exclusion criteria and identify which criterion and the article characteristic(s) that led to their decision to include/exclude the article. Each reviewer then presented their interpretation to the other, which promoted further discussion until agreement could be met. Often discrepancies were due to one reviewer’s area of expertise, allowing for a more complete interpretation of the article and its particular scope (e.g., the language used to describe pharmacy students or graduates varied and was unfamiliar to the behaviour change focused researcher). If agreement
could not be met, the same rationale was presented by each researcher to an independent third researcher (JJ) who then applied their own review of the exclusion criteria to make the final decision.

Data charting process and data items

Data were extracted from articles included in the scoping review independently by two researchers (DM and DD’L) using a data extraction tool developed by the researchers and piloted on three articles prior to use (see online supplemental appendix 4). Information extracted included citation details, study and article type, study or article objectives, country that the article/study was based in, participants, the pharmacist practice context and any phrase illustrative of a behaviour that contributes to pharmacist professionalism, per the review definition of behaviourally relevant content. For research studies and systematic literature reviews, behavioural content was extracted from the results section only. For commentary and opinion piece articles, behavioural content was extracted from all sections of the article, as for this type of article there is no clearly defined results section. Extracted data were summarised and tabulated according to the study/article it was identified from. Any differences in the data extracted by the two researchers (DM and DD’L) were identified and reviewed again by each researcher with reference to the definition of each data item, the inclusion/exclusion criteria, and the overarching purpose of the scoping review. Discussions then occurred until consensus on data to include was reached.

Critical appraisal of individual sources of evidence

Methodological quality of the articles included was not of relevance to the review question and is not typically included in scoping reviews where the intention is to provide an overview of current evidence, not a critically appraised synthesised answer to the review question.47 51

Synthesis of results

Familiarisation

Extracted behaviourally relevant content was read and re-read for familiarity by two researchers (DM and DD’L). Initial impressions of the data from the extraction and familiarisation stage were then discussed between the two researchers to ascertain any observations that may assist in summarising and representing the extracted data. Both researchers agreed that there were two obvious categories of behaviours present in the data. The first category included description of behaviours that are physical, process driven and facilitated by hard skills (ie, dispensing medicines) and could only be completed by a pharmacist or an equally suitably trained individual. The second included description of cognitive and inter and intrapersonal behaviours facilitated by soft skills (ie, displaying empathy) that are useful to a pharmacist in their practice but not necessarily exclusive to pharmacists’ behaviour and would be considered transferable to other professions and roles. The researchers discussed that when comparing these two groups of behavioural descriptions, those in the first were more specifically described in terms of action than the second group and it was important to ensure this was represented in the way they were presented. The utility of these categories was discussed with the broader research team and it was agreed that these were more appropriately categorised as descriptions of technical and non-technical behaviours in line with the expectations of pharmacy student graduate competencies and employer expectations. Therefore, if categorised in this way, the behaviours identified could be readily compared and translated to those described in education or professional guidance documents. Further, it was observed that the extracted behaviours were often non-specific in terms of what needs to happen, with whom, where and when. To summarise the extracted behaviours, it was agreed that the type of behaviour needed to be represented, as well as the contextual information that clarified who needed to do what, where, when and with whom.

Prior to initiating coding, both researchers agreed on definitions for technical and non-technical behaviours. The definitions of these types of behaviours can be found in online supplemental appendix 5 and were adapted from definitions of technical and non-technical skills readily found in the literature.52–55 A behavioural specification framework was applied to assist in understanding the level of specific description of the contextual information extracted with the behavioural content. Assessing the level of description in the included literature has the potential to identify areas for improvement in future documentation of these behaviours. As described in the introduction of this paper, behavioural specification frameworks are a useful tool for clarifying who needs to do what, where, when, who with and how often or how long. This level of description can facilitate clearer observation and evaluation of a behaviour and its direct influences so that targeted behaviour change interventions may be designed. The Action, Actor, Context, Target, Time (AACTT) framework46 was selected and adapted for this purpose (online supplemental appendix 5). Here, Action is the behaviour under review, Actor is the person or persons enacting the behaviour, Context is where the behaviour occurs, Target is with whom or for whom the behaviour is performed and Time is when/how long the behaviour should occur. The AACTT framework was selected as the behavioural specification framework of choice, given it has been recently updated and includes robust definitions for each criterion which could be easily adapted for this purpose.46 Furthermore, the AACTT framework has been successfully utilised to retrospectively assess the specificity of behaviours described in professional practice standards for pharmacists, and guidelines for managing deteriorating patients in hospitals, which is indicative of its flexibility to be adapted to different context such as ours.43 46 Given the action was already being assessed in the behavioural categorisation stage of synthesis, it was agreed that the extracted data was only assessed for Actor, Context, Target and Time (ACTT) (online supplemental appendix 5).
Summarising the types of behaviours
One researcher (DM) deductively coded the extracted behavioural content data fragments according to if the behaviour described met the review definition for technical or non-technical behaviour (online supplemental appendix 5). The categorisation of these data fragments was then reviewed by a second researcher (DD’L) for agreement. Within each category, DM then inductively coded data fragments by labelling with a descriptive code (eg, communication). As new codes were generated, DM revisited previously coded data to ensure consistency in application of each code. DM then reviewed these descriptive labels and summarised similar codes into themes/categories of behaviour and assigned each category a description. The coding of the data fragments, along with their descriptions, were then summarised in a framework matrix that was reviewed by a second researcher (DD’L) to ensure consistency in coding and description of the data. Here, disagreements were resolved between DD’L and DM. This process included a review of the original extracted uncoded data fragments and review of the code and category definitions which were then discussed along with the researchers’ viewpoints until consensus was reached.

Summarising the actor, context, target and time of the behaviours
Data fragments of the extracted behavioural content were reviewed and relevant references to ACTT criterion were deductively coded by one researcher (DM) according to the definitions presented in online supplemental appendix 5. A framework matrix was then generated for a second researcher (DD’L) to review the consistency of the coding with review definitions. At this stage, disagreements were resolved through discussion (DM and DD’L). This process included a review of the original extracted uncoded data fragments and review of the code definitions which were then discussed along with the researchers’ viewpoints until consensus was reached. DM then summarised the coded data of the framework according to each study and the ACTT criterion. Where no data was able to be coded to an ACTT criterion, this was indicated and the extracted study data (aim, participants) was reviewed to fill the gap. DD then reviewed the final summaries for consistency with the pertaining coded data and results were tabulated for presentation. Any disagreements were resolved through the review process described above (review data fragment, review definitions and discuss until agreement).

RESULTS
Selection of sources of evidence
The initial search strategy identified 2033 records, of which 916 duplicates were removed, resulting in 1117 records for screening (figure 1). After title and abstract screening, full text were retrieved for 129 articles. A total of seven articles were included for data extraction, six from the original search, and one from the reference list search of those articles that were included (figure 1).

Characteristics of sources of evidence
The characteristics of the included articles are documented in online supplemental appendix 6. Of the seven articles included, three were original research articles, three were commentaries and one was a systematic review. Half (n=4) of the articles were written by authors based in the USA, with three out of four of these articles commentaries that share a common first author. The two qualitative original research articles were written by authors from the UK and the systematic review was conducted by Australian and New Zealand researchers with no limits on the country in their review.

Synthesis of results
The results of the synthesised sources of evidence are presented in tables 1–3.

A summary of the categories of technical and non-technical behaviours identified from the extracted behavioural content is presented in tables 1 and 2. Thirteen categories of nontechnical behaviours were identified. These were ‘takes responsibility for own actions and decisions’; ‘engages in the practice of lifelong learning’; ‘effective representation of the profession’; ‘dresses and maintains a professional appearance and appropriate hygiene’; ‘responds to challenges and opportunities’; ‘manages time efficiently and punctually’; ‘provides an appropriate learning environment’; ‘evaluates others, including peers and students’ performance and provides feedback’; ‘asks for, receives and actions feedback’; ‘resolves conflict’; ‘communicates effectively with adaptation of style and approach when necessary’; ‘demonstrates altruism when serving patients’ and ‘establishes effective relationships’ (see table 1).

Five categories of technical behaviours were identified. These were ‘complies with regulations, codes and operating procedures’; ‘applies knowledge to provide care and consult patients’; ‘maintains appropriate records for different situations’; ‘provides opportunities for education and training of pharmacy students’ and ‘supplies medicines accurately to patients’ (see table 2).

Behavioural content in the ‘establishes effective relationships’ and ‘complies with regulations codes and operating procedures’ categories were identified for all seven articles. Behavioural content in the ‘resolves conflict’ and ‘provides appropriate learning environment’ were only identified in two articles. All articles identified behavioural content in at least one category of technical and nontechnical behaviours. One article, by Hammer et al, identified behavioural content in all categories except one. The article by Hutchings et al identified behavioural content in the least number of categories (n=7/18). Articles by...
### Table 1  Non-technical behaviour categories identified through coding and categorisation of extracted behavioural descriptors

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<tr>
<td>Takes responsibility for own actions and decisions</td>
<td>Pharmacist is accountable, dependable, reliable and responsible. Pharmacist demonstrates this by admitting their own mistakes, recognising the limits of their knowledge, holding themselves and others in the profession to account for their behaviour and meeting their commitments to others.</td>
<td>✓</td>
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<td>Engages in the practice of lifelong learning</td>
<td>Pharmacist commits to, promote, support and engage in lifelong learning to ensure they have the knowledge needed to care for patients and perform their duties. This is often a self-directed process and includes pharmacists seeking more information when necessary.</td>
<td>✓</td>
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<td>Effective representation of the profession</td>
<td>Pharmacist understands the expectations of the profession and demonstrates pride in it. The pharmacist advocates for positive change within the profession.</td>
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<tr>
<td>Dresses and maintains a professional appearance and appropriate hygiene</td>
<td>Pharmacist dresses and maintains a professional appearance in line with the accepted protocols of their work environment. This includes demonstrating good hygiene and maintaining a neat workspace.</td>
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<tr>
<td>Responds to challenges and opportunities</td>
<td>Pharmacist demonstrates a desire to seek out and take on new challenges and roles in their career. They are also able to adapt to current challenges in the workplace. This is shown through behaviours that demonstrate their creativity, adaptability, initiative and innovation.</td>
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<td>Manages time efficiently and punctually</td>
<td>Pharmacist adheres to established timelines for different activities, completes tasks in a timely manner and are considered punctual.</td>
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<tr>
<td>Provides an appropriate learning environment</td>
<td>Pharmacist fosters a professional environment for teaching professional behaviour to students by role modelling and guiding professional socialisation by promoting appropriate professional behaviour.</td>
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<tr>
<td>Evaluates others, including peers’ and students’ performance and provide feedback</td>
<td>Pharmacist evaluates others' (peers and students) performance and provides constructive and specific feedback. Pharmacists should give this feedback as close to the observed activity as possible along with appropriate encouragement.</td>
<td>✓</td>
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<tr>
<td>Asks for, receives and actions feedback</td>
<td>Pharmacist accepts and applies constructive criticism appropriately. The pharmacist empowers the patient to provide feedback on their professionalism.</td>
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<tr>
<td>Resolves conflict</td>
<td>Pharmacist demonstrates skills of conflict resolution and works with others to do so. Pharmacist identifies internal conflict when their values or motivation are in conflict with what is best for the patient, including avoiding relations that would put personal gain above the needs of the patient.</td>
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<tr>
<td>Communicates effectively with adaptation of style when necessary</td>
<td>Pharmacist communicates articulately and effectively with staff, peers, patients and other health professionals by differentiating and adapting interactions with respect to culture, race, religion, ethnic origin and gender where appropriate. Pharmacist communicate with confidence and employ different communication strategies and styles for clear communication with different individuals. Pharmacist share sufficient information for patients to make informed decisions. Pharmacist explain to patients and carers why something may take time to resolve. Pharmacist listen to patients and demonstrate active listening skills. Pharmacist stay calm and maintain a polite and pleasant manner with patients when under pressure.</td>
<td>✓</td>
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<tr>
<td>Demonstrates altruism when serving patients</td>
<td>Pharmacist consistently puts patient needs before profits and convenience. This includes advocating for patients access to care regardless of ability to pay, demonstrating a desire to exceed expectations and demonstrations of charity. The pharmacist promotes patient welfare and seeks justice in equitable distribution of health resources.</td>
<td>✓</td>
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<tr>
<td>Establishes effective relationships</td>
<td>Pharmacist establishes effective relationships with their patients, students and other healthcare professionals. This is achieved through behaviours that demonstrate the pharmacist is willing to collaborate, is honest, is empathetic, is trustworthy, is respectful, is approachable, is mature, is polite and courteous, is attentive, is compassionate, a team player, is tolerant, has integrity, is kind, is loyal and genuinely cares for the patient. Pharmacist establishes and maintains appropriate boundaries in their relationships with others with particular regard for maintaining confidentiality and privacy of patients.</td>
<td>✓</td>
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Table 2  Technical behaviour categories identified through coding and categorisation of extracted behavioural descriptors

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<tr>
<td>Complies with regulations, codes and operating procedures</td>
<td>Pharmacists’ actions and processes are compliant with the legislation, regulation and codes that govern their behaviour and registration as a health professional. This includes adherence to law, upholding principles of confidential treatment of information and emulating the principles in codes of ethics. This also includes compliance with standards, local regulations and standard operating procedures. Maintaining competence is also included here given it is an essential component of meeting regulatory requirements.</td>
<td>✓</td>
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<tr>
<td>Applies knowledge to provide care and consult patients</td>
<td>Pharmacist actively applies medicines knowledge to consult patients and assist with their queries. This includes providing medicines advice and information, provision of medicines reviews, ensuring medicines are clinically appropriate for the individual and monitoring of the patients’ progress.</td>
<td>✓</td>
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<tr>
<td>Maintains appropriate records for different situations</td>
<td>Pharmacist maintains written and electronic records of their patients, consults, services and processes.</td>
<td>✓</td>
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<tr>
<td>Provide opportunities for education and training of pharmacy students</td>
<td>Pharmacist identifies and makes time to facilitate opportunities for education and training of students in the clinical setting.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Supplies medicines accurately to patients</td>
<td>Pharmacist dispenses and supplies medicines accurately as per prescriptions or patient requests. Fostering a conducive environment is also important here.</td>
<td>✓</td>
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Table 3  Summary of extracted behavioural content according to descriptions of Actor, Context, Target and Time

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<th>Citation details</th>
<th>Actor</th>
<th>Context</th>
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<tr>
<td>Dubbai et al10 2019</td>
<td>Extracted data referred to pharmacist(s).</td>
<td>Extracted data referred to pharmacists’ practice or pharmaceutical practice.</td>
<td>Extracted data referred to the patient, others, patients, healthcare professionals, colleagues, team and other pharmacists.</td>
<td>Extracted data referred to a daily basis and while counselling patients.</td>
</tr>
<tr>
<td>Duke et al57 2005</td>
<td>Extracted data did not specifically refer to an individual or individuals as the Actor but it is assumed given the aim and methods of the study that it is a pharmacist who is referred to as a pharmacy professional.</td>
<td>Extracted data referred to classroom, laboratory, clinical settings, extracurricular activities, professional meetings, academic or professional environment, healthcare environments and appropriate interactions with respect to culture, race, religion, ethnic origin and gender.</td>
<td>Extracted data referred to faculty, staff, peers, patients, other health professionals and others.</td>
<td>Extracted data referred to a timely fashion and a timely manner, as well as circumstances such as when representing the college or when receiving criticism.</td>
</tr>
<tr>
<td>Elvey et al13 2015</td>
<td>Extracted data referred to early career pharmacists, pharmacists and pharmacy tutors (practising pharmacists responsible for supervising preregistration pharmacists).</td>
<td>Extracted data referred to practice and community pharmacy.</td>
<td>Extracted data referred to the patient or patients, the pharmacy regulatory body, other pharmacy’s, staff and a parent.</td>
<td>Extracted data referred to circumstances such as before giving something to a patient, when a medicine was out of stock or when advising/interacting with patients.</td>
</tr>
<tr>
<td>Hammer14 2000</td>
<td>Extracted data referred to pharmacists.</td>
<td>Extracted data referred to patient and pharmaceutical care.</td>
<td>Extracted data referred to peers, other healthcare professionals, healthcare team, peers, humankind, individuals, society, the profession and others.</td>
<td>Extracted data referred to circumstances such as when interacting with others or consistently demonstrating the action.</td>
</tr>
<tr>
<td>Hammer et al25 2003</td>
<td>Extracted data referred to pharmacist(s), practitioner(s), preceptor(s), pharmacy professional(s), personal and individual.</td>
<td>Extracted data referred to professional situations, tasks and interactions, care and pharmaceutical/patient care, prepharmacy student clubs, advanced practice experiences and environments.</td>
<td>Extracted data referred to with patients and their families, peers and other healthcare professionals, others, healthcare team, employers, society, public, profession, other pharmacists, others and students.</td>
<td>Extracted data referred to circumstances such as when interacting with patients and during the therapy decision making or prescribing decision process. Or referred to time as ongoing, such as consistently demonstrating the action and lifelong actions.</td>
</tr>
<tr>
<td>Hammer18 2006</td>
<td>Extracted data referred to pharmacist(s), preceptor(s) and practitioners.</td>
<td>Extracted data referred to professional situations, professional practice environment, practice, patient care, experiential learning process and the experience.</td>
<td>Extracted data referred to with patients and their families, peers and other healthcare professionals/providers, others, healthcare team, employers, society, public, profession, other pharmacists, staff, one another, others and students.</td>
<td>Extracted data referred to circumstances such as professional situations, when interacting with others, during experiences. Or time references such as, consistently, frequent, real time, immediately, as soon as possible, weekly or biweekly.</td>
</tr>
<tr>
<td>Hutchings et al25 2010</td>
<td>Extracted data referred to pharmacist, pharmacist(s) and qualified professionals.</td>
<td>Extracted data referred to community pharmacy and the local community.</td>
<td>Extracted data referred to patient(s), other healthcare professionals, pharmacy team, support staff and associated staff.</td>
<td>Extracted data referred to any time and regular.</td>
</tr>
</tbody>
</table>

Hammer, identified behavioural content in all the educational related behavioural categories.

A summary of the actor, context, target and time of the extracted behaviours within each article is presented in table 3. Six out of the seven articles directly referred to ‘pharmacist’ or ‘pharmacists’ as an Actor for the identified behaviours. Some of these articles also described the pharmacist more specifically according to the role they were playing including tutor or preceptor or more broadly as individual or professional. All articles referred to at least one broad Context for the identified extracted behaviours, these were generally referring to pharmacists’ practice and care. All articles referred to several different Targets for the identified behaviours and most included patients, other health professionals, healthcare team, colleagues or the profession and society. All articles referred to at least one Time reference for identified behaviour to occur with most indicating a certain.
circumstance to trigger the behaviour, as well as the mention of timely or continuing behaviours.

**DISCUSSION**

Peer-reviewed literature describing behaviours that contribute to professionalism in registered pharmacists is scarce. This review offers for the first-time collective insight into what and how behaviours that contribute to pharmacist professionalism are described in peer-reviewed literature. Both technical and non-technical behaviours were identified and grouped into 18 different categories. The utility of the behavioural descriptions and categories identified to observe and measure professionalism in registered pharmacists is limited by the broad nature in which they were described and the unclear distinction between behaviours, influences and outcomes. This discussion will first consider the categories of behaviour identified and their reflection of contemporary pharmacy practice, followed by the challenge of separating behaviours from influences and outcomes, and how specificity in the way the behaviours were expressed impacts their utility.

High level broad categories of technical and non-technical behaviours were identified, with all articles describing behaviours that grouped under ‘complies with regulations, codes and operating procedures’ and ‘establishes effective relationships’ categories. Given compliance with regulations and codes of practice is usually a key component of registration and a general overarching expectation for pharmacists, this was anticipated. Further, ‘establishes effective relationships’ is a category of behaviours that is critical for all pharmacists in their role, and is reflective of the interplay between professionalism, relationships and trust.

All behavioural categories identified were consistent with expectations of the profession as described in the FIP’s Global Competency framework and other national codes and standards. Some of these categories, such as ‘dresses and maintains a professional appearance and appropriate hygiene,’ ‘effective representation of the profession’ and ‘demonstrates altruism when serving patients’ have likely been expectations of the profession for many years. Other categories of behaviours such as ‘asks for, receives and actions feedback,’ ‘engages in the practice of lifelong learning’ and ‘responds to challenges and opportunities’ may be more reflective of the expanding roles of pharmacists. Generally, the technical behaviours were more likely to be specific and describe independent behaviours that historically reflect the pharmacist’s role in medicines supply and the responsibilities that come with it (eg, record keeping). Conversely, non-technical behaviours were often described in broad terms and thus were non-specific. Clearly, overall behaviours that are described to contribute to pharmacist professionalism are numerous, complexly interwoven and interdependent.

Description of influences, behaviours and outcomes were interwoven in articles and made it challenging for researchers to separate out, extract and interpret the behavioural descriptors identified. We found broad behavioural statements were often intertwined with descriptions of attitudes, values and traits. All of which we would consider to be types of behavioural influences subsequently, potential outcomes. This focus on exploring, measuring and describing behavioural influences is also reflected in broader Social Pharmacy and Pharmacy Education literature where exploration of professional identity and skill formation is prevalent, particularly in new practice settings (eg, general practice). While influences, behaviours and outcomes are all important to consider, from a behaviour change perspective they serve different purposes for intervention design and thus it must be clear which is which. Outcomes are often what is measured to determine success of interventions, for example, we may want patients to be better informed about their medicines. The behaviour to achieve this may be that pharmacists need to counsel every patient on medicines side effects. Whereas the influence may be that pharmacists need the drug knowledge and the communication skills necessary to provide the counselling. If the behaviour and outcome are clearly understood, then we can clearly assess potential influences and ascertain if the presence or absence of them may change the behaviour of the pharmacists and subsequent outcome for the patient. The broad nature of the behavioural descriptions identified from the included articles make it difficult to consistently identify if descriptions were intended as influences, behaviours or outcomes and thus limits our ability to directly use them in applications of behavioural science to monitor and assess the professionalism of the profession.

Specification of the identified behaviours was lacking. The ‘pharmacist’ was identified as the actor in almost all cases, context, time and target were less obvious and infrequently specified in the identified behavioural content. For example, ‘provide patients with reliable advice’, lets the reader know what needs to be done and for whom, but it does not say who, where, or specifically when. Without knowing this information, we would not be able to clearly judge if a pharmacist has demonstrated the intended behaviour. Broadly describing behaviour has the advantage that it can potentially be interpreted and applied to an individual’s own context and may be a reasonable approach to documenting behaviours in the articles identified. However, broadly specifying a behaviour places the responsibility of interpreting it on the individual who may be biased by their own perspective and result in an interpretation and application different from the intention of the original writers. Thus, broad behavioural descriptions may also lead to inconsistent interpretation of the behaviours that result in practice inconsistencies. This may also make the identified behaviours difficult for educators to teach and measure in students and learners, as has been acknowledged in previous work, being specific is a necessary component of any tool.
ability to interpret and describe the identified behaviour in terms of who needs to do what, where, with whom and when. These unspecified descriptions of behaviour are limited in future application and research as it would be difficult for individual, the profession, policy-makers and/or researchers to observe or measure the behaviour of pharmacists. If a change in a particular behaviour was desired, broad behaviour descriptions would also make it difficult to clearly identify influences on these behaviours that may need to be changed.44–46 The initial step in designing behaviour change interventions is often the selection and specification of a behaviour.44–46 It is widely accepted in the field of behavioural science that without clear specification, using a framework such as AACTT, it is incredibly difficult to explore influences that may need to be targets for change and map subsequent behaviour change techniques to design interventions to change them.44–46 Again, this limits our ability to use the identified descriptions to monitor, assess and change the perceived professionalism of the profession.

Strengths and limitations
Consideration of pharmacist professionalism through a behavioural lens and with the aid of a behavioural specification framework is a considerable strength of this study as it clearly highlights gaps in our evidence base and current communication of professional behaviours. Given the nature of a scoping review, there are limitations that should be noted when interpreting the findings of this work. First, the article types included were diverse (eg, opinion, literature review, primary research) and some cross-over in content and referencing was observed which had the potential to contribute to repeated representation of an identified behaviour if two or more articles cited the same paper or idea. To minimise over emphasis of any behaviour due to cross referencing, we did not quantitatively report on the behaviours identified or the number of times they appeared in a given article. Including all article types was considered necessary to ensure a comprehensive understanding of work in the area even if attributed to a single viewpoint or the same original sources of information. The content of the included articles was also potentially extracted and reinterpreted in a manner likely not consistent with each article’s original intention. Reinterpreting information originally meant for a different purpose is common in literature reviews and, in this case, offers valuable insights into how behaviour has previously been communicated. Challenges with deductively categorising the extracted behaviours arose as often behaviours were expressed in a non-specific manner and a number of categories had the potential for overlap considering these things do not occur in isolation in practice and are rather interrelated and inter-reliant (eg, communication and effective relationships). A more inductive approach to analysis and categorisation of the behaviours may have reduced the challenges observed with overlap, but also would likely have resulted in broad categories that were difficult to summarise in a useful manner or link to education and employer practices as was done in this review. To ensure reproducibility, multiple reliability checks were completed at each stage of screening, data extraction and synthesis by two members of the research team with expertise in the application of behavioural science and pharmacy practice. Further, of the articles included, the majority were published prior to 2011, were from the same country and three of seven had the same author. Thus, the generalisability of the identified behaviours may be limited to these individuals and their respective practice settings. Professionalism was a key search term for this review and it is possible that articles may have discussed professional behaviours that contribute to professionalism without specifically using this term. These articles could have been omitted from our search and may not have met our inclusion criteria. However, we were strictly interested in articles that acknowledged the concept of professionalism and connection to professional behaviour. While it is acknowledged that practice standards and similar may also offer insights on behaviours that contribute to professionalism, grey literature was excluded from this review as the intention of the review was to understand the academic literature and viewpoint to identify the perspective of the research community rather than the profession itself.

Future work should consider exploring and comparing documents outside of the peer-reviewed literature that are expected to detail and guide professional behaviour of pharmacists, such as practice standards and guidelines. Consideration of what behaviours these other documents articulate and how they are communicated would allow for an assessment of their ability to be used as tools to assess and monitor the behaviour of the profession and the theory informed design of behavioural interventions if necessary. Further, the categories of behaviours identified in this study may be used as a starting point to inform more specific actionable behaviours for the profession that are able to be used to observe and measure practice.

CONCLUSIONS
Peer-reviewed literature describing behaviours that contribute to professionalism in pharmacists is scarce. The results of this review offer some insight into what broad categories of behaviour constitute professionalism for pharmacists, however, as they are currently presented, it was difficult to clearly separate descriptions of behaviours from their relevant influences and outcomes. Work to better specify these behaviours in a manner that is useable to individuals and the profession would be beneficial. Behaviour change models, frameworks and theories may offer some insights into the place of influences and outcomes, as well as behavioural specification that could be used to inform further development of these identified categories of behaviours into actionable and measurable statements.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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REFERENCES
## Appendices

### Appendix 1- Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

<table>
<thead>
<tr>
<th>SECTION</th>
<th>ITEM</th>
<th>PRISMA-ScR CHECKLIST ITEM</th>
<th>REPORTED ON PAGE #</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE</td>
<td>Title</td>
<td>Identify the report as a scoping review.</td>
<td>See title page. Page 1.</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>Structured summary</td>
<td>Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.</td>
<td>See abstract. Page 2.</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>Rationale</td>
<td>Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.</td>
<td>See Introduction. Page 3.</td>
</tr>
<tr>
<td></td>
<td>Objectives</td>
<td>Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.</td>
<td>See Introduction. Page 3-4.</td>
</tr>
<tr>
<td>METHODS</td>
<td>Protocol and registration</td>
<td>Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.</td>
<td>See Methods. Page 4.</td>
</tr>
<tr>
<td></td>
<td>Eligibility criteria</td>
<td>Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.</td>
<td>See Methods. Types of sources and Search strategy. Page 4.</td>
</tr>
<tr>
<td></td>
<td>Information sources*</td>
<td>Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.</td>
<td>See Methods, Search Strategy. Page 4-5.</td>
</tr>
<tr>
<td></td>
<td>Search</td>
<td>Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.</td>
<td>See Appendix 2.</td>
</tr>
<tr>
<td></td>
<td>Selection of sources of evidence†</td>
<td>State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.</td>
<td>See Methods – selection of sources, (page 5) and Appendix 3.</td>
</tr>
<tr>
<td></td>
<td>Data charting process‡</td>
<td>Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.</td>
<td>See Methods- data charting process (page 5), Appendix 4</td>
</tr>
<tr>
<td></td>
<td>Data items</td>
<td>List and define all variables for which data were sought and any assumptions and simplifications made.</td>
<td>See Methods- data charting process and data items (page 5), Appendix 4</td>
</tr>
<tr>
<td></td>
<td>Critical appraisal of individual sources of evidence§</td>
<td>If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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methods used and how this information was used in any data synthesis (if appropriate).

Synthesis of results 13 Describe the methods of handling and summarizing the data that were charted.

See Methods synthesis of results (page 5-6), Appendix 5

RESULTS

Selection of sources of evidence 14 Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.

See Results (page 6) and Figure 1

Characteristics of sources of evidence 15 For each source of evidence, present characteristics for which data were charted and provide the citations.

See Results (page 6-7) Appendix 6

Critical appraisal within sources of evidence 16 If done, present data on critical appraisal of included sources of evidence (see item 12).

N/A

Results of individual sources of evidence 17 For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.

See results (page 6-7) Table 1-3 and Appendix 6.

Synthesis of results 18 Summarize and/or present the charting results as they relate to the review questions and objectives.

See results (page 6-7) Table 1-3 and Appendix 6.

DISCUSSION

Summary of evidence 19 Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.

See discussion (pages 7-8)

Limitations 20 Discuss the limitations of the scoping review process.

See Limitations (page 9)

Conclusions 21 Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.

See Conclusions (page 9)

FUNDING

Funding 22 Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.

See Funding (page 10)

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with information sources (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of “risk of bias” (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Appendix 2- Data base search strategies

Embase (Ovid)

1  exp Pharmacists/
2  (pharmac* or pharmac* profession* or pharmac* pract* or chemist* or druggist*).mp.
3  1 or 2
4  exp Professionalism/
5  (professionalism or patient centred professionalism).mp.
6  4 or 5
7  exp Behavior/
8  (behandio?r* or conduct* or practice* or professional behavio?r* or trait* or attribute* or attitude* or characteristic*).mp.
9  7 or 8
10  3 and 6 and 9
11  Limit 10 to (English language and yr="2000-Current")
### Appendix 3 - Exclusion criteria considered by research team at each stage of screening

<table>
<thead>
<tr>
<th>Screening Stage</th>
<th>Exclusion criteria</th>
</tr>
</thead>
</table>
| **Stage 1 screening – title and abstract** | 1. Aim of article was not to discuss, describe, measure or assess pharmacist professionalism.  
   o Those that only discussed pharmacist professionalism to contextualise background information or results for a study that did not focus on exploring professionalism specifically were excluded. For example, studies designed to primarily assess the impact of an educational intervention on students were excluded even if they used a professionalism instrument to do so.  
   o Articles that’s purpose was to generally describe, or measure competency of pharmacists were also excluded.  
2. The articles did not describe pharmacists professionalism in terms of pharmacists practicing in clinical context.  
   o Educational and research settings where the pharmacist’s main role was teaching or research, such as tertiary institutions were excluded.  
   o Online settings such as use of social media were excluded. |
| **Stage 2 screening – full text**   | 1. Article is not available in English.*  
2. Article was published prior to the 1st of January 2000 (to ensure only contemporary articles were reviewed).*  
3. Full text was not available after contacting the editor.*  
4. Article was classified as grey literature or not published in peer reviewed journal.*  
   o For example, conference abstracts, meeting proceedings, theses, letters to the editor, professional journal articles that were not peer reviewed were excluded.  
5. Aim of article was not to discuss, describe, measure or assess pharmacist professionalism.  
   o Those that only discussed pharmacist professionalism to contextualise background information or results for a study that did not focus on exploring professionalism specifically were excluded. For example, studies designed to primarily assess the impact of an educational intervention on students were excluded even if they used a professionalism instrument to do so.  
   o Articles that’s purpose was to generally describe, or measure competency of pharmacists were also excluded.  
6. The articles did not describe pharmacists professionalism in terms of pharmacists practicing in clinical context.  
   o Educational and research settings where the pharmacist’s main role was teaching or research, such as tertiary institutions were excluded.  
   o Online settings such as use of social media were excluded.  
7. No behaviourally relevant content descriptions were identified in the article. Behaviourally relevant content was defined as descriptions that met the review definition of behaviour.* |

*Indicates an exclusion criterion that was only applied in the stage 2 screening due to insufficient information being readily available in the title and abstract screening stage.
# Appendix 4 - Data Extraction Tool

<table>
<thead>
<tr>
<th>Citation details</th>
<th>Article type (e.g. research, commentary, literature review)</th>
<th>Study Type/Methods (e.g. qualitative focus groups, cross sectional survey)</th>
<th>Study/article objectives (extract verbatim from article)</th>
<th>Country of interest</th>
<th>Participants Who participated in the study? (e.g. registered pharmacists, consumers, medical practitioners)</th>
<th>Pharmacist practice context Who was it about? (e.g. community pharmacy, primary care, hospital pharmacy)</th>
<th>Descriptions of behaviours that contribute to professionalism (extract verbatim from article and indicate what section it has been extracted from e.g. introduction, methods etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5 – Code books for data synthesis

Codebook developed to categorise data as technical or non-technical behaviour to analysis of extracted behavioural content

<table>
<thead>
<tr>
<th>Action/Behaviour category</th>
<th>Review definition (adapted from [52-55])</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-TECHNICAL BEHAVIOURS</td>
<td>Cognitive, social and personal resource behaviours (actions) that complement technical behaviours, and contribute to safe and efficient task performance. Also described as people, non-academic or behaviours (actions) facilitated by soft skills.</td>
<td>e.g. situation awareness; decision-making; leadership; teamwork and communication; managing stress; and coping with fatigue, task management</td>
</tr>
<tr>
<td>TECHNICAL BEHAVIOURS</td>
<td>Physical or technical manipulations and behaviours (actions) facilitated by pharmacy specific background training and knowledge.</td>
<td>e.g. dispensing, recording data, ordering medication, dress and appearance, adherence</td>
</tr>
</tbody>
</table>

Codebook developed to apply Actor Context Target Time from AACTT framework to analysis of extracted behavioural content

<table>
<thead>
<tr>
<th>AACTT Criteria</th>
<th>AACTT Criteria original definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTOR</td>
<td>The individual or group of individuals who perform (or should/could) the Action.</td>
<td>‘The pharmacist …’</td>
</tr>
<tr>
<td>CONTEXT</td>
<td>The physical location, emotional or social setting in which the Actor performs (or should/ could) the Action.</td>
<td>‘pharmacy practice’ or ‘clinical settings’</td>
</tr>
<tr>
<td>TARGET</td>
<td>The individual or group of individuals for/ with/ on behalf of whom the Actor performs the Action.</td>
<td>‘for patients’ or ‘discusses with the prescriber’</td>
</tr>
<tr>
<td>TIME</td>
<td>The time period and duration that the Actor performs the Action in the Context with/for the Target. (For this study the research team will also consider where time is dependent on a set of circumstances if these have been explicitly stated e.g. ‘when’.)</td>
<td>‘Before supply of medication’ or ‘all mentoring opportunities’ or ‘when services are provided or refused’</td>
</tr>
</tbody>
</table>
### Characteristics of included articles

<table>
<thead>
<tr>
<th>Citation details</th>
<th>Article type</th>
<th>Study Type/Methods</th>
<th>Study/article objectives</th>
<th>Country of interest</th>
<th>Participants</th>
<th>Pharmacist practice context</th>
<th>Extracted descriptions of behaviours that contribute to professionalism</th>
</tr>
</thead>
</table>
| Dubbai et al., 2019[2] | Literature Review | Systematic review | To identify the definition of professionalism, particularly in relation to pharmacy practice, and critically appraise published instruments for assessing professionalism in pharmacy practice. To identify gaps in the literature with a view to improving professionalism and education of pharmacists—and hence, care provision—in pharmaceutical practice. | Not limited – authors based in Australia and New Zealand | Not limited | Not limited | All extracted information comes from results: 
- Definition of professionalism section: In 1999 the American Pharmacists Association, Academy of Students Pharmacists (APHA-ASP) and the American Association of College of Pharmacy (AACP) Task Force on Pharmacy Professionalism outlined the following 10 essential domains that professional pharmacists should demonstrate in their practice: knowledge and skills of the health profession; service orientation; creativity, innovation and initiative; effective relationships with others; conscience and honesty; commitment to self-improvement through lifelong-learning; ethically sound decision making; leadership; pride in profession; and accountability [13,15]. In addition to the 10 domains of professionalism, the AACP Task Force added an 11th element: pointuality and flexibility [14,18], on the basis that being punctual and flexible is an essential reflection of one’s professional reliability and career values [19]; Hammer et al. [16] further modified the 6 domains of professionalism proposed by the ABIM to suit pharmacy students, particularly noting responsibility, initiative, maturity, appearance, competence, standards, and interpersonal communication skills. 
- Professional behaviours and attitudes section: A pharmacist demonstrating professional behaviour, on the other hand, will encourage the patient to ask questions, address those questions and concerns, and suggest solutions to any problems identified by the patient. He or she will do as much as possible to assist the patient to come to the best decision. 
- Models of professionalism in pharmacy section: Some of the duties of pharmacists include protecting patients’ confidentiality and preventing harm caused by medications. Similarly, the umbrella model of professionalism serves as a symbol of how pharmacists act to protect patients’ safety and maintain the integrity of pharmaceutical practice. In the bicycle wheel model, the wheel hub includes a set of critical values, such as integrity and altruism, and the radiating spokes represent pharmacists’ behaviours, such as empathy and respect. The spoke connects all the elements of professionalism and in-cludes aspects such as adhering to professional attire and punctuality. In this model, practitioners’ values are the core of professionalism (Fig. 3) [25] and professionalism for pharmacists relies mostly on performance, interaction, and professional behaviour with patients on a daily basis. In this model, principles such as honesty and accountability; (4) citizenship and professional engagement; and (5) lifelong learning and adaptability. Eight principles into pharmacists’ practice, for instance, communication while counselling patients; Optimal medication management requires active interpersonal collaboration among pharmacists, patients, and healthcare professionals. As pharmacists’ roles change, making them more actively involved in direct patient care, effective communication with patients becomes crucial. 
- Professionalism Assessment Tool section: The developed 33-item PAT included 5 domains: (1) upholding principles of integrity and respect; (2) relationships with others; (3) reliability, responsibility, and accountability; (4) citizenship and professional engagement; and (5) lifelong learning and adaptability. Eight items loaded on the factor ‘upholding principles of integrity and respect,’ with the 2 highest-loaded items being: ‘being respectful of colleagues and patients’ and ‘maintaining honesty and integrity in academic and professional contexts,’ with loadings of 0.87 and 0.86, respectively. In contrast, 9 items loaded on the factor ‘relationships with others.’ The two lowest-loaded items for this factor were: ‘work with team to effect change and resolve conflict,’ and ‘providing effective and constructive feedback,’ with loadings of 0.59 and 0.55, respectively. |
### Duke et al, 2005<sup>2</sup>

**Research**

**Cross-sectional survey**

To determine student agreement with objectives in our college professionalism curriculum competency statement and identify student perceptions about professional behaviour within the college of pharmacy.

| United States | Pharmacy students | Not specified |

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### Elvey et al, 2015<sup>4</sup>

**Research**

**Qualitative - Focus groups**

The purpose of this paper is to explore patient-centred professionalism in early career pharmacists and to describe reported behaviours.

| United Kingdom (England) | Early-career pharmacists, pre-registration pharmacy tutors (preceptors) and pharmacy support staff, practising in community and hospital pharmacy. | Early-career pharmacists - in main patient facing settings (community and hospital pharmacy). |

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### Extracted from Table 3. Comparison of Agreement Rates by Curricular Year for Items on a Survey Concerning Pharmacy Students Attitudes, Values, and Beliefs Regarding Professionalism

Survey items: Interacts effectively in classroom, laboratory and clinical settings; Communicates effectively with faculty, staff, peers, patients, and other health professionals; Demonstrates skills of conflict resolution; Formulates constructive evaluation of others’ performance; Displays positive attitude when receiving constructive criticism; Formulates written communications with professional content and tone; Demonstrates confidence in actions and communications; Demonstrates regard for persons in authority in classroom, laboratory and clinical settings; Demonstrates dependability to carry out responsibilities; Differentiates appropriate interpersonal interactions with respect to culture, race, religion, ethnic origin, and gender; Demonstrates regard for differing values and abilities among peers, other health care professionals, and patients; Acts with honesty and integrity in academic matters and professional relationships; Demonstrates attitude of service by putting others’ needs above one’s own; Demonstrates a desire to exceed expectations; Promotes appropriate drug-taking behavior; Demonstrates professional interactions with patients; Identifies instances when one’s values and motivation are in conflict with those of the patient; Relates to patients in a caring and compassionate manner; Demonstrates ethical standards related to pharmacy practice; Exhibits fitting behavior when representing the UGA College Of Pharmacy in extracurricular activities and professional meetings; Adheres to established times for classes, laboratories, clerkships, and meetings; Complies with established verbal and written deadlines; Responds to requests (written requests, verbal questions, e-mails, telephone calls) in a timely fashion; Performs pharmaceutical care responsibilities in a timely manner; Dresses appropriately in classroom, laboratory, clinical, and professional settings; Maintains personal hygiene and grooming appropriate to the academic or professional environment; Complies with student health requirements for working with patients in various health care environments; Maintains appropriate records (e.g., intern license, CPR certification, immunizations, insurance, skills) to demonstrate professional competence; Complies with regulations regarding confidentiality of information; Utilizes time efficiently; Demonstrates self-direction in completing assignments; Demonstrate accountability for decisions; Demonstrate characteristics of lifelong learning.
practice is governed by various laws and standards which relate to how medicines may be supplied and adhering to these was seen as central to professionalism by our participants. The “code of ethics” produced by the pharmacy regulatory body, standard operating procedures (SOPs) which are found in all pharmacies and set out how tasks (e.g. dispensing a prescription) must be carried out were mentioned repeatedly, as well as other organisational rules and regulations. Both early career pharmacists and pharmacy tutors spoke of using the code of ethics in particular to guide their practice, whereas support staff tended to mention SOPs and company rules. However, participants also suggested that in practice, situations could arise where following the rules might not meet the individual patient’s needs. In GB, most medicines are supplied on a “prescription only” basis. The usual process is for the patient to bring a prescription to a community pharmacy, and exchange this for their medicine, however, an “emergency supply” of a prescription-only medicine is legally permissible; Early career pharmacists similarly acknowledged that rule-following “to the letter” may not always be desirable, particularly for the patient. Thus in some situations, while rules state that medicines should not be altered from the form in which they are supplied, for example as a tablet or a liquid, sometimes they are altered;

Ethical values: Most interviewees, when asked directly to characterise patient-centred professionalism, mentioned values and attitudes such as honesty, trustworthiness, commitment, integrity, compassion and being “patient-focused”, essentially, being a “good pharmacist, who put the patient first; Being “there” for patients when needed, doing more than the minimum, “going the extra mile” were used to characterise good pharmacists; ensure patients were supplied with their medicines, particularly during “out of hours” periods or when a medicine was not easily available; Putting patient needs before financial profits was raised in relation to community pharmacy; Pharmacies sell products and also receive a fee for each prescription item they dispense, but there was little discussion of this type of community pharmacy income, with a few early career pharmacists giving the example of contacting other pharmacies if an item was out of stock, so that the patient could obtain the medicine there (and miss out on the sale or dispensing fee if they ordered it and made the patient come back; The MUR is a service which involves the pharmacist reviewing a patient’s medicine regimen with the aim of ensuring patients get optimum benefit from their medicines. Pharmacies are paid with public (National Health Service) funds for these services. ; Treating patients with compassion and respect were mentioned by all groups of participant. Support staff and tutors repeatedly talked about behaving towards patients with kindness and tolerance, in ways they would wish to be treated themselves, or see their loved ones treated. Maintaining patient confidentiality was raised, with hospital-based participants in particular mentioning avoiding discussing patients “behind their backs”, or in open areas in the hospital. Communication: Participants talked at length about the importance of good communication and interaction with patients. Skills and qualities such as being able to communicate clearly and confidently, being polite, treating patients with respect and listening to them, were mentioned repeatedly throughout the focus groups and there was a strong sense that these were key to fostering trusting relationships between patients and pharmacists; Tutors and support staff emphasised the importance of communicating with patients clearly, being able to use a range of styles and adapting one’s language to the particular interaction; Tutors and support staff also raised the importance of having a confident, convincing manner when advising patients, but again recalled early career pharmacists who seemed to struggle with this.; Being “approachable enough” for patients was considered important, although this did not necessarily mean behaving in the same way as patients, indeed the early career pharmacists quoted below expressed a need to maintain some separation between themselves and non-pharmacists staff and patients. The need to be flexible and to adapt one’s style with different patients was also recognised; Pharmacists, both early career and experienced tutors, considered staying calm and maintaining a polite and pleasant manner with patients, even when under pressure, to be key professional attributes; When the pharmacist explained to the parent why extra time was needed to prepare the prescription – the medicine was complex and high-
| Hammer, 2000²⁵ | Commentary | Not applicable | To discuss the following issues in relation to pharmacy students in academic programs: where appropriate, however, the discussion will also involve faculty members and other personnel: definition of professionalism, professional attitudes and professional behaviours, describe specific components, identify education impacts upon them, share ideas on how to foster and measure them and describe barriers to their development. | United States | Not applicable | Not specified |
| --- | --- | --- | --- | --- | --- |
| Extracted from section on definitions of professionalism: This definition implies a demeanor that is created through a combination of behaviors, including courtesy and politeness when dealing with patients, peers, and other health care professionals. Pharmacists should consistently display respect for others and maintain appropriate boundaries of privacy and discretion. Whether dealing with patients or interacting with others on a health care team, it is important to possess—and display—an empathetic manner.”²⁶ | Extracted from section on components of professional attitudes and behaviours, Table 1. Example attitudes and behaviours for pharmacy students | Behaviours: Takes responsibility for actions, Volunteering, Acts of service, Continued learning, Self-instruction, Behaviors that demonstrate honesty and trustworthiness, Increased receptiveness to new ideas, Dresses appropriately, Punctual, Maintains confidentiality, Comes to class prepared, Actively participates in class activities, such as engages in discussion, Engages in constructive peer assessment, Accepts and applies constructive critique, Desire to seek out and take on new challenges, Fair treatment of all people regardless of demographic characteristics | Extracted from introduction: The spokes radiating from the hub are behaviors demonstrated by the individual: respect, accountability, empathy, compassion, and others. The tire itself is what some could consider ‘icing on the cake’ – dressing professionally, punctuality, acting courteously, exhibiting good grooming habits, and so on. | Extracted from section on Challenges in Defining Professionalism: “Professionalism is displayed in the way pharmacists conduct themselves in professional situations. This definition implies a demeanor that is created through a combination of behaviors, including courtesy and politeness when dealing with patients, peers, and other health care professionals. Pharmacists should consistently display respect for others and maintain appropriate boundaries of privacy and discretion. Whether dealing with patients or interacting with others on a health care team, it is important to possess—and display—an empathetic manner.”²⁶ The term ‘behavioral professionalism,’ ‘behaving in a manner to potentially achieve optimal outcomes in professional tasks and interactions, was developed to establish the relationship between professional behaviors and the structural and attitudinal attributes of professionalism. 27 Behavioral professionalism includes attributes such as reliability and dependability, confidence, active learning, communicating risk – she seemed to understand, became calmer and apolgised for shouting. Although early career pharmacists often cited listening as a communication skill and agreed that it was important, they did not provide concrete examples of where this occurred in practice. |
respectfully and articulately, accepting and applying constructive criticism, behaving ethically, demonstrating a desire to exceed expectations, putting others’ needs above one’s own, and other professional behaviors.

These tenets, as defined by ABIM but adapted specifically for pharmacists, read: Altruism is the cornerstone of professionalism. Pharmacists must serve the best interest of patients above their own or above that of employers. This means that care is not compromised or reduced in quality because of a patient’s inability to pay.

Accountability is required at many levels -- individual patients, society and the profession. Pharmacists are accountable for fulfilling the implied covenant that they have with their patients. They are also accountable to society for addressing the health needs of the public and to their profession for adhering to pharmacy’s code of ethical conduct. Excellence requires a commitment to lifelong learning and knowledge acquisition or retrieval to serve patients. Duty requires that pharmacists be committed to serving patients even when it is inconvenient to the pharmacist. The pharmacist is an advocate for the appropriate care of the patient even if payment cannot be made. Honor and integrity means being fair, being truthful, keeping one’s word, meeting commitments, and being straightforward. They also require recognition of the possibility of conflict of interest and avoidance of relationships that allow personal gain to supersede the best interest of the patient. Respect for others, including other pharmacists, health professionals, patients and their families. This is the essence of humanism, and humanism is both central to professionalism, and fundamental to enhancing collegiality among pharmacists.

What does it mean to “put another’s needs above one’s own”? What do “competence” and “integrity” look like? What does it mean to “demonstrate respect” to others?

Extracted from section on Professional attitudes and behaviors: Does this item refer to behaviors, such as punctuality or follow-through, or does it refer more to communication styles and interpersonal interactions?

Extracted from section on Advocacy, caring, and covenants: Advocacy. Professionals must assume an advocacy role in which they provide sufficient information for patients to make good decisions. To do this, patients must not only be informed about their illnesses and treatment options, but they must also be given ample opportunity to express their understanding, beliefs, and values about the illness and treatment options. They must be given the time and encouragement to ask questions, raise concerns, and express feelings about what is happening to them -- they are not left in isolation by pharmacists to decide on their own. Pharmacists can willingly help with the decision by expressing what they think is advisable.

Extracted from section on Professional Socialization: On the other hand, faculty, practitioners and others must act as role models to display or demonstrate the kinds of attitudes, values, and behaviors expected of students, and must take the lead in guiding and facilitating the professional socialization process.

Extracted from section on Role of professional schools: Pharmacy faculty, administrators and practitioners should consider themselves, and behave accordingly, as coaches of future pharmacists.

Extracted from section on Role of practitioners: The role of the practitioner should be one of mentor, teacher, motivator, and keeper of the flame as it relates to the standards of the profession. The role of the practitioner should be to acknowledge and assist the student in framing didactic knowledge and providing appropriate relevance as it relates to actual practice.

The role of practitioners in APEs is to stimulate student growth and development, challenge student understanding and practice of medication review, and provide the opportunity for students to hone their abilities to demonstrate caring, empathy, and compassion to patients served. Preceptors should provide...
not only the environment but also the appropriate attitudes and behaviors that invite students to explore their health care belief systems and emulate the positive behavior that is modeled by the practitioner and required by the profession.

Extracted from section titled AACP initiatives:

"Display the attitudes, habits, and values required to render pharmaceutical care. 1. Provide pharmaceutical care ethically and compassionately. a. Give the well being of the patient highest consideration in provision of pharmaceutical care. b. Exhibit empathy and a caring attitude when dealing with patients. c. Facilitate the resolution of ethical dilemmas in the provision of optimal pharmaceutical care. d. Respect the dignity and autonomy of individual patients. 2. Provide pharmaceutical care in a professional manner. a. Dress and speak in ways that convey a professional image. b. Maintain personal self-control and professional decorum." Several of these ability-based outcomes involve elements of professionalism, such as Communication, Value and Ethical Decision Making, Social and Contextual Awareness, Social Responsibility, Social Interaction, and Self-learning.

Extracted from section on Relationship of Professionalism to Pharmaceutical Care:

The American Pharmacists' Association states that in order to practice pharmaceutical care, five things must occur: 1. A professional relationship must be established and maintained, 2. Patient-specific medical information must be collected, organized, recorded, and maintained, 3. Patient-specific medical information must be evaluated and a drug therapy plan developed mutually with the patient, 4. The pharmacist assures that the patient has all supplies, information and knowledge necessary to carry out the drug therapy plan, 5. The pharmacist reviews, monitors, and modifies the therapeutic plan as necessary and appropriate, in concert with the patient and healthcare team. Behaviorally, if all of the above structural and attitudinal factors were in place, the practice of pharmaceutical care should inspire more pride in the profession and more frequent demonstrations of integrity, ethics, caring, empathy, responsibility, and putting patients' needs above one's own. Pharmacy professionals would engage in life-long learning behaviors and maintain a high level of competency in order to better serve patients. They may demonstrate more courtesy and respect toward others because that is what is expected of them.

Extracted from section on Relationship of Professionalism to Direct Patient Care:

Patient adherence to therapeutic regimens is also enhanced when pharmacists are able to be a part of the therapy decision-making process, take the time to help educate patients about the therapies, and monitor patients' progress. Medication errors are reduced when pharmacists are able to aid in prescribing decisions as well as practice in environments that allow for thoughtful, high levels of care as opposed to chaotic dispensing of medications. Workloads can be modified to allow for higher levels of care if pharmacists are in positions to make autonomous decisions regarding practice environment and workflow. Additionally, pharmacists exhibiting higher levels of professionalism could be expected to demonstrate higher levels of respect, ethical behavior, empathy, and competence toward patients; these behaviors support greater quality in patient care.

Extracted from section titled Specific areas in schools' programs that directly affect the professionalism of students:

Pre-pharmacy student clubs should be visited by faculty, practitioners, and pharmacy students who make presentations on professionalism, the school's programs and curricula, prepharmacy coursework, the interview process for admissions, and the school's experiential programs.

Preceptor discussion with students regarding professional behavior: Perhaps most effective in helping students to understand professional behavior are preceptors' individual discussions with students about behavioral issues. Are preceptors willing and able to address a student's behavioral strengths and weaknesses with that student?

Extracted from specific recommendations:

Individual pharmacists should: Hold each other accountable for their behaviour; Develop environments that foster professionalism and pharmaceutical care; Serve as
**Hammer, 2006**

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<th>Commentary</th>
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<td>The purpose of this paper is to serve as a tool for preceptors to aid in pharmacy students' development of professionalism. Specifically, to define professionalism, describe it in the context of contemporary pharmacy practice, discuss the professional socialization process of students, and suggests strategies for preceptors to facilitate improvement in professionalism among students during experiential training.</td>
<td>Extracted from section on professionalism defined: Pharmacy has often focused on more behavioral aspects of professionalism, such as initiative, empathy, appearance, courtesy, lifelong learning, responsibility, exceeding expectations, and pride in the profession. One author concluded: &quot;Professionalism is displayed in the way pharmacists conduct themselves in professional situations. This definition implies a demeanor that is created through a combination of behaviors, including courtesy and politeness when dealing with patients, peers, and other health care professionals. Pharmacists should consistently display respect for others and maintain appropriate boundaries of privacy and discretion. Whether dealing with patients or interacting with others on a health care team, it is important to possess and display—an empathetic manner.&quot; Extracted from section on improving professionalism during experiential learning: One of the first strategies is to make explicit both the site and preceptors' expectations for the student; be up front about the behavior that is expected during the learning experience, in addition to the knowledge and skills students are expected to develop. Some examples of expectations to review with the students related to their professionalism may include policies related to dress code, tardiness, patient confidentiality, and cell phone use. One variation of this is to have the student help to define what should be expected of him/her during the rotation, as well as what his/her expectations are for the preceptor(s) and the site; It is important to document these expectations in writing so they can be revisited. Some sites/schools may even have the student and preceptors sign an affidavit or &quot;statement of understanding&quot; of the expectations of both parties, to formalize its importance; Appropriately challenging the student in the experiential learning process is important so that he/she can work toward achieving his/her potential; Preceptors may need to adjust their standards to maximize the learning and development of certain students; Preceptors should treat students with respect and as future colleagues; Respect the knowledge and experience that students bring to the site; challenge them to apply these to the practice, help to facilitate improvement in professionalism; Empower patients to provide feedback about behaviors, services and levels of professionalism; Educate patients and students about patient advocacy.</td>
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Improve it, and learn as much as possible from the experience to improve their future practice. Along these same lines, spend time with the student; Preceptors should provide frequent, specific, and real-time feedback to students, both positive and constructive. If the student does something very well, the preceptor should let the student know immediately and specifically indicate why it was good. Similarly, if the student performs in a manner that is below stated expectations, the student should be taken aside as soon as possible and asked about his/her impression of the situation. The preceptor should then provide his/her assessment of the situation, and together they should create a plan for preventing similar situations from recurring; provide constructive feedback as opposed to criticism; Many preceptors find it difficult to objectively discuss students’ professional behaviors with them. There are tools available to make this easier, such as the Behavioral Professionalism Assessment form. This tool can be used by the student as a self-assessment of his/her professional practice behavior, as well as by the preceptor to assess the student’s behavior. Students and preceptors can then compare each other’s evidence and rationale for their respective ratings and have a meaningful discussion about the student’s strengths and areas to improve; students should be provided with multiple opportunities to provide constructive feedback about preceptors and sites; A teachable moment may occur when the student observes the pharmacist engaging in a difficult encounter with a patient. Asking the student for his/her input about what went well and what the preceptor could have done differently can be a valuable learning experience for both. Scheduled conversations to solicit student input could occur in weekly or bi-weekly meetings with the student to discuss progress toward meeting learning goals and other expectations. Some preceptors have students keep a daily or weekly learning journal to help document this progress. Although the preceptor may have more knowledge and expertise in the area, by listening carefully to the student and providing feedback, “the instructor has the opportunity to clarify misinterpretations that might otherwise go undetected. Students can learn significantly from these new understandings.”

Hutchings et al, 2010

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<tr>
<th>Research</th>
<th>Qualitative/quantitative - Nominal Group Work</th>
<th>United Kingdom (Wales)</th>
<th>Established pharmacists (&gt; 2 years post-registration, newly qualified pharmacists (&lt; 2 years post-registration, pharmacy staff, stakeholders involved in pharmacy policy and development but were not working actively as community pharmacists, included lecturers and education providers, policy developers and policy implementers working specifically in the field of pharmacy)</th>
<th>Community Pharmacy</th>
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<td>The aim of this study was to develop a ranked thematic list encompassing the positive and negative exemplars of patient-centered professionalism in community pharmacy.</td>
<td>Data extracted from results section - Table 3. ‘Final themes encompassing positive and negative exemplars’</td>
<td>Relationships with patients: The pharmacist is highly personable and attentive towards patients. Trust, loyalty and genuine care and respect underpin the relationship. Access to privacy encourages a relationship built upon trust self-caring responsible patients. Safety: Correct prescriptions for patients. Good hygiene. Adherence to codes of conduct and accuracy of service in the interests of patient safety and welfare. Professional characteristics: Highly knowledgeable and qualified professionals. Patients benefit from pharmacists’ collaboration with other healthcare professionals. Strong sense of personal ethics and beliefs. Personal accountability for their actions. Confidentiality and Privacy: Pharmacist and staff treat patients with confidentiality and privacy. Changing professional roles: Taking on new roles. Separation of healthcare and management roles. Increased time to consult. Raising profile of pharmacy team. Confidentiality is respected and trust and loyalty develops with patients. Provision of Medicine-Use Reviews for patients by pharmacists.</td>
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and members of the public.